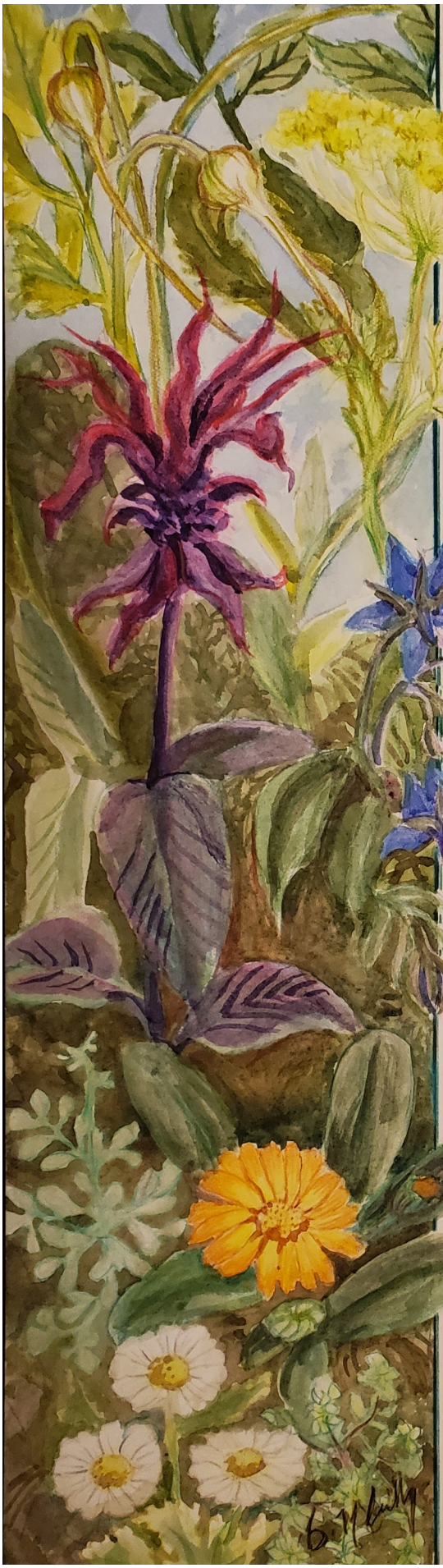


The People's Club
Gardening & Non GMO Food
Communal Gathering

Gardening Guide

Herbs

Illustration by Rebecca McCarthy

Aloe Vera

Description: is a species of succulent plant that thrives in dry, hot regions of the world. Aloe vera is a stemless or very short-stemmed succulent plant that can grow as high as three feet tall. The leaves are thick and fleshy, green to grey-green, with some varieties showing white flecks on the upper and lower stem surfaces. Yellow flowers may grow on outdoor aloe plants, but not on indoor potted aloe plants. Aloe plants are made up of 95 percent water, and even a slight frost will freeze them and turn them to mush.

Aloe barbadensis is the type of aloe generally used medicinally. There are over 450 species of Aloe, some of which appear to have similar properties but possibly less effective. Other aloes are poisonous. There are bitter aloes (like Aloe ferox) and very pointy aloes (Aloe acutissima). Aloe Vera is a hermaphrodite plant so it doesn't require a male or female plant for its reproduction process. Both these organs are present in the plant.

Growing Instructions

Optimal Time/Temperature:
Aloe Vera plants are native to tropical regions, but they're common household plants in a variety of climates. Aloe Vera plants prefer 8–10 hours of sunlight a day. While they grow best in warm or hot temperatures, they are capable of surviving cooler seasons in a more dormant state. However, they may suffer harm if exposed to temperatures below 25°F (-4°C). Hardiness zones 9, 10, and 11 are most suitable for keeping Aloe vera outdoors year round. If you live in another zone, you may wish to keep your Aloe vera outdoors most of the year, and bring it indoors before the frost. The sunniest windows are those facing west or south if you live in the northern hemisphere, or those facing west or north if you live in the southern hemisphere. While aloe is hardier than most plants when it comes to sun exposure, it is still possible to burn the leaves. If the aloe plant turns brown, move it to an area that receives shade during the early afternoon. If the leaves are growing flat and low, increase sunlight. Aloe Vera leaves should grow upward or outward at an angle, toward the sunlight. If they are low to the ground or growing flat outward, the plant is probably not receiving enough sun. Move it to a sunnier area. If it is indoors, consider keeping it outdoors during daylight hours. If you live in growing zones 10 to 11, where there is no chance of freezing, you can grow your aloe outdoors as a garden plant instead of as an indoor house plant.

Optimal Soil Conditions:
If planting Aloe Vera in a container, make sure the container has a hole in the base for water to drain through. Aloe Vera plants are adapted for survival in dry conditions, and may rot if planted in soil that collects standing water. Use a cactus potting mix, or create your own mix using equal parts soil, sand, and gravel. Place the Aloe Vera root ball just below the soil surface. If any of the thick, green leaves are partially buried or touch the soil, they may rot. Place a layer of small rocks around the base of the aloe plant to keep the soil in place and reduce evaporation. This is not required for your aloe plant to thrive, so you may leave the soil exposed if you prefer the appearance.

White stones will reflect warmth from the sun to the base of the plant, which can be a good idea if you do not live in a hot climate. While any healthy aloe plant has a chance to produce younger plants, or "pups", this is most likely to happen when the adult plant has reached the boundaries of its container. Aloe prefers neutral to slightly alkaline soil in the 7.0-8.5 pH range. If the soil is too acidic, this will hinder the growth of new roots.

Best Companion Plants: borage, scented geraniums, any plant from the onion family, sow thistle, balm of Gilead, elderberry, Aeoniums, Agaves, and Sedum nussbaumerianum (Coppertone stonecrop) are compatible companions.

Crop Maintenance

Moisture Requirements & Solutions:

Aloe Vera plant can withstand hot climates since the plant stores water in its stems. It could live up to 2-3 month without watering. Before you start watering, give the aloe plant a few days to repair any roots that may have been damaged during planting. Watering damaged roots increases the chance of root rot. Give it a light watering the first one or two times you water if you would like to be extra safe. During summer, or any time the weather is warm and sunny, aloe plants will grow fastest with regular watering. However, it is much easier to overwater aloe plants than to dry them out, so do not water until the soil has dried out to a depth of 3 inches (7.5 cm).

If the leaves are thin and curled, increase water. The thick, fleshy leaves store water that the plant uses in times of drought. If the leaves are looking thin or curling, water the aloe plant more frequently. Be careful not to overcompensate: water should drain quickly through the soil to prevent root rot, which is difficult to stop**.** Yellowed or "melting" leaves are suffering due to excess water. Stop watering altogether for the next week (or two weeks during the dormant season), and water less frequently once you resume. You may remove any discolored leaves from the plant without much chance of harm, although it is best to use a disinfected knife.

Aloe plants often go dormant during winter, or when the weather is cold for a prolonged period of time. Unless you are keeping them in a heated room year round, you should only water them once or twice a month during this period.

Weeding Needs & Solutions: The soil around the aloe plant should be free of grass and weeds. Remove these regularly if the plant is outdoors, but do so carefully. Because good aloe soil is loose and sandy, it is easy to damage the roots with vigorous weed- pulling.

Feeding Needs/Optimal Natural Fertilizers: Aloe plants do not require fertilizer, and overuse can harm the plant or cause it to grow in an unhealthy manner.

Pests, Diseases & Solutions: There are a few pests that are common fans of the aloe plant, such as mealy bugs. These bugs are flat and brown or tan and they like to suck on the sap from aloe plants. To prevent them, use a natural pesticide on your aloe plant.

The difference between aloe root rot (brown or black, mushy and may fall off if touched, or rotten smell) and healthy roots (white or pale. Firm and strong, no smell) will be evident. Before you treat root rot, make sure to trim off infected roots and don't forget to gently wash the soil off the remaining healthy roots before re-potting it with fresh soil. You can use a natural fungicide, hydrogen peroxide, or homemade remedies like cinnamon, charcoal, and chamomile.

Harvest and Storage

When to Harvest: Unlike many plants in the succulent family, Aloe Vera cannot be grown from a leaf cutting. You must instead use the younger, separate plant attached to the main plant, preferably with its own roots system and several shoots. Wait until you need the gel to harvest it. When you need it cut a leaf one at a time.

How to Harvest: If you're going to remove leaves from your aloe plant, take the lower, older leaves from the bottom of the plant.

Optimal Storage temperature and conditions: You can place a broken-off leaf in the refrigerator to cool it down, then rub it over a burning for healing, skin dryness, create a facial mask, sooth a cold sore, make homemade soap, or add to a smoothie.

Aloe plants can be very handy to have around. Break off a mature aloe leaf and rub the gel from the inside over your sunburn or cut open the leaf and place it gel side down on your burn and reapply every few hours or as needed to keep your skin moisturized. The area where you broke the leaf will callous over and the plant will be just fine. Don't use aloe on open skin or wounds that are below the surface of your skin. If you have a major burn, see a doctor. Do not apply aloe gel to skin that is bleeding, blistered, or otherwise severely damaged.

Wait until you need the gel to harvest it. If you are harvesting a large amount, you may need to cut the leaf in half (lengthwise) in order to get all of the gel out. If you have any leftover gel, you can store it in an airtight container in the refrigerator for up to a week.

There are three main methods used to increase the shelf life of your freshly harvested gel - freezing the gel, mixing the gel with honey, and mixing the gel with vitamin C:

a) freeze the gel in an ice cube tray rather than one large block means that you can just take out individual pieces whenever you need them. Using a silicone tray works best as you can turn the tray inside out. Small plastic containers also work fine if you do not have an ice cube tray. Once your tray is filled, the gel is ready to be frozen. Make sure the tray is flat in the freezer to avoid any of the gel seeping out. Leaving the cubes overnight will give them plenty of time to freeze. The cubes need to be totally frozen to be preserved so make sure you give them enough time in the freezer before removing. Store the cubes of aloe vera gel in your freezer for up to a year. Keeping them in a bag will enable you to have easy access when you decide to use them.

b) the container needs to be large enough to mix the honey in but feel free to use smaller containers if it is more convenient for your storage set up. The container should also have a lid to keep contaminants out. Mix honey in with the gel at a 1:1 ratio. Honey has such a low water content versus a high natural sugar content that it helps preserve the gel for a much longer time than the gel would have naturally. This process is similar to the way fruit is often stored in syrup or as a preserve. Using a high-quality honey that is free from preservatives will ensure that the gel lasts as long as possible. Store the gel in the fridge or at room temperature for up to 8 months. Be sure to keep the gel away from direct sunlight. Because the aloe vera is now in a gel solution with the honey, it mixes really well into other products. These options might include: Facial scrubs, Body wash, and Hair products.

c) put your aloe vera gel into a blender but don't blend yet. The gel has a very gelatinous texture in its raw state and this can make it difficult to work with when using the gel for some purposes. Putting the gel through the blender allows it to become separated and liquefied. This makes it much easier to work with. Add your crushed vitamin C tablet.

For every ¼ cup (60ml) of gel, add in 500 milligrams (0.018 oz) of vitamin C to the mixture. This combination will help preserve the gel for up to 8 months in the refrigerator once it has been mixed in. Blend your gel on high for a few seconds. This will ensure that the vitamin C is mixed in with the aloe vera and that the texture becomes liquefied and broken down. You should be left with an aloe vera juice. The juice should be much more runny and less gelatinous than it was before. Transfer the juice to a covered plastic container. There will be a foamy layer on the top of the liquid but this will go away after a few days so there's no need to worry about it. Move your juice to the refrigerator for storage. The juice is now ready to be used or stored for up to a month.

Seed Saving: If you are lucky enough to see your aloe flower and fruit, you may collect the seeds and attempt to plant them. Because a bird or insect may have cross-pollinated the Aloe vera with a different aloe species to produce a plant with different qualities, and because growing from seeds has a lower success rate than growing from pups, this is rarely done. If you do attempt to grow aloe from seeds, use black seeds and spread them across the surface of the soil. Weigh them down with sand and water frequently until they sprout. Grow them in indirect light and transplant them to a larger pot 3 to 6 months after sprouting.

Propagating new plants:The young plants will do best if you wait until they are a little larger and mature enough to have a few roots of their own. While this size varies with subspecies and individual plants, a good rule of thumb is that the young plant should be at least 3 inches (7.5 cm) tall, and preferably 5 inches (12.5 cm). If the container has sufficient space, wait until the young plant is 1/5 the size of the adult and has several sets of "true leaves" that look like the adult's. Sanitize your knife first to reduce the chance of infection. Clear away the dirt at the base of the pup to see whether it is attached to the mother plant. If it is, cut it away, making sure to keep the young plant attached to its roots if any are present. The presence of its own roots will increase the odds of success, but they may not be easy to find before you remove the pup.

Instead of planting the new aloe immediately, you may wish to allow the plant to form a callus over the knife cut. Placing the cut surface of the plant directly against soil increases the odds of infection. Place the young plant on top of well-draining soil, without burying the leaves.
Because the root system is likely to be small (or even nonexistent), you may need to prop up the plant with a layer of pebbles and lean it against another object. The root system should grow large enough to support the plant within a few weeks.
Mist once every few days if the plant has no roots. Before the roots have grown in, do not water the plant. Wait at least a couple weeks for a pup to grow its own roots before watering it.
Instead, mist the plant with a spray bottle once every three days. Aloe plants can last a long time without water, and if you water the plant before its roots are extensive enough, the water could pool and rot the plant If the pup already has its own root system, you may instead get the roots to set by giving it one watering and leaving it in the shade for 2 to 3 weeks.

Notes- Any plant kept in the shade for a long period of time may require slow adjustments before being exposed to full sun. Move it to an area of partial shade for several weeks before placing it in sunlight.

To help your aloe last for years, it's a good idea to repot it in in a bigger pot where it will have more room. If the aloe is already in a large, sturdy clay pot with holes in the bottom, you don't necessarily need to repot it.

Do not use aloe if you have a known allergy to plants in the Liliaceae (lily) family.

If you have cats make sure you don't let them nibble your aloe vera plant!

Aloe vera gel has been found likely to be effective for treating dandruff. All you have to do is massage a small amount of the gel into your scalp. After you have washed your hair, rub a small amount of aloe gel between your hands (about the same amount you

would use to shampoo your hair). Then use your fingertips to massage the gel into your scalp and leave the gel in your hair.

Warning: If you are harvesting the aloe vera gel straight from the plant you will need to make sure you let the plant sit vertically in some water after slicing a small portion off the end to allow the aloin to drain out. Aloin is a highly potent laxative and if it isn't removed it can have some unwanted effects on those who consume aloe vera products.

You might want to reconsider eating the raw whole leaf-- even a tiny bit. According to the US National Center for Complementary and Integrative Health, oral aloe is associated with a risk of diarrhea and abdominal cramping. Also-- potentially more dangerous is that raw aloe leaf extract has been shown to increase digestive system tumors in lab animals. While it has not been proven to be dangerous in humans, there is a definite risk from eating the raw leaf.

Anise

Other Names — Anis de Chine, Anís Estrellado, Anis Étoilé, Anis Étoilé Chinois, Aniseed Stars, Anisi Stellati Fructus, Ba Jiao Hui, Badiana, Badiane, Badiane de Chine, Bajiao, Chinese Anise, Chinese Star Anise, Eight-Horned Anise, Eight Horns, and Illicium verum.

Description:
USDA Zones- 8–11; If the temperature falls below 15F, your plant will die. Therefore, If you live in the north, you should avoid growing this tree.
Growing star anise is easy in subtropical climates. It is adorned with beautiful flowers and fruits that are star-shaped. It is a tropical evergreen tree, tall between 5-10 m. Star anise has large glossy green foliage, its white flowers are beautiful and of great decorative value. Star anise fruit has eight carpels that together form the star-shaped fruit (hence called "Star anise").

Growing Instructions

Star anise is propagated by seeds or cuttings. Star anise requires dappled shade, partial sun but if you're growing star anise in a much cooler climate, plant it in a warm and sunny location.
Choose a position in a way that it is not exposed to cold and dry winds. Choose a position in a way that it is not exposed to cold and dry winds.

Optimal Time/Temperature for Germination:

Seeds are propagated best when temperature range from
65-70 F (18-20 C). You can sow seeds in pots or directly outside. Water the seeds frequently to keep the soil moist and make sure the pot has drainage holes in the bottom to drain excess water.
Can best be grown from cuttings.You will need at least a four inch tall section. Cut it using a sharp knife. The cutting requires a sterile soil to grow. A mixture of sand or peat and perlite is perfect for growing your cutting. Cutting is recommended because it allows the roots to grow faster.

Optimal Soil Conditions:

Provide soil that is humus and compost rich. Soil texture should be loamy and well drained. Slightly acidic to the neutral soil is optimal.
Seed Planting Depth, Spacing and Procedure: If you are growing Star anise from seeds, you should test the seeds first.
Put the seeds in a container filled with water. The seeds that sink to the bottom are valid seeds and you can plant them. However, the seeds that float to the surface are not valid and you should throw them.
Once you have the valid seeds, sow them 1/2 inch deep in the soil. Cover them with a potting mix if available.

Crop Maintenance

Moisture Requirements & Solutions:
For growing star anise, do regular watering and keep the soil slightly moist but reduce the watering in winter. However, you should water it carefully as over watering will cause root rot.

Feeding Needs/Optimal Natural Fertilizers:
Star Anise is not a heavy feeder, in fact, it is enough to fertilize only once. Fertilizing this tree should be done in spring using a compost or an aged manure. Spray the fertilizer on the ground surrounding the tree and you will plant will grow perfectly.
Pests and diseases: Star Anise is an extremely sturdy plant. Consequently, there are not a lot of diseases and pests that can infect it. In fact, this tree can protect itself. It has pest repelling properties and anti-bacterial compounds that protect it from pests and diseases.

Pruning - When the plant is the young, pinch and prune it if you want to make it bushier. There are no special pruning requirements. However, you can always prune off dead, diseased and weak branches.

How and when to Harvest:
Star anise tree takes at least 6 years to fruit if grown from seeds. These fruits (wrongly called seeds) are picked unripe while they are still green, these fruits are sun-dried i a sunny spot until their color changes to reddish-brown. Seeds can be removed once the fruits are ready to be stored.

Optimal Storage Temperature and Conditions:
Store in cool dry place.

Seed Saving:

Seeds can be removed from the fruits once they turn reddish brown and when completely dried may be stored in cool dry place.

Notes:

Star Anise Uses -
Star Anise is widely used in Asian cuisines to flavor dishes especially meat and curries. It is also used in desserts and beverages. Together with fennel seeds, cloves, cinnamon and pepper it is considered as one of the "Five Chinese Spice", used for its strong taste and spicy flavor. It is an essential part of Chinese cuisines and also used in a variety of Indian recipes. It's an addition to other popular Indian spices makes a special spicy ingredient, which is called "Garam masala".

**Don't confuse Chinese star anise with Japanese star anise it is similar in its shape and look to the Chinese Star Anise however, Japanese star anise is a highly toxic plant.

Basil

Description: Basil plants are one of the most popular herbs to grow and also one of the easiest. Sweet basil (Ocimum basilicum) is a member of the mint family. It is closely identified with Italian cooking, although it is originally from India. The extremely aromatic leaves also have a delightful variety of flavors, from the slightly lemony-mint of sweet basil to cinnamon and licorice. Leaf colors span from rich green to deep purple, with smooth or crinkled leaves. The flowers are insignificant but very popular with bees.
All types of basil grow easily in warm, sunny weather. The leaves are commonly used in cooking, but the flower buds are also edible. This fast-growing herb thrives equally well in gardens and containers. With sufficiently warm weather, new basil plants are ready for pruning (to encourage bushier growth) in about six weeks.

Varieties:
Genovese (Ocimum basilicum 'Genovese'): This variety has larger leaves than the species sweet basil, with all the flavor.
Cinnamon or 'Mexican Spice' (Ocimum basilicum 'Cinnamon'): Enjoy the green foliage, purple flowers, and spicy, cinnamon scent.
Lemon basil (Ocimum basilicum x citriodorum): This is a hybrid plant with a distinct odor and taste of citrus.
Thai basil (Ocimum. basilicum var. thyrsiflora): This variety of sweet basil has a sweeter taste with a hint of licorice. It is very common in Asian cuisine, especially Vietnamese dishes.

Growing Instructions

Optimal Time/Temperature for Germination:
Basil is a warm weather herb, so it is often planted from nursery transplants that have been started in greenhouse conditions. If you grow basil from seeds, you will need to start them indoors about six weeks before your last spring frost.

Optimal Soil Conditions: Basil does best in moist, rich, well-draining soil. It's a good idea to amend your soil with compost or other nutrient- rich mulch. The soil should be a pH of 6-7.5. Whether you're growing basil outdoors in the ground or in a container, the drainage needs to be excellent.

Seed Planting Depth, Spacing and Procedure:
Sow basil seeds evenly by covering them with about ¼ inch (6 mm.) of soil. Keep the soil moist and make sure you remove any weeds. Seeds Germinate in 7-10 days. The seedling can be recognized by D-shaped seed leaves that will have the flat sides facing towards each other. Once you see a few more pairs of leaves, you should thin the basil plants to be about 6 to 12 inches (15-31 cm.) apart. Basil should be grown in a place that gets sunshine at least six to eight hours per day. Basically, the best time to plant basil seeds is when all danger of frost has passed in the spring. Every area has a different climate, so when to plant basil seeds can differ from state to state. In colder climates start seeds inside for transplant in spring, 6 weeks before last spring frost.

Best Companion Plants and Plants that Hinder:
Asparagus, attracts lady bugs to control aphids and other pests. Basil repels asparagus beettles.
Borage, improves the growth and flavor of basil.
Chamomile, Oregano, Chives, increase the strength of the essential oils in their herb garden neighbors, making basil more flavorful and effective in the garden as pest deterrent.
Marigolds and basil are a natural insect-repelling pair, so plant them nearby one another to double up on a potent aromatic shield.
Peppers, Basil is doubly effective for peppers, both repelling pests and providing dense ground cover to increase humidity and warmth.
Root vegetables, the leafy green tops of parsnips, radishes, turnips, carrots and beets all benefit from the pest-repelling aromas of a nearby basil plant.
Avoid Herbs not listed above as companions, basil prefers vegetables over other herbs.

Cucumbers will take up flavors of what is grown around it so basil can change the taste of them.
Fennel is a garden crop that does not grow well with most other vegetables so is not recommended as companion. It can inhibit growth of most other plants-stunting them or even killing them.

Crop Maintenance

Moisture Requirements & Solutions: Water basil deeply on a regular basis, but be sure its soil is well-drained. Use mulch to help keep moisture in.

Feeding Needs/Optimal Natural Fertilizers:
Organic universal fertilizer fully meets all these criteria and is therefore also wonderfully suitable for supplying your basil plant.
The high nitrogen content promotes both growth and leaf formation. Sufficient phosphorus and potassium are in turn important for root formation and the resilience of your plant.

Pests, Diseases & Solutions: Aphids are the biggest basil pest, especially with plants grown indoors. Beetles and slugs also can be a nuisance outdoors, creating holes in the leaves. Cover your entire plant with a soap solution of 2 teaspoons of dishwashing liquid to a full gallon of water to eradicate these pests.
Basil is susceptible to powdery mildew, which can be controlled by providing plenty of space between plants to improve air circulation, and avoiding overhead watering, which can splash fungal spores onto the plants. Severely affected leaves should be picked off and discarded.

When to Harvest/Number of days to maturity:
Basil is ready to start harvesting in about 60 to 90 days from seeding.

Harvest and Storage: Allow plants to get 6-10 inches tall and use small snips or scissors to harvest by snipping stems just above leaf nodes, (the place where the leaves connect to the stem). The nodes will then regrow another branch each time you harvest. To ensure the plants continued growth never cut off more than half (50%) of the entire plant off.
You can harvest the new growth off the basil plant every 7-10 days, by pruning off the top 2-4 sets of leaves on each stem. Soon, you'll have side shoots that grow from where you harvested before, and this is what helps make the plants bushy and robust. You can harvest basil as often as you want during the growing season.
Single leaves can also be harvested as needed for immediate use.

Optimal Storage Temperature and Conditions:

Refrigeration is a bit cold for tender basil and it will turn black or not last long in the refrigerator. When harvesting stems, pinch off the bottom set of leaves (for use immediately), bundle the stems together like a bouquet, place stems in a glass or jar of water and leave them on the counter.

Swap out the water every 2-3 days and your basil will stay fresh for 7-10 days. Keep it out of direct sunlight for best results. The stems may even begin rooting when stored this way.
Optimal Preserving Procedures: Basil leaves can be dried or frozen for use after harvest. Dried basil is convenient but at the cost of some flavor. Frozen basil has a stronger basil flavor than dried but at the cost of texture. Use frozen basil in cooked dishes.
If you like to cook with basil and olive oil, blend fresh basil with your favorite olive oil and portion it into an ice tray for freezing. Store the frozen cubes in an airtight container.

Seed Saving:

Basil plants are pollinated by small flying insects. The different varieties will readily cross pollinate so it is important to isolate the variety you wish to harvest seed from by at least 150 feet (45.5 m) apart. This will prevent another variety from polluting your strain. The seeds are contained in the spent flower head. Be aware that Basil will readily re-seed itself by spilling seeds on the ground when flower heads are left on plant to long. Use a fine colander for basil seed collecting, as the black seeds are very tiny. Cut off the brown and spent flower heads and let them dry for a few days in a warm, dry location. Crush the heads over the colander and pick out the old petals and any chaff. Basil seed collecting is that simple.
You can also put the dried seed heads into a paper bag and shake it, then crush the bag with a rolling pin, tip the pulverized plant material into a shallow tray and blow out the chaff. You now have home-harvested basil seed which will be of the parent plant's strain, provided they didn't cross pollinate.

If they are properly stored, basil seeds are viable for up to five years or more. Label and date your seeds and rotate them so the oldest are used up first. Seeds that are completely dry and kept in a dry, dark location should be viable for years after basil seed collecting. Place the dried seeds in a plastic bag or glass jar with a sealable lid.
Put the bag or jar in the freezer for a couple of days to kill any insect pests that may still be in the plant material. Ensure there is no air in the container and store the seed in a cool, dark place. Seed viability will be affected if the seeds are exposed to more than minimal light.

Bay Laurel

Laurus Nobilis

Description: Delicious, fragrant bay leaves come from the bay laurel, a perennial shrub or tree with pale yellow flowers and black fruit, attractive olive-to- reddish bark, and dark leathery leaves.
Bay leaves are incredibly versatile. The herb's flavor complements rice dishes, soups and stews, Catalan and Greek recipes, and Creole cuisine. Bay leaf also works in pantries to repel grain beetles and silverfish, and it lends its aroma to candles, holiday wreaths, and potpourris.
Common Names: Bay Leaf, Bay laurel, Grecian laurel, Sweet bay, and California laurel
Plant Type and Size: Evergreen Tree/Shrub (trees can grow up to 25 feet)
Hardiness Zones 8 and above, if you live in zones 8-11, you can grow a 25 to 60 foot tall bay laurel tree outdoors, and it will give you more bay leaves than you will ever need in a lifetime. They are beautiful and aromatic, so if you live in those zones, it might be worth growing them.

Growing Instructions Optimal Soil Conditions:
While Bay laurel isn't fussy about soil types, it benefits from somewhat sandy soil that drains well. Soil pH of 4.5 - 8.2 is optimal.

Seed Planting Depth, Spacing and Procedure:
Since laurel is so slow-growing, starting from seed is not recommended. To propagate a bay laurel, obtain a six inch stem cutting from a semi-ripe stem, taken toward the end of July. Remove the lower leaves, dip the cut end in rooting hormone, and insert into moist soil. Throughout the rooting process, maintain moist soil and keep the cutting in the shade. When the roots have developed, new leaves will appear above the soil. Once it is about 12 inches tall, plant your bay laurel outdoors. Transplant Bay laurel when it is semi-dormant, between fall and spring. Bay laurels don't propagate easily, so propagate multiple stems at once.

When planting in the garden, make sure the location has good drainage, as bay laurel tolerates many soil types, but not poor drainage. This plant also dislikes strong winds, so give them a protected location.

You can create a fragrant hedge by planting the laurels about 2-3 feet apart and pruning. Prepare each planting hole with plenty of room for roots to spread out, about three times the size of the root ball, and mix some compost with the original soil. Remove the sapling from its pot, shake off old soil, and untangle the roots. For good drainage, make a cone in the center of the planting space that will support the roots' center above excess water but allow roots to trail down to seek moisture. Spread the roots out evenly over the cone. The tree's soil line, where the trunk meets roots should end up even with the surrounding soil. Fill in the hole with the soil-compost mix, water, and add a supporting stake if necessary. If you are planting your bay laurel in the ground, allow several feet of space around it.
If planting in a container, choose one that is at least five gallons.

Best Companion Plants and Plants that Hinder:
Bay Laurel is known for repelling pests, so is a welcome helper around the garden.

Crop Maintenance

This slow-growing tree can be grown indoors, but in a warm climate, it will grow faster and taller if planted outdoors in soil. Bay laurel will need partial shade and protection from the burning afternoon sun, and it will also need protection from frost if you live in a cold climate. You can move the plant indoors for the winter if you grow it in a container on your patio that can be moved—for instance on a stand with wheels. Native to the Mediterranean, the bay laurel is accustomed to living in bright sunlight, although they will also do fine in partial shade. When choosing a location for your bay laurel, find a spot that receives plenty of sunshine but also has some protection from strong winds, which can damage these plants. If you are growing a bay laurel indoors, place it in a south-facing window to get maximum sun exposure.

Moisture Requirements & Solutions:
Water deeply once or twice a week, when the top one to two inches of soil are dry. Check to make sure the water is draining rather than pooling around roots and causing rot and disease. Reduce water during the winter. Once or twice a year, shower the plant with water to remove dust, cobwebs, etc. from the leaves.

Bay laurel enjoys moderate humidity and even coastal conditions like the Mediterranean region offers. There's not much to do to regulate outdoor humidity aside from adjusting your irrigation, but keep this in mind when selecting an indoor location for laurels in containers.

Feeding Needs/Optimal Natural Fertilizers:
Amend the soil with an organic fertilizer that promotes vegetative growth. Stay away from one that stimulates flowering or fruiting. During the growing season, feed your bay laurel with organic compost or nitrogen-rich fertilizer about once every two weeks for optimal growth.

Pests, Diseases & Solutions:
Scale is the most likely pest to trouble a bay laurel plant. Sap-sucking scale insects can look like tiny barnacles or a waxy white coating along the branches. To remedy scale it is recommended that during the dormant season, you use a soft-bristled brush to scrub off the scale, and then apply horticultural oil (like Neem oil). If you see yellowing leaves or branches, look closely for scale, and remove any branches if they are dying.

Bay laurels are largely resistant to pests and diseases, although the sap in the tree does attract a few insects, namely aphids and psyllids. If your bay laurel is affected by either of these bugs, you can treat the infestation with neem oil. If you are harvesting your bay leaves for cooking, it's important to use non-toxic organic insecticides to take care of any infestations. Another common disease is anthracnose, which can be cured by pruning away affected leaves and foliage.

Harvest and Storage

When to Harvest/Number of days to maturity: You can pick a few fresh, mature leaves at any time. But keep in mind that, according to one source, leaves should not be picked when the plant is wet, let soil dry out and pick between watering.
The flavor may mellow if you pick leaves and allow them to dry in the shade for two to three days. Freshly dried leaves have the best flavor, so store dry leaves in an airtight container out of sunlight, if you aren't going to use them right away.

How To Harvest:
Pick as many leaves as needed from mature plants. Bay leaves can be harvested all year round. If you are harvesting bay leaves from an outdoor plant, be sure to rinse or wipe them off before using them in order to remove any dirt or insects. Cooking is the most common use for bay leaves. Adding bay leaves to soups, stews, and, casseroles.

Pruning - Left unpruned, bay laurels can grow quite large, around 50 to 60 feet high, although on average they reach a mature height of 20 to 25 feet. Retaining the central leader (trunk will encourage height. However, this is a very malleable tree and can be kept much smaller, particularly if you want to use it as a border or screen in your garden. Container- bound bay laurels will typically reach a mature size of five to six feet. Bay laurels grow slowly, usually at a rate of a few inches per year.

As an ornamental tree, bay laurels can be pruned to almost any shape — spherical or pyramid shapes being the most popular. Young plants with few branches should be pruned lightly. Prune your mature bay laurel annually in late winter to keep it neat and to maintain the desired shape. Remove damaged branches and overgrown stems with sharp, clean shears. Prune no more than 25% each year.

Bay laurels can also be trained to grow as shrubs by allowing the suckers to develop into their own branches. To do this, prune back the stem lengths and keep the height low to encourage the plant to spread wider rather than growing upward.

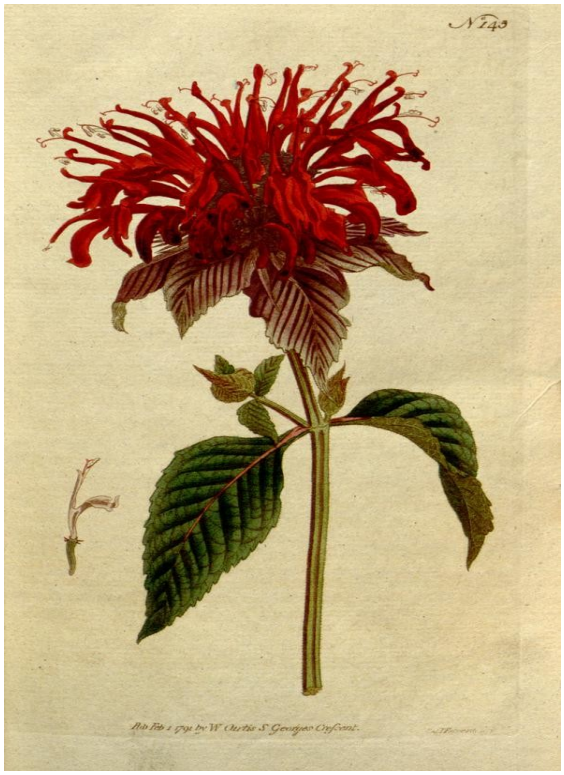
Optimal Storage temperature and conditions:
Bay is best dried and stored in an airtight container in a cool dry place.

Notes:
Bay leaves are toxic to Dogs, Cats and Horses. While humans frequently use bay leaves in cooking, the herb can be toxic to animals when consumed in large quantities. Animals affected by bay leaf toxicity include dogs, cats, and horses. Symptoms of poisoning from bay leaves include diarrhea and vomiting.

Bay leaves are not toxic to humans, but they are typically removed from dishes before serving because they do not break down while cooking and can be unpleasant or a choking hazard.

Bay laurel trees have extensive root systems that can be invasive. If you are planting a bay laurel in the ground, be sure you plant it a reasonable distance from your home or any other structures. Do not plant bay laurel trees near a swimming pool or sewer lines, or on top of a septic tank. If you are concerned about invasive roots in your yard, it may be best to keep your bay laurel in a container.

Bergamont



Description: The bergamont herbs are perennial plants native to North America and are members of the mint family Lamiaceae. The blossoms, appearing in dense clusters stem terminal, last from July through September and make the plant an attractive addition to gardens. Members of the bergamont family come in a variety of colors - red, purple, or white. They can also have dark purple dots on the lower lips of their corollas. The individual flowers are tubular which is perfect for hummingbirds while bees and butterflies attract as well.

Bergamont varieties have been valued for ornamental, culinary, and medicinal uses. The leaves appear very much like the leaves of mint. The edges of the leaves are serrated. The main difference being that wild bergamont leaves are longer than their minty cousins. The leaves are lanceolate or ovate. They are 2 to 3 inches long and 1 to 2 inches wide. Leaves are light green and grow opposite each other on the stem (every leaf will have a twin opposite it on the stem. The stems are square shaped (as are the stems of all members of the mint family) and if you cut the stem, you will see that the stem is hollow. It has its relatives' shallow, dense root system.

Red bergamont is also known as "bee balm" and was once known as Oswego tea. Wild bergamont (most common one) is a perennial herb native to the eastern United States. The plant reaches a height of about one meter and has a wider geographical distribution than other Monarda species. Wild bergamont (Monarda fistulosa) and Bee Balm (Monarda didyma) are in the same genus, but they are different species in the same family. They look similar and can be grown side by side, but they are not the same plant. Many people mistakenly refer to wild bergamont (Horsemint) as Bee Balm which has the scent of oranges. They also have common names like Scarlet Monarda, Lemon Bee Balm, and Lemon Bergamont (Monarda citriodora).

Growing Instructions

Optimal Time/Temperature for Germination: These hardy plants can survive at – 20 degrees Fahrenheit (-28 Celsius). Check your local nursery or look online for seeds may need to be raised in trays before transferring to the garden space. If you want to sow inside and then move the sprouts outside, you have to wait until March. Bergamot grows well in zones 3-8. Germination takes place in 10 to 14 days at 70 degrees Fahrenheit (21 Celsius). If you do not want to establish seedlings, simply scatter the seeds on the ground or in potting soil in a pot and use your fingers to press them into the soil.

Alternatively, the plant can be grown from root divisions taken in spring or autumn/fall, or from stem cuttings taken in the summer. Growing from seeds is slow, so you may prefer this method. Because they are so hardy, you can also plant cuttings without roots. In early summer, you can cut shoots 3 to 4 inches long. Plant these into potting soil. In early fall, these can be planted out into your flower beds. They grow roots and establish themselves very quickly.

Optimal Soil Conditions: Sow seeds shallowly and cover lightly in a seed raising tray. Add a source of heat beneath the tray if needed. When seedlings grow, transfer to the garden spot after hardening off. (root cuttings, transplant directly.) Bergamont loves soft soil that holds moisture well. It is well suited to loam, sandy loam, or clay.

The soil needs to be well-drained and rich in nutrients, so add a large amount of compost during planting. Soil pH preference is 6.0 to 7.0. Bergamont loves morning sun and afternoon shade. Make sure it has a lot of direct sunlight in the morning and that it is sheltered from the sweltering sun in the afternoon. It will do fine with partial or full shade in the afternoon. The plants do best with at least 6 hours of full sun a day.

Seed Planting Depth, Spacing and Procedure: Carefully brush the seeds into the tray and press the seeds gently into the fertile soil but do not bury the seeds, just anchor them for they are tiny. Later, thin out the seedlings or transplant them to 18 in. apart. They are vigorous growers and will spread a lot. Bergamont grows into a very large bush in spring and summer. Spacing the plants properly will help ensure they do not grow unruly. If you are planting single plants, make sure there is an 11-inch perimeter around the plant. If you want to plant a row of plants like along a border fence, plant each plant leaving an 11-inch space in each direction.

Best Companion Plants: Bergamont is a good companion plant for tomatoes and fruit trees. What's more, a leaf or two tucked in a hat or pocket, will help repel pesky mosquitoes and gnats. Because it tolerates a wide range of garden conditions and is aggressive enough to hold its own against all comers, planting it with Joe Pye weed makes for a great combination. The daisy-like flowers of the Rudbeckias are contrasted with the clustered flowers of the monarda providing interest beyond color in the summer garden. If the summer garden plan calls for soft pastels and look for a daisy shape to complement it, then Echinacea purpurea (purple cone flowers) are just the thing.

Crop Maintenance: If you cut the plants back in early summer the plants will quickly grow back and bloom beautifully. Do not throw the cuttings away. You can replant the cuttings anywhere there is a gap in your yard and the stems and leaves can be dried out to make a delicious tea. If you find shoots coming up where you do not want them, just pull them out. Because of the shallow rhizomes and the moisture in the soil, it will be very easy to pull out unwanted plants. You can plant these wherever you have a gap.

If it is grown in the correct place and the soil is nutritious and fertilized, a single bergamont plant can grow into a bush that is 47 inches high and wide. Cut down to ground level in autumn/fall and mulch it well to expect its return next spring.

Once planted, bergamont will seed readily but it should be subject to regular division, to remove the dead center. Aim for dividing every three years.

Moisture Requirements & Solutions: Water on a regular basis to keep moist but don't over-water. During winter, water your bergamont once a week. During the summer months, you can water your bergamont once or twice per month depending on rainfall. If you are growing your bergamont from seed, do not use a hose or watering can to water your trays. The seeds are extremely small and lightweight and will wash away. Always water seedlings with a spray bottle.

Weeding Needs & Solutions: One good clean-up while it is still cool in spring does the job, then add mulch. Apparently, sand eats compost because it sure vanishes unless you continue adding more. So dress the perennials at least once a year with compost.

Feeding Needs/Optimal Natural Fertilizers: Fertilizer is not typically necessary.
Apply only a sprinkling of a balanced fertilizer in spring, if desired. An excess amount of fertilizer can prompt powdery mildew and rapid or rampant succulent growth. So when you do, work organic nutrients from compost, blood meal, or cottonseed meal into the soil for its adequate growth.

Pests, Diseases & Solutions: Bergamont is deer resistant and mosquitoes hate it.
Powdery mildew will cause leaves to become discolored. This is purely cosmetic but not harmful. To correct the problem, keep the ground moist, cut off all diseased leaves, spray the plant with water regularly (try spraying with a power sprayer or turn the tap on full and hit the powder head-on), and try to improve ventilation around the plant. To reduce the re-occurrence of powdery mildew, move clumps of the plants every 2 years to limit the opportunity for mildew to develop. For Leaf Spot Fungus follow the same process. Both conditions can also be treated with a natural, bee-friendly product Fungicide. However, they are not recommended on plants that will be used for food or medicine.

Harvest and Storage

When to Harvest/Number of days to Maturity:
If you are planting from seed, it will take 3 years for the plant to mature completely. From year 3, your bergamont will bloom beautifully every year (it does bloom from year 2, but the best blooms start in the 3 rd year). Collect leaves in spring or summer. The flowers can be picked when opened.

How to Harvest:
Cut the stem with pruning shears or a sharp knife a few inches from the ground. Hang upside down in an airy room where the temperature is between 65-70. Space the plants a few inches apart and provide ventilation via an open window or small circulating fan. Inspect the plants every few days to make sure they're drying. Allow 10 days to 2 weeks to fully dry. When the leaves can be crushed with your fingers, strip the leaves and store them in paper bags. Alternatively, you can dry individual leaves on baking racks or in a dehydrator.

Optimal Storage Temperature and Conditions:
The flowers and leaves are edible.
Bergamont can be added to stews, sauces, and roasts, used sparingly in salads, fruit drinks, lemonade, teas, or apple jelly . For the tea, infuse or simmer the leaves for 10 minutes in an enamel or glass saucepan. It is a very aromatic plant that is very pleasant and makes a lovely addition to any cut flower arrangement.

Seed Saving:

Seed heads begin to form after blooming. It will take them 6 weeks to mature. The tubular seed heads hold seeds. These can be harvested from dead blooms and planted or stored. Placing the flower heads in a paper bag shaking it vigorously . Use a screen or sieve to separate the chafe from the seed. Screened seed can be stored in plastic bags, small jars, or in an envelope when they are 100% dry.
Store in a cool, dark place. Seeds remain usable for 2 years.

Remember to harvest the seeds before you throw the blooms away. Try to harvest some seeds every year. That way you will have seeds if you want to plant more elsewhere in your yard.

Notes:
Although there have been no proven toxic reports with thymol (strong antiseptic) from the Monarda species some folks seem to have concern. One report had clarified it is absolutely safe for dogs and cats.

If you're growing your own monarda from seed you should purchase seeds of native varieties of monarda. Alternatively, you could purchase starter or full-grown plants from a nursery. Check with your local extension agent to see if native varieties are available in your area. Earl Grey tea is made with oils extracted from the rind of the bergamot orange, a citrus fruit, not the bergamot herb.

Borage

Photo by Rebecca McCarthy

Description: Borage is an annual herb in the flowering plant family Boraginaceae. The flowers are perfect with five narrow, triangular-pointed petals which are most often blue, although pink flowers are sometimes observed. White-flowered types are also cultivated. The blue flower is genetically dominant over the white flower. Usually, borage grows roughly 40 cm (16 in) wide, but if the soil is fertile, the plant can grow to 60 cm (24 in). The height may grow 1 to 2 ft. tall.

Traditionally, borage was cultivated for culinary, ornamental, and medicinal uses. Its other common names are: Starflower, Bee fodder, Bee-bread, Burrage, Common bugloss, Cool tankard, and Ox's tongue.

Growing Instructions

Optimal Time/Temperature for Germination: Borage can manage all climates except extremely cold ones. Hardiness zones are 2 to 11. Sow the seed in spring for summer flowering or sow in the autumn for spring flowering.

Optimal Soil Conditions: Select a sunny spot in the garden for at least 6 to 8 hours of sunlight. Borage will tolerate partial shade though. Borage likes most soil types provided they're well aerated, moist, and mulched. Its favorite soil type is sandy. The best soil pH for borage is between 4.0 to 8.5.

Borage self-sows readily and can spread rapidly. Cut back often or grow in containers where this presents a problem. It will grow well indoors in a container of quality, moist potting mixture.

Seed Planting Depth, Spacing and Procedure: Borage is best sown direct in the garden via seed. Bury about 3 to 4 seeds a half-inch deep into the soil when cultivating.

Thin out the Borage seedlings to leave 60cm (2 feet) between the plants. They don't transplant well once already established (If you do try transplanting, the tip cuttings from a mature borage plant can be placed in sandy soil in spring. Keep the soil damp and place cuttings in the garden when they have taken hold but before they're too established).

Best Companion Plants and Plants that Hinder: Borage, itself, is a good companion plant - especially with strawberries. It is said to protect or nurse legumes, spinach, brassicas. Other companions to borage are basil, pumpkin, zucchini, cabbage, corn, radish, squash, beans, peas, eggplant, marigold, and peppers. It is also said to be a good companion plant to tomatoes because it confuses the mother moths of tomato hornworms or manduca looking for a place to lay their eggs.Potatoes are carriers of blight disease.

Of all nightshade plants, potato is the only plant that poses an attack on the Borage herb. Avoid planting the two plants together.

Crop Maintenance

Moisture Requirements & Solutions: Keep watered regularly but don't over water. Water your plants after the previous waterings have dried up.

Weeding Needs & Solutions: You don't need to cut borage back in the spring. The only thing you have to do is remove weeds when the plant is still small.

Feeding Needs/Optimal Natural Fertilizers: Fertilize the soil with compost or manure frequently for a healthy borage Plant. Grow a living mulch with your herb to conserve moisture.

Pests, Diseases & Solutions: Borage is packed with minerals that are helpful to the soil, plants, and individuals. When decomposed it can serve as compost and a source of enrichment to the soil. It is even a natural pest repellent for plants.

Aphids and Japanese Beetles are drawn to borage plants and feed on their leaves. Aphids can be kept at bay with a strong spray of water from the hose, while the beetles can be easily handpicked off the plant and placed in a jar of soapy water to eliminate them.
Powdery mildew can occur in damp conditions or in areas of high humidity . To prevent the disease, make sure the plant has sufficient air circulation, plenty of sunlight, and that they are properly watered.

Harvest and Storage

When to Harvest/Number of days to Maturity: Expect maturity of the borage plant about 8 weeks after planting. The flowers appear at an early stage and can be picked during summer growth for use in culinary ways. When picking flowers, choose those that are open (some think that they are best picked before they open if you want to preserve their color).

How to Harvest: Simply pick off the leaves and flowers you need by hand or use garden scissors. They are best eaten fresh after harvesting, though you also can keep them in the refrigerator for a few days. The stems can be quite brittle; if they appear to be leaning oddly, stake them up.

Optimal Storage Temperature and Conditions: Basically, Borage leaves cannot be stored and must be used fresh when harvested. The young stalks are also edible so prepare them as you would celery or similar vegetables. Some ideas for use include: Placing the young leaves into salads cooked like spinach or dipped in batter as fritters. Use the leaves uncooked in salads and soups, as they have a cucumber flavor. Add sprigs to cider and fruit drinks. Freeze the flowers into ice cubes. Candy the flowers for cake decorations.

Seed Saving: Since this plant self-seeds readily, you won't need to plant it again (it is not invasive). The plant is also commercially cultivated for borage seed oil extracted from its seeds.

Notes:
Bees love borage flowers.
The flower has a sweet, honey-like taste and the plant has a cucumber-like taste.
Internal use of whole borage leaf is not recommended these days for caution to toxicity for people and pets. (please do research - no more than 10 mcg of unsaturated pyrrolizidine alkaloid consumption each day.)

Calendula

Photo by Rebecca McCarthy

Description:

Part of the Asteraceae family along with daisies and chrysanthemums. The common name is pot marigold.

Calendula and marigolds in fact belong to different plant families. Most areas where they are grown are treated as annual or biennial plants and it has a woody, earthy, bitter and slightly sweet taste but an aroma not favored as an indoor flower arrangements.

Originally grown for medicinal properties, calendula has become popular for culinary and as cheerful, bright yellow or orange flowers that follow the path of the sun throughout the day in the same way that sunflowers do.

Calendula is a great way to attract pollinators to your garden. It has much higher pollen levels than its cousin, the marigold, making it more attractive to bees and butterflies. But it will also attract beneficial insects like lacewing and hoverfly. The best of its herbal medicine is stored in the sticky green bracts so be sure to use the full head in herbal stocks, teas, bone broths and soups.

Growing Instructions

Optimal Time/Temperature for Germination: Calendula can survive light frosts and will usually continue to bloom until they are killed by heavy frost. Many times they will be the last of the annual flowers still blooming in late fall. Hardiness Zones are 2 to10.

Optimal Soil Conditions: Sandy loam with soil pH between 5.5 and 7.0. Calendulas do not require any special soil. They can be grown anywhere you're growing other flowers, herbs, or vegetables as long as the flower bed doesn't become waterlogged after heavy rain.

Seed Planting Depth, Spacing and Procedure: Plant seeds about 1/4 to 1/2 inch (.64 to 1.27 cm) deep and 4 to 6 (10.16 to 15.24 cm) apart. Cover them lightly with about 1/4 inch (.64 cm) of garden soil. Water the seedbed immediately after planting being careful not to wash the seeds out of their spots. Then mist the bed daily to keep it moist for the next 7 to 14 days until the seeds germinate.
When the calendula seedlings are about 3 inches (7.62 cm) high, thin them so that the remaining plants are 8 to 12 inches (20.32 to 30.48 cm) apart.

Best Companion Plants and Plants that Hinder: Companions are cucumber, tomato, peas, carrot, asparagus, radish, parley, and thyme. The most hindering would be sage and potato.

Crop Maintenance

Cut blossoms as they fade to encourage the plants to produce additional blooms.

If calendulas are too long stemmed and lying down on the soil, you can simply use a string to tie the stems together with a central support.

Moisture Requirements & Solutions:
Water the plants as needed to keep the soil moist, but be careful not to overwater**.** The soil should not be soaking wet. Water it once a week if the plant is in open ground. In a pot, you have to water it more often due to evaporation.

Weeding Needs & Solutions: Add mulch around your calendula for a neater appearance, to retain moisture, and to minimize weeds.

Feeding Needs/ Optimal Natural Fertilizers: They should not require any additional fertilizer because the compost should provide enough nutrients to help the plants continue blooming for the remainder of the growing season.

Pests, Diseases & Solutions: The biggest challenge in growing calendula is that they are prone to insects and plant disease. Aphids are the most common insect problem, however, they can be easily treated with a horticultural soap. The most common disease affecting calendula is mildew, which occurs most commonly under hot, humid or rainy weather conditions. Mildew can be treated with a natural fungicide so the plant can keep feeding you the blossoms in salads and such.

Harvest and Storage

When to Harvest/Number of days to Maturity: try to keep up with picking the flowers throughout the first half of the summer. As summer gives way to fall, let more of the heads go to seed to collect them and allow them to reseed.

How to Harvest: The easiest way to pick your calendula is by placing your index and middle finger on either side of the stem, right at the base of the bract (green sticky base of the flower). Then, just pull as the flower head will pop off from the rest of the plant. If some of the stem comes, that's just fine too, discard it because it's easiest to use and dry without the stem.

Optimal Storage Temperature and Conditions: To dry your calendula blossoms, give them a little dust off to let the little buggies escape. Then, set them upside down on a mesh rack or woven basket to air dry or pop them in the dehydrator on super low for a few hours to help jump start the process to avoid mildew in damp air regions. Store your dried flower blossoms in an air- tight container or glass jar.

Fresh or cooked, there are so many different varieties and petal arrangements you can't get bored with it. Add them into salads, pastas, drinks, sprinkles to garnish pastries, or add to goat and cream cheeses. Just be sure to pull them from the sticky bract (the green part at the base of the flower).

Seed Saving: You can use the dead-headed seeds to reproduce plants. Take the seed head off and allow to dry out in a dish, then store in an envelope ready for planting in the spring. Select a place in your garden for calendula where they can grow undisturbed for many years since they drop their seeds and will reseed your flowerbed year after year.

Notes: To transplant calendula from overwintered plants, choose a sunny well-drained place. Then plant 8 calendula per square meter (10 square feet) and give a lot of water to favor the growth.

Chickens love to peck at the flower heads and the petals.

Calendula can be used as a trap crop for aphids. Because of the sticky sap that it excretes, aphids love it while the neighbor plants next to it are untouched.

Caraway

Description: Caraway is a herbaceous biennial plant in the family Apiaceae. It has finely divided, feathery leaves with thread-like divisions that grow on 8 to 12 in. (20–30 cm) stems. The main flower stem is 16 to 24 in. (40–60 cm) tall, with small white or pink flowers in umbels. Caraway fruits, called seeds, are 1/16 in.(2 mm) long with a crescent shape and five pale ridges.

The first season it forms a rosette of leaves 8-10 inches tall that resembles a carrot with a long tap root. The second season the plant grows to 2-3 feet tall and produces a large, flat-topped flower head with white flowers. Caraway seed flavor is Anise-like, earthy and peppery.

Growing Instructions

Optimal Time/Temperature for Germination: Caraway may be direct sown in either Spring or Autumn in prepared soil or started inside in peat pots to prevent transplant shock. Mulch plants in the winter if the soil freezes in your area. Expect germination in 4-14 days. Hardiness Zones are 4 to 9.

Optimal Soil Conditions: Caraway prefers sunny and warm temperate climates and well drained moderately moist soil. It thrives with a pH of 6.5 to 7.0.

Seed Planting Depth, Spacing and Procedure: Sow the seeds 1/2-inch (1 cm.) deep in fall or spring. Once seed germinates, thin the caraway plant to 8 to 12 inches (20-31 cm.) apart. In colder climates,

Best Companion Plants and Plants that Hinder: Companion planting caraway with strawberries will enhance your strawberry crop. Companion planting caraway with fennel or dill should certainly be avoided.

Crop Maintenance

Moisture Requirements & Solutions: Very little cultivation is required in caraway growing, but adequate moisture is an important component in the first year. The foliage of caraway plants need to be kept dry during irrigation, so a drip hose is an excellent way to keep the soil moisture level up.

Weeding Needs & Solutions: Germination is slow and sporadic when growing caraway seeds, and the herb may be inter cropped to help prevent weeds and manage soil conditions.

Feeding Needs/ Optimal Natural Fertilizers: Mulch the roots of the plant heavily with straw or organic mulch, which will add nutrients to the soil. Cut the plant back in the fall as it will die back and re-sprout in spring.

Pests, Diseases & Solutions: Caraway has few pests or disease problems. Plant a second crop a year after the first for consistent production.

Caraway will attract parasitic wasps and hover flies and will help protect other plants from agricultural pests.

Harvest and Storage

When to Harvest/Number of days to Maturity: Since the plant is biennial, harvest leaves when young in the first year of growth for use in salads and soups. Harvest seed heads about a month after blossoming in the second year. The roots may also be dug the second year and used as a root vegetable.

How to Harvest: Shake the heads into a paper bag and separate the debris.

Optimal Storage Temperature and Conditions: Place in a jar in a cool, dark location.

Before storing, make sure seeds are thoroughly dry. You can store whole caraway in the refrigerator if you really want to prolong its shelf-life.

Although the whole seed is frequently used, sometimes you'll want to impart caraway's distinctive flavor without the crunch of the whole seed. In this case, ground caraway can be used. The ground version is more potent, so if a recipe calls for one teaspoon of whole caraway, you would substitute a scant 3/4 teaspoon of the ground version.

Notes:

Often seeds are used in sauerkraut, rye bread, slaws, cheese, potato, apples, pork, sausage, cakes, cookies, soups, omelets, rice, and pasta dishes. Caraway seeds were customarily chewed to freshen breath and the essential oil extracted from caraway is used in mouthwashes, toothpastes, and chewing gums.

Cardamom

Description: Cardamom is one of the most expensive and unique spices in the world. If you live in a very warm, humid climate (or in US Department of Agriculture zones 10 to 12), you can grow your own cardamom plant. Plants grow 6-10 feet tall (1.8-3.0 m)

Growing Instructions

Optimal Time/Temperature for Germination: Buy the seeds from local gardening supply stores or from online agricultural supply. These seeds will be free from disease and are more likely to thrive.

Optimal Soil Conditions:

The ideal soil for cardamom is loamy with a pH level between 4.5 and 7. The soil should be slightly sandy so it drains gradually. You can purchase loamy soil from most garden centers. If you're planning on transplanting the seedlings to your outside garden, Choose a space in the garden with well-draining soil.

Pay attention to the soil after a heavy rain to see how it drains. You shouldn't see deep puddles remaining, but the soil should stay moist. If the soil is too rich in clay, it will kill the cardamom plant, so find somewhere else in the garden or mix sand into the soil to break up the clay.

If you're going to leave the seeds in the container and grow the plants to maturity, use a pot that's at least 1 foot (0.30 m) deep and 6 inches (15 cm) wide.

Plant a few cardamom seeds indoors and let them grow for a few months so they sprout above the soil. Transplant the seedlings to a shady place in your yard. It will take several years of watering and nurturing, but your plants will produce cardamom that you can harvest and use in baking or cooking.

Catnip

Description: it's a member of the mint family, it's easy to grow, is a herbaceous perennial and thrives in a wide range of North America. The Nepeta cataria plant, more commonly known as catnip, belongs to the Lamiaceae plant family. It's famous for its euphoric effect on cats and medicinal uses for people. It is a bushy, branching herb that grows to 20 to 39 in. (50 to 100cm tall. Like many mints, its stems are square in cross section, and its leaves have a soft texture, being covered by minute hairs.

Growing Instructions

Optimal Time/Temperature for Germination: Catnip seeds can be sown outdoors only during the spring. If you're planting seeds directly into your outdoor garden, sow them as soon as any threat of frost has passed. Water them well during their germination period, which lasts up to ten days. You should begin to see sprouts after this period. Growing zones 3 to 9.

Optimal Soil Conditions: Catnip prefers full sun in most locations. If you live in a hot, dry climate, consider an area where plants will have some shade from the afternoon sun. It will still need at least six hours of full sun, but in locations in the south, the sun at its highest and hottest could damage leaves. Catnip grows best outdoors, but can be grown indoors if you place it by a window that gets at least six hours of full sun per day. If growing a plant indoors, you should place it no more than three feet away from the sunlit window. Alternatively, you can grow it indoors away from a sunlit window if you have access to high output fluorescent plant grow lights.

Once established, catnip can grow aggressively in a wide pH range between 6.1 (mildly acidic) and 7.8 (mildly alkaline). To keep it from invading your yard, grow it in a controlled garden, such as one with permanent stone dividers. If you don't have a controlled space, using containers offers total control of where and how your catnip plants grow. Use standard potting soil if you're container planting, or whatever soil you have in your garden. Soil should allow draining, so it shouldn't be too rich or compacted.

Seed Planting Depth, Spacing and Procedure: Bury seeds 1/8 of an inch (3.2 mm) beneath the soil and space them at least 15 inches (38.1 cm) apart. Give seedlings or young plants ample room to grow, leaving about 18 to 20 inches (45.7 to 50.8 cm) between each plant to prevent crowding. They might look thin when you first plant them, but they will need the room to grow and will soon fill out the space. Catnip will grow in just about any soil, but sandier soil tends to yield more aromatic plants.

Best Companion Plants and Plants that Hinder: Catnip makes a great companion plant for roses, asparagus, some tomatoes, chives, onions, or carrots. (It is widely reported however that any mints, catnip included should never be grown near parsley.) Also grow with potatoes, pumpkins, or other squashes to keep squash beetles at bay. Plant with anise, yarrow, and hyssop and see how the pollinators rush to your garden.

Crop Maintenance After your plant's first flower blooms finish, remove the spent flowers. Shear back the plants by one-third to promote new growth and a new bloom of flowers. Remove any dead or dried leaves regularly. Shearing and deadheading plants will result in bushier plants that flower more consistently.

Moisture Requirements & Solutions: Water frequently after first planting. After a couple weeks, or after you see that the plants have adjusted to transplanting and are starting to grow, water only when the soil has dried out a few inches below the surface. Catnip plants like drier soil, and root rot can set in if the soil is too moist. When you water, thoroughly soak the soil to saturate the roots. Let the soil dry out completely, and test it out by touching a finger to it before watering. If the soil feels moist or wet, don't water the plant and check it later that day or the next day. Catnip plants are fairly hardy and quite drought-resistant, so you should be more concerned about over-watering than not watering them enough.

Weeding Needs & Solutions: Hoe or pull weeds when they're small; weeds are a host for many catnip plant pests. If allowed to grow unchecked, the bed becomes overcrowded and stagnant.

Feeding Needs/ Optimal Natural Fertilizers: As a general rule, they benefit from a light feeding when the plants are small.

Pests, Diseases & Solutions: The plants are generally trouble-free, and when it comes to catnip, pest problems generally aren't much of a problem. Spider mites are difficult to spot, but if you look closely, you may notice telltale webbing and tiny, black spots moving around the leaves. Leaves infested by spider mites are dry and take on a stippled, yellow appearance. / Flea beetles are small beetles that jump when disturbed. The pests, which may be brown, black, or bronze, damage catnip by chewing holes in the leaves. / Thrips, which may be black, brown, or gold, are tiny, narrow insects that suck the sweet juices from catnip plant leaves. As they feed, they leave silvery specks or streaks, and can significantly weaken a plant if left untreated.
/ Whiteflies are tiny, sucking insects, generally found in huge numbers on the undersides of leaves. When disturbed, these catnip plant pests fly out in a cloud. (like aphids, whiteflies suck the juices from the plant and leave honeydew, a sticky substance that may attract black mold.)

Soap sprays are effective against most catnip pest problems, and if used correctly, the spray poses a very low risk for bees, ladybugs, and other beneficial insects. Don't spray if you notice friendly insects on the leaves. Don't spray on hot days or when the sun is directly on the foliage.

Harvest and Storage

When to Harvest/Number of days to Maturity: During summer and autumn cut just the joints where a leaf or leaves sprout from the stem. Cutting it just above a leaf joint will promote more rapid new growth.

How to Harvest: For last harvesting of the year you can cut off the whole plant at the base since it dies down for winter only to return in spring.

Optimal Storage Temperature and Conditions: Let your leaves sit out on a paper towel beneath a sunlit windowsill for two or three days. For whole plants, hang them upside down in a cool location for a few weeks. Do your best to keep your cat away from your drying leaves. Consider a room with a closed door to keep the cat from jumping up and getting into the leaves. Once they've dried, place them in an airtight container for storage.

Seed Saving: You can propagate, or make new plants, by dividing one plant's root system. Dig up a cluster of plants with at least two to three stalks, or remove them from their pot if you used a container. Soak the root ball to the point of complete saturation. Use a clean trowel or garden knife to divide the root cluster in half, then replant each new plant. Continue to water frequently after you've divided the plants. Don't let the root system dry out as you would with a normal catnip plant. Dividing plants can help control overgrowth, renew fading plants, or simply allow you to share a plant with a friend.

Notes:

Once you've air dried your leaves, take one to two teaspoons of dried catnip and place it in cheese cloth or any tea dispenser you might have on hand. Steep it in one cup of boiling water for ten minutes, then enjoy your tea.

Cats can eat it fresh. Breaking the leaves up will release the aroma.

Consider using garden fencing, bracing, or bamboo sticks to support the plants and prevent your cat from laying on them.

The cats it may attract would be a deterrent to rabbits and other animals that may otherwise eat your vegetables.

Chamomile

Description: Chamomile is an herb that grows little daisy-like flowers. These flowers can be dried and used to make relaxing and medicinal herbal teas, as well as hot compresses and infused oils. It's not hard to grow this lovely and useful little herb in your garden. You can start seeds indoors or outdoors. You'll then need to nurture your chamomile plantings until the flowers are ready for harvest.

Growing Instructions

Optimal Time/Temperature for Germination: Roman chamomile does better in higher-quality soil. This variety is a perennial, meaning it doesn't need to be replanted each year. It's best to start your seeds about six weeks before the last frost hits. For many regions, this will be in mid- February or early March. Adjust the timing with hardiness zones 3 to 9. While chamomile can handle a little bit of shade, it prefers lots of sun. Set aside a spot in your garden that's sure to enjoy plenty of light throughout the day. Remove any rocks, clumps of soil, or weeds by raking and hoeing the area. Go at least 1 foot (30.48 cm) deep. Then rake the soil back into place and pack it down for a nice, smooth planting surface. You should be safe to plant by mid-May or June with no threat of frost. Warmer southern states may be able to start earlier.
Chamomile likes soil with a pH between 5.6 to 7.5. It shouldn't be too rich, nor should it be dense, clay-like soil—the roots won't be able to establish themselves.

Optimal Soil Conditions: If going by the starter container method, fill each container about ¾ full with soil in a partitioned tray. Add enough water to make the soil moist. Pour chamomile seeds into an empty bowl. Use your finger to pick up several. Put about six in each container by scraping the seeds off your finger with your nail. Cover them lightly with just a little bit of soil as these seeds need light to germinate. You should still be able to see the seeds through their covering. Mist the seeds with water from a spray bottle right away. Continue checking on the seeds each day to make sure the soil stays moist, but not soaking. Spray the seeds as much as you need to keep the soil moist, probably about once per day.

You can keep the seeds covered with a loose sheet of plastic wrap if you're concerned that the soil isn't staying moist enough. The plastic will trap the moisture. Leave space for air circulation, and be sure to remove the plastic entirely as soon as you see any sign of green. Ideal growing temperature is between 65-85°F (18.33-29.44°C). During the day, put the plants in a sunny spot that's set at the higher temperature. At night, make it a little colder. This will imitate the natural warm and cold cycles of the outdoors.

Seed Planting Depth, Spacing and Procedure: Remove one seedling when plants are 2 in. (5.08 cm) high. This will leave only one healthy seedling in each container. To thin the chamomile seedlings, cut the seedling off at ground level. Don't pull the seedling out by its roots, as you may disturb the roots of the chamomile plant you're keeping.

Do what's called "hardening off" the chamomile. This prepares them for life outside. Start by putting the plants outside in a covered area for a few hours per day. Increase their outdoor exposure by a few hours each day for two weeks. Do this only when the weather cooperates. If the temperature drops or rises suddenly or there are strong winds, keep the plants inside to protect them. Gentle breezes, however, are good for the little guys.

Alter the plants' sun exposure as you go, giving them less and less shade over the course of the two weeks. Be sure to keep the soil moist during this time. Keep the plants indoors at night while hardening them off.
While transplanting, gently loosen the soil and remove the plantings from their containers, placing them in holes double the size of their root balls about 8-10 inches (20.32-25.40 cm) apart. Fill the holes back in with a mix of soil. Water the plantings about an hour before you transplant them. Then gently mist them once they're in the ground. Make the holes deep enough so the base of the leaves is at soil level.
While perennial plants can be put in any time of year, they do best when started in early autumn or late spring. Annuals should always be planted during these times.

Best Companion Plants and Plants that Hinder: Chamomile can help other plants by preventing fungal infections, aiding in seed germination, preventing pests, acting as a natural deterrent in your garden, and enhancing other foods flavors. Farmers have long used chamomile as a companion plant to apple, peach, and other fruit trees. Vegetable companions include: Cabbage, Onions, Beans, Bok Choy, Celery, Cucumbers, Broccoli, Garlic, Kale, Brussels sprouts, Cauliflower, Kohlrabi, Basil. Roses, Snapdragons, and Zinnias complement Chamomile.

There are a couple of crops that you should not plant near it: Carrots, Mint, Parsley, and Parsnips (attract similar pests that can harm not only themselves but also chamomile).

Crop Maintenance Chamomile plants can survive outside during winter, but they need a little bit of protection from dry, harsh winds. Lay several evergreen boughs over the plants at the start of the cold season.

Moisture Requirements & Solutions: Until you see flowers on your plants, water them daily. This will give them the water they need to fully mature. Don't soak the soil. Water until it's just moist. If you're getting lots of rain, you may be able to reduce your watering. Especially if it's hot out, however, check the soil even if it's rainy. Chamomile is a pretty hardy plant. Once it's fully grown, it does fine with less water. Let the soil go almost dry between waterings, then soak the plants. This usually takes about a week or two.

Weeding Needs & Solutions: Make sure the chamomile garden stays free of weeds. You don't want them to choke off your chamomile. Give the garden a weekly once-over to remove them.

Feeding Needs/ Optimal Natural Fertilizers: Compost can be applied as a "top-dressing". This means that a 1"-2" layer of compost is placed on the soil around the plant as a nutrient-rich organic mulch. Top-dressing perennial herbs with compost is generally done in early spring and early fall. Annual herbs can be top-dressed with compost after they are planted.

Pests, Diseases & Solutions: While chamomile may attract bees and butterflies, it's usually pest free beyond that. To prevent a fungal infection in saplings, spray a weak chamomile tea over them a few times a week. Spray them in the morning so that they can dry in the sun. Fungal infections are a common issue for saplings. To use chamomile tea as an insecticide, make a triple strength tea by using more tea bags and allowing your tea to steep for 24 hours. You can then spray your chamomile tea onto your plants to prevent pests. If you spray chamomile tea onto your plants, it will act as a natural deterrent because of its strong scent.

Harvest and Storage

When to Harvest/Number of days to Maturity: It usually takes about two months from the time the seeds are planted for chamomile to produce flowers. This should occur by early to mid- summer, or about two weeks after you're transplanted indoor seedlings.

How to Harvest: our plants should continue blooming all summer long. As you snip off blooms with garden scissors, new ones should grow in their place. This will give you plenty of flowers to dry and enjoy all year round. Snip the flowers at the base of their individual stems. You can then trim the stems down to the base of the blooms for drying.

Optimal Storage Temperature and Conditions: Place the flowers on a plate and put them in a cabinet. This will allow them to dry fully. Wait until the plant crumbles easily to your touch, usually about 1-2 weeks later. Keep the dried flowers safe from moisture and sunlight, which could make them go bad. Mason jars work perfectly, and they'll store easily in your pantry next to the tea.

Seed Saving: German chamomile is a bit hardier than other varieties. It can handle a bit of clay or low nutrition in the soil. German chamomile is technically an annual, which means it needs to be replanted each year. However, it self-seeds, so you don't need to do the replanting! This means it actually acts like a perennial plant.

Roman chamomile, a perennial plant, can be grown from cuttings. German chamomile, an annual, is not a good candidate for cuttings.

Notes:

You can make tea with fresh flowers as well, although dried blooms work better. Double the amount you use. Add some honey to make this bitter-tasting tea sweeter.

To aid in seed germination, soak the seeds in a weak chamomile tea for 8 to 12 hours before you plant them.

Just remember when planting chamomile with any of the vegetables from the Brassica family that you keep other members of the Brassica family separated from each other as they can attract too many of the same pests to cause issues with your harvest.

One easier way to control the growth and spread is to grow your chamomile in a container and place that near your lettuce crop.

Chia

Description: It is an edible seed also rich in nutrients that comes from the desert plant Salvia hispanica, a species of flowering plant in the mint family (Lamiaceae). Chia seeds are an unprocessed, whole-grain food. The plant has a height of 3 to 5 feet with a wide width of several feet. There are abundant upright spikes of blooms at the end of the stems with blue or white colors.

Growing Instructions

Optimal Time/Temperature for Germination: If you stick to the right conditions, they can be grown in hardiness zones 8 to 12 and will not be mostly affected by frost. Frost can kill immature plants and may prevent flowering on mature plants but If you don't live in these zones, you can still plant chia as an annual. In zones 8, 12 and 13, chia is a good choice. In Ontario, chia can't be produced under growing conditions because it requires a shortday photo period for flowering. These plants need warm temperatures to begin growth. Chia seeds germinate in 3 to 14 days by keeping warm with bright light and adequate moisture (you can cover the seed tray with a plastic cover).

Optimal Soil Conditions: In Chia's opinion, a location with full sun and sandy or loamy, well-drained soil is ideal. Perhaps aim for a pH of 6.0 to 8.5. They're desert plants, so they can't stand wet feet.

Chia plants can grow quite large even though they are tiny seeds and will do their best in a garden bed than pots since they require quite a bit of space comparable to a bush or small tree.

Seed Planting Depth, Spacing and Procedure: You can plant chia as an annual or perennial. As an annual, plant seedlings, or sow the seeds 12 inches apart. As a perennial, space about 18 inches apart. This is to allow the chia to spread out. Let one or two bolt and drop their seed so they regrow next season. Plant in autumn and barely covert hem with soil. If you do use a large container, 20 gallons is sufficient. This way, you can still get a nice seed harvest.

Best Companion Plants: Plant chia with: sage, mint, thyme, parsley, cilantro but because of their height, plant with herbs that won't compete with height.

Crop Maintenance

There is no need to prune chia. If any flowers die before it's time to harvest the seeds, remove the dead flower to encourage the growth of new flowers.

Moisture Requirements & Solutions: Water your chia each day when the plant is very young. Once it becomes established, water the mature plant only when there isn't a lot of rain. Chia is reasonably drought tolerant and accepts intermittent watering. Chia plants should not be watered excessively.

Weeding Needs & Solutions: **W**ays to prevent fusarium wilt include: remove all weeds, remove all debris from the chia plants, use certified seeds, and clean all gardening equipment. (another standard is to rake your chia plants each autumn.)

Feeding Needs/ Optimal Natural Fertilizers: Before planting chia, dig well-rotted manure into the soil a week or two before planting. Once the chia takes off, you don't need to refertilize. (deficiency of nitrogen will negatively impact flower formation and seed yield.)

Pests, Diseases & Solutions: Natural compounds in the leaves of chia plants prevent most bugs. They are easy to grow organically. In some cases, you may find the plant happy and healthy even when other plants have succumbed to rampant disease. Still, the following may impact chia plants.

Fusarium wilt- a serious fungus that affects many plants. If your plants contract it, it withers and eventually dies. Try neem oil spraying because you will be eating the seeds or making tea so no chemical residue is a concern. Neem oil has been shown to inhibit fusarium wilt, so use it as a preventative spray.

Cucumber mosaic virus- this devastating virus is one of the most common plant viruses in the world. Leaves become mottled or blistered with white, green, or yellow blisters. The leaves curl up and become crinkled. The chia plant will be stunted in growth. Unfortunately, if your plant gets it, you must remove it and either burn or bag up the plant material. Prevention is essential. Use neem oil as a preventative spray. It is often spread by aphids, so if you control aphids, you prevent many other plant problems.

Harvest and Storage

When to Harvest/Number of days to Maturity: The plant will flower after about 12 weeks of growth. Sometimes achieving flowering can be a challenge, but that's generally due to insufficient temperature. Plants do best when it's above 85°F.

How to Harvest: Timing is key. If you don't harvest in time, the chia plant will self- seed and drop your harvest. As soon as the petals have mostly fallen off the flower, snip the flower heads off.

Chia seeds are always sold raw, and you can plant the same ones you'd use in the kitchen. Thin out the chia sprouts after they are a few inches tall, leaving about 12-18 inches of spacing on each side.

Optimal Storage Temperature and Conditions: You can keep them in the pantry for a year on average and 3 years in the refrigerator.

If you don't want to plant the seeds in the garden, but still want the health benefits of chia, use the sprouts as microgreens. The seeds will germinate quickly. Snip off when they reach a few inches tall. Put a seed raising mix in a shallow, wide container. Sprinkle chia seeds over the surface and water. Don't worry about burying them.

Seed Saving:

Don't hang chia flowers to dry or you'll get up in the morning to find all the seeds have fallen on the floor. Instead, put them in paper bags to dry.

When the flowers are dry, carefully remove and place on a flat, clean and dry table. Simply crush and roll with the palm of your hand and the seeds will easily come out. Brush into a sieve and move the seeds around to push through small dust. Remove any plant bits you don't want. Get the kids involved. Chia seed harvesting is easy and fun for children. Store the seeds in glass containers.

Notes:

You may have seen white and black chia seeds in the store. Those seeds don't come from different varieties, they're from the same plant, Salvia Hispanica. However, if you plant white seeds, you're more likely to get a plant with more white seeds. Black chia seeds have slightly more protein, but the difference is small.

If you see brown seeds, they're either immature or not chia seeds at all.

Seed varieties come in winter and summer types. They grow the same way, but need different handling. Sow winter chia in the fall for an early summer harvest. Summer chia don't like cool spring temperatures. Sow in late spring for a late summer or fall harvest.

Soak the seeds in your health drink. They don't take long to soften and swell. Add them to smoothies and milkshakes. Chia seeds are very versatile so sprinkle them on everything from porridge to salads. Add chia seeds to homemade bread and savory muffins. Chew them as a snack. Use the leaves as tea.

Chia seeds can absorb as much as 12 times their weight. When they get wet, they swell in size and take on a gelatinous texture (slimy). Think tapioca but less flavorful.

Cilantro

Description: an herb from the fresh leaves of the coriander plant. In the family of Apiaceae. Cilantro has delicate, lacy green leaves, resembling flat leaf parsley. It has a pungent, complex, citrusy flavor. Cilantro is a good choice for a butterfly garden, as the plant is a butterfly favorite, especially during the morning and evening. Cilantro is an annual plant, meaning it doesn't "come back" from the same seeds every year. But it does reseed itself if you let it, which makes your job as a gardener a lot easier! Just wait for it to flower and let it drop the seeds to the ground. Leave those seeds alone and they'll grow into new plants for you next year. This only works if you have a dedicated bed for your cilantro (or if you're growing it indoors in a container). If you're growing your cilantro in a larger garden alongside other herbs and vegetables, it's probably better to seed it yourself each year.

Growing Instructions

Optimal Time/Temperature for Germination:

The best time to plant cilantro depends on where you live. Cilantro won't survive in frosty conditions, but it doesn't like extreme heat either. In temperate climates, the best time to start planting cilantro is in late spring, between the months of March and May (Northern Hemisphere). You may also have success by planting cilantro late in the summer and allowing it to grow into the fall. If the weather becomes too hot, the cilantro plants will start to bolt - which means they will flower and go to seed, so choose
your time of year wisely. It can handle temperatures ranging even to the low/mid 20s

Fahrenheit. Try starting your seeds indoors and then transfer them outside as the weather improves. It's growing zone range is 2 to 11.

Optimal Soil Conditions:

Select a patch of soil where the cilantro will get full exposure to the sun. It will tolerate some shade in southerly areas where the sun gets very hot during the day but Cilantro needs full sun, about 6-10 hours a day. The soil should be light and well-drained with a pH of 6.2 to 6.8. If you wish to cultivate the soil before planting, use a shovel, rototiller or spade to work 2 to 3 inches (5.1 to 7.6 cm) of an organic mulch such as compost, rotten leaves or manure into the top layer of soil. If you are using manure, make sure the manure is composted or aged for at least 3 months so it doesn't burn the young plants. Rake the area smooth before planting.

Seed Planting Depth, Spacing and Procedure: Sow the seeds about 1/4 inch (0.6 cm) deep, spaced 6 to 8 inches (15.2 to 20.3 cm) apart, in rows approximately 1 foot (0.3 m) apart. Cilantro seeds need plenty of moisture to germinate, so make sure to water them frequently. They need about an inch of water per week. They should germinate in about 2 to 3 weeks. As cilantro grows so quickly, you should plant a new batch of seeds every 2 to 3 weeks to ensure that you have a fresh supply of cilantro throughout the growing season.

Best Companion Plants and Plants that Hinder: Cilantro is a great companion to plant alongside dill, potatoes, tomatoes, peppers, and sweet alyssum. Garden herbs like rosemary, thyme, and lavender are not natural growing partners for cilantro.

Crop Maintenance

Stop the cilantro plants from becoming overcrowded by thinning the seedlings when the cilantro is 2 to 3 inches (5.1 to 7.6 cm) tall. Pull out the smaller plants and leave the strongest ones to grow larger, allowing 8 to 10 inches (20.3 to 25.4 cm) between each plant. The smaller plants can be eaten.

Moisture Requirements & Solutions: Once the plants have established themselves, they do not need as much water. You should aim to keep the soil damp, but not soggy, as cilantro is a dry climate herb.

Weeding Needs & Solutions: You can also prevent weeds from growing by spreading some mulch around the base of the plants as soon as they are visible above the soil.

Feeding Needs/ Optimal Natural Fertilizers: Once the seedlings have reached about 2 inches (5.1 cm) in height, you can fertilize them with compost or organic fertilizer. Be careful not to over-fertilize, you only need about 1/4 of a cup for every 25 feet (7.6 m) of growing space.

Pests, Diseases & Solutions: Cilantro is very susceptible to powdery mildew, so it is important to not wet the foliage. During rainy season, bring it indoors.

Harvest and Storage

When to Harvest/Number of days to Maturity: You can start to harvest cilantro leaves pretty early before the plant is full-grown. Leaves are typically ready between 45 and 70 days after seeding. Harvest cilantro by cutting off individual leaves and stems from the base of the plant, near ground level, when the stems are 4 to 6 inches (10.2 to 15.2 cm) tall.

If you would also like to harvest coriander seeds from the plant you should leave it to flower. Once the flower dries, you will be able to harvest coriander seeds that can be used in cooking.

How to Harvest:
Don't cut off more than one-third of the leaves at one time, as this can weaken the plant. Once you have harvested the leaves, the plant will continue to grow for at least two or three more cycles. Sooner or later the `coriander' plants will start to flower. When this happens, the plant will stop producing fresh, new shoots with edible leaves. At this point, some people cut off the flowers in the hopes that the plant will produce more leaves.
You can allow the seeds to naturally fall to the ground where the cilantro plant will self-sow, providing you with more cilantro plants the following growing season.

Optimal Storage Temperature and Conditions:

The drying method only uses the cilantro leaves but gives a longer-term storage. Place your cilantro in a colander and rinse it off and wrap the
cilantro with a towel and gently roll it to catch any excess water. a) hang the cilantro in small bundles upside down in a dry area until they are dried out. b) 20 mins. In oven 250 °F (121 °C) The heat of the oven dries out the leaves and preserves them. Monitor the leaves while they dry. They should only lose their fresh green color. They shouldn't burn or turn brown. If this starts happening, either take them out or lower the temperature of the oven. c) Dehydrator. (Make sure you close the windows and turn off the fan for this step. A sudden gust of wind could blow all your cilantro to the floor.) After cooling, place in an airtight jar to store in a cool, dark cupboard for up to a year or more.

With a glass of water and a plastic bag, you can keep fresh cilantro ready to use in your fridge for about two weeks. Use a paper towel and gently pat it dry. Don't rub or you could tear the leaves. Even if the cilantro looks dirty, don't wash it now. Store it and save the washing for right before you use it. Lay it flat on a cutting board. Using a sharp kitchen knife or scissors, cut away the bottom portion of the stem. This exposes the fresh part of the stem and lets it absorb water while it's stored. Work quickly after cutting. The stem edge starts drying out immediately after cutting, so don't leave it out to dry. The cilantro doesn't have to be submerged, only the ends of the stalks need to be in the water. 2–3 inches (5.1–7.6 cm) of water. Rinse out the jar first to make sure there are no contaminants. Place the herbs in gently and make sure the leaves are facing up and the stems are covered by the water. Place a clean plastic baggie loosely over the jar. Make sure the bag covers the cilantro leaves and the mouth of the jar. This keeps air from drying out the cilantro. You could use a rubber band or strip of tape to keep the bag in place. Make sure the bag is loose. Don't push the leaves down. Make sure you can see the cilantro when you place it in the refrigerator to monitor its freshness. Change the water when it starts to discolor. Your cilantro requires fresh water, so replace the water in the jar every few days. When the cilantro's leaves darken and turn a dark green, it's going bad. Brown leaves indicate the cilantro is dead. Spoiled cilantro emits a pungent smell. If you discover an unpleasant smell, dispose of the cilantro.

To freeze for several months, place your cilantro in a colander and hold it under the sink. Run the water while shaking the colander so the water reaches all of the cilantro. Then turn the water off and let the cilantro drip dry for a few minutes. You can freeze whole stalks if you want, but then it would be harder to measure out when you want to use cilantro. Plan ahead by slicing the leaves off the cilantro stalk. Use a sharp knife or pair of kitchen scissors to avoid tearing the cilantro. Gently cut away the leaves and dispose of the stalks. This way, you can go into the freezer and take only a small amount when you need it. Place a layer of freezer paper down first so the leaves don't stick to the tray. Lay the cilantro out in a single layer on the baking sheet. Make sure the leaves don't touch teach other or they'll stick together. Wax or parchment paper will also work if you don't have freezer paper. Use more than one sheet if you have a lot of cilantro. Don't pile it up on one sheet. Place the sheet in the freezer for 30 minutes then take the baking tray out of the freezer and immediately to transfer the cilantro into a freezer bag. Don't let the cilantro start defrosting or it will all stick together when it refreezes. Squeeze all the air out of the bag before sealing it. You can stay organized by marking each freezer bag with the name of the herb, the date you froze it. When you take the cilantro out fort use, don't thaw since that will make it soggy.

Another choice is to dice it up including the stems as well to do the ice cube method (can chop with a food processor). Fill the spaces gently with water to ensure all the cilantro is encased in ice.

Seed Saving: save the dried seeds and plant them the next growing season. Cilantro seeds should last two years. (If germination doesn't occur in 7 to 14 days, you'll know it wasn't viable.)

If it's coriander seeds you're after, wait until about 3 months after planting and remove the brown, fruiting part of the plant. Allow it to dry, then collect the seeds, grind them up into a spice and store them in a dry, tightly sealed container. Can even try roasted seeds (Folks in Thailand uses the roots).

Notes:

Another growing method is choose a flower pot or container that's at least 18 inches (45.7 cm) wide and 8 to 10 inches (20.3 to 25.4 cm) deep. Cilantro does not take kindly to being moved, so the pot needs to be big enough to contain the full grown plant.
Fill the container with some fast-draining soil. Moisten the soil with a little water until it's just damp, not soggy. Sprinkle the seeds lightly over the soil to disperse evenly. Cover with another $^{1}/_{4}$ inch (0.6 cm) of soil. Cilantro needs full sun to grow, so place it in a south-facing window. The seeds should germinate within 7 to 10 days. Keep the soil moist using a spray bottle to lightly mist the soil. If you pour water onto the soil, it might displace the seeds. You may be able to harvest four crops of cilantro.

'Costa Rica', 'Leisure', and 'Long Standing' are all good varieties of cilantro to begin growing with, as they are slow-bolting and will produce a plentiful harvest of leaves.

Comfrey

Description: a herbaceous perennial flower that grows in clumps naturally along riverbanks and in grasslands. The plant grows slightly taller than it is wide (12 to 36 inches tall, 9 to 30 inches wide) mature. The large, pointed, dark green leaves are up to 8 inches long with a coarse, hairy texture. The lower leaves tend to be larger than the upper ones on the plant. Tiny bell-shaped flowers bloom in the late spring in clusters off of drooping stems. Comfrey is nicknamed knitbone.

Growing Instructions

Optimal Time/Temperature for Germination: Comfrey is hardy both to the extremely cold and hot temperatures within its growing zones. It will die back in the late fall once frost and freezing temperatures have arrived. But the roots will remain, and the plant will come up again in the spring. Humidity typically isn't an issue for comfrey as long as adequate soil moisture is maintained. Hardiness zones 4 to 8.

Optimal Soil Conditions: Comfrey brings up nutrients from the soil, so they are available to other plants is another good purpose. It can grow in full sun to partial shade, meaning it needs at least three hours of direct sunlight on most days. In the warmer parts of its growing zones, plant it where it will get shade from the strong afternoon sun. The plant can tolerate a wide range of soil conditions, including clay soil and somewhat sandy soil. But it prefers an organically rich, loamy soil that has good drainage. A slightly acidic to neutral soil pH is ideal, but it can tolerate slightly alkaline soil as well. (neutral 6.0 to 7.0).

Seed Planting Depth, Spacing and Procedure: Comfrey is a tall plant, and some varieties can reach five feet or more. Plants should be spaced two feet apart in each direction. So it's more common to propagate the plant from root cuttings. Trim off 2- to 6-inch lengths of the root, and plant them horizontally above 3 inches deep. Plant them less deep in clay soil, deeper in sandy soil. Keep the soil consistently moist (but not soggy) until you see growth.

You can also take a cutting from a neighbor's plant.

Comfrey grows best from bare-root crowns, which many online retailers carry. When you receive your crown, check to make sure that it feels firm. A mushy crown may have rotted and should be returned.

Crowns do best if you pot them first instead of planting directly in the garden. Put in a six-inch pot or a one-gallon container so the roots have plenty of room. Plant crowns three inches deep in light potting soil. Place the pot in a cool room (50-60°F) in indirect sunlight. Keep moist but not wet. You can plant outdoors after the danger of frost has passed when they are showing leaves. Plant transplants or cuttings 2-8 inches deep and crown cuttings 3-6 inches deep. Put plants deeper in sandy soil or where the weather is hot, and more shallow in places where the soil has clay or the weather is cold.

Best Companion Plants and Plants that Hinder: Comfrey is particularly good with: Pear, Plum, Nectarine, Apple, Peach, Apricot, Persimmon, Tomato, Potato, Cucumber, and Capsicum.

Crop Maintenance Comfrey is highly adaptive to a variety of growing conditions and requires very little maintenance. Mature plants grow an extensive root system, including a deep taproot. This allows them to efficiently obtain nutrients and moisture from the soil. But it also makes comfrey plants difficult to eradicate if you ever want to remove them.

Any small portion of the root left in the soil after you dig up a plant likely will grow a new plant. So if you want to limit the plant's spread, it's often best to grow it in a container or raised garden bed instead of the ground.

If you promptly remove the spent blooms, this can prevent the plant from spreading its seeds. Cutting back the stems after the plant flowers also can result in a rebloom. As with all rapid growers, comfrey needs a lot of nitrogen to look its best and flower well. So making sure the soil has enough organic matter mixed in is essential. Otherwise, comfrey mostly takes care of itself except for requiring water during prolonged dry spells.

Moisture Requirements & Solutions: Comfrey plants like an even amount of soil moisture. They have some drought tolerance once they're established but prefer at least a moderate level of moisture. Be sure to keep the soil of young plants consistently moist but not soggy. Water mature plants whenever the top inch or two of soil begins to dry out.

Weed Needs & Solutions: One gardener lost a comfrey plant to weeds by planting it in an area where it was planned to start another garden. Time and energy gave way and weeds took over. Comfrey can be invasive itself so it needs to be divided every couple of years. Doing so keeps the plant healthy and gives the roots plenty of space. Plant divisions in another location or share it with a friend.

Feeding Needs/ Optimal Natural Fertilizers: The best feeding regimen for comfrey is to provide regular organic amendments to the soil, such as a layer
of compost applied each spring. Comfrey's very long roots are good at finding deep nutrients in the soil so you don't need to worry about fertilizing comfrey.

Pests, Diseases & Solutions: Comfrey plants generally do not have any serious issues with pests or diseases. One disease, comfrey rust, which is a fungus that can reduce plant yield. It's primarily a problem only in the U.K. but it is not common in most areas. Slugs and snails also might damage the foliage, but deer tend to leave the plants alone.

Harvest and Storage

When to Harvest/Number of days to Maturity: You can harvest comfrey from late spring through fall depending on how you use it. Harvest common comfrey plants when they're about two feet tall and starting to flower if you're going to use the leaves.

Optimal Storage Temperature and Conditions: Comfrey can be easily dried and stored for future use. Simply spread comfrey leaves out to dry for a few weeks. Once the leaves are dry and crumbly they are ready for storage. Some will crush the dried comfrey leaves and store them in a glass jar. Later you can use that dried comfrey to make a tincture, oil infusion, or even put some in a hot bath with Epsom salts to heal aching muscles. Comfrey roots, which have higher concentrations of allantoin, can be harvested for medicinal use. Dig the roots, wash, and chop into small pieces to help them dry more quickly. Once the chopped roots are completely dry, store them in a glass jar.

Seed Saving: Comfrey can be grown from seed, but it requires a winter chilling period to germinate. It's also not unusual to sow the seeds and not see any germination for two years. Start comfrey from seeds indoors in late winter. Comfrey seeds need a chilling period. Place them in a cool dark area such as an outdoor shed or refrigerator for a month before planting.

Notes:

There are multiple related species that also use the common name comfrey, including:

Symphytum caucasicum: This plant is commonly referred to as Caucasian comfrey or blue comfrey for its flowers that start pink but then transition to a bright blue.

Symphytum grandiflorum: Known commonly as large-flowered comfrey, this plant features showy cream to white blooms.

Symphytum x uplandicum: Also known as Russian comfrey, this hybrid can grow up to 6 feet tall and sports violet flowers.

Planting comfrey as a companion should ideally be grown as a stand alone plant as it grows quite large and can be invasive. That being said, growing comfrey close to your vegetables and allowing it to flower will attract many pollinating insects and it has been proven to improve the condition of the soil just by growing. Plus, it has medicinal properties.

Comfrey makes an excellent compost plant. It's high in minerals including potassium, silica, magnesium, calcium, nitrogen, and iron. These minerals enter your compost as the plant decomposes. The leaves contain about 17% nitrogen. By comparison, horse manure contains about 14% while fresh and 2.3% composted. Leaves have high levels of potash as well as many other minerals that will enrich your compost. To add comfrey to your compost, harvest the leaves and toss them in your green layer. Let the microorganisms break it down and mix in the nutrients. Can also make a welcoming comfrey tea for the garden.

(Read one site listing it internally toxic but most others mention it as a loved chicken fodder. The prickly leaves may cause cows or rabbits to avoid fresh comfrey leaves but once the leaves are wilted they don't seem to have a problem. Horses, pigs, sheep and goats will eat comfrey fodder too.

Cumin Seed

Description Cumin is not a frost hardy plant. It is a warm season annual in the family Apiaceae. This pungent herb has medicinal and culinary uses. The cumin plant grows to heights between 6 and 24 inches (15-60 cm) uniformily. The flowers are small, white or pink, and borne in umbels. Each umbel has five to seven umbellets. The fruit is a lateral fusiform or ovoid achene containing two mericarps with a single seed. It's grown for its seeds and are used whole (resembles a smaller caraway seed) or ground.

Growing Instructions

Optimal Time/Temperature for Germination: Growing cumin from seeds is the easiest and cheapest method. Start seeds inside 6 to 8 weeks before average last frost. Start outside 1 to 2 weeks after average last frost and when the temperatures are warm. Place your seeds into a medium-size bowl, and pour 2–5 c (470–1,180 mL) of water into the bowl to cover the seeds. After 8 hours, pour out the water and place the seeds on a clean paper towel until you are ready to plant them. The seeds begin germinating when wet, and this helps them sprout faster once you plant them. Cumin grows successfully in climate zones 5-10. Cumin plants like warm, dry weather. If you do not live in this climate region, grow your plants indoors.

Optimal Soil Conditions: Get a large container or pot so you can fit several cumin plants inside of it. Select a pot with at least 2 holes so the soil can properly drain. Cumin can easily grow indoors, even though growing outdoors is the optimal method.

Pour loam soil into your container using a garden spade. Continue filling it up until you nearly reach the top. Use well-drained, fertile sandy loam soil for best results. If you don't have a garden spade, you can use a plastic cup. Loam soil is made out of sand, silt, and a small amount of clay. Cumin will grow in a relatively wide pH range between 6.8 (mildly acidic) and 8.3 (alkaline), with an ideal range between 7.0 and 7.5.

Seed Planting Depth, Spacing and Procedure: Cumin plants do not have large roots. Remove a bit of dirt with a spade or your fingers so you can easily place the seed inside. Assign each seed a spot at least 4 in (10 cm) away from the next. The cumin seeds can support each other as they grow, helpful when starting from seeds. take your seeds from the paper towel and place them into their own individual hole. Scoop up a bit of your loam soil, and sprinkle it over top.

Pour about $^{1}/_{2}$ in (1.3 cm) of soil on top. Cumin needs direct sunshine for most of the day. Find a south-facing window, and place your plant on the windowsill or in a plant stand next to it. To help with ventilation and air flow, let an oscillating fan run for at least 2 hours a day. Angle the fan so the air flow faces in the direction of your plants. This helps stimulate the plant, making it grow sturdy and strong.

Other options:

a) purchase T5 high output fluorescent plant lights from a home supply store or garden center, and place them 1 ft (0.30 m) above your plants (depending on wattage and instructions). Leave the lights on for 12 hours a day.

b) Hydroponics

Cumin plants grow healthy nearly anywhere in your garden. You can plant your seedlings outdoors weeks when the temperature is consistently warm. Average temperatures should be 60 °F (16 °C). You can also plant them in raised boxes.

For best results, place each seed or plant at least 4 in (10 cm) away from the next. In addition, you can space each row about 18 in (46 cm) away from the next, so your plants have enough room to fully develop. Planting them close together is helpful because the plants support each other during harvest time.

Best Companion Plants: If you want to increase your harvest and deter pests, trying growing cumin near a few of these companion plants: cucumbers, potatoes, cabbages, or beets. Cumin plants are known to attract beneficial insects.

Crop Maintenance

Moisture Requirements & Solutions: Using your hose or a watering can, give your plants water regularly. Water the plants for about 30-60 seconds. Be careful not to overwater your cumin plants perhaps watering every 1-3 days.

Cumin plants do not like long periods of dry heat, so it is important to keep them hydrated. In the summer months, it can get very dry and arid, so fill up a spray bottle with water and saturate your cumin plants. Do this as needed or about 1 time a week. You can spray the tips, stalks, and roots. Before you water your plants again, wait until the soil is almost dry before you water it. Then, soak the soil thoroughly. If you continue to water wet soil, your plants can grow mildew or start to rot.

Weeding Needs & Solutions: Weed is a major problem in cumin farming. It requires weeding at 1 month and 2 months after sowing cumin seed. Thinning activity should be carried during initial hoeing and weeding to destroy the excess

Feeding Needs/ Optimal Natural Fertilizers: compost tea should be used to fertilize cumin plants during the growing season.

Pests, Diseases & Solutions: Aphids are a common threat to cumin plants. Fortunately, there are many natural remedies to get rid of them. You can try spraying them with a garden hose, or place onions or garlic around your plants as a natural deterrent. In addition, you can mix 4-5 drops of thyme, peppermint, clove, and rosemary essential oils into a spray bottle filled with water. Then spray the infested plants thoroughly. (They may also be susceptible to wilt, blight, powdery mildew, and root rot if kept too wet.)

Harvest and Storage

When to Harvest/Number of days to Maturity: Harvest the cumin seeds after about 4 months of growth. There are approximately 30 cumin seeds per gram.

How to Harvest: Cumin seeds first bloom into little white and pink flowers, and then the flowers develop into seed pods. When the pods turn brown, the cumin is ready to harvest. Using a pair of scissors or gardening shears, trim a few plants where the flower meets the stem when you notice brown pods. Cumin seeds often ripen unevenly, so keep a watchful eye on your plants after about 4 months of growth. Repeat this every time you see about 5-6 plants with brown pods.

Optimal Storage Temperature and Conditions: After you cut down the plants, separate the pod clusters with your fingers and put them inside of a brown paper bag. The pods will easily section off from the plants with little force. Do this for all of your pods, and tie your paper bag up with a twist tie or rubber band. Hang the bag upside down from a string on your ceiling in a warm, dry place for 7 to 10 days. You can hang the bag in your kitchen.

Seed Saving: To get to the seeds, hold 1 pod in between your index finger and thumb, and rub your fingers together. The seed will easily fall out of the pod. If your seeds are not coming out of the pod, hit your full brown paper bag against a hard surface to dislodge the seeds. Then, pick through the organic matter to get your seeds. Gather all the seeds, and either use them right away or place them in an airtight container for storage.

Notes: Roast your cumin if you want to enhance the flavor and aroma. Place a small skillet on high heat, and place your seeds into the pan once it is hot. Shake your seeds in the pan for about a minute until they get darker in color. Ground cumin is made by grinding dry roasted cumin seeds.

Dill

(Anethum graveolens). Other common names include: Dillweed, Dilly, Lao coriander and Peucedanum graveolens.

Plant Description:
Dill is a culinary herb that has a distinctive flavor that's a cross between celery and fennel. Native to Europe and Asia, dill plays a big role in seasoning pickled foods meant to be canned and stored for winter. Beyond that, both the leaves, stems and seeds are used to season a variety of dishes. Dill is an annual that will grow to between 2 and 4 feet tall, depending on conditions and the variety.

Growing Instructions

Optimal Time/Temperature for Germination:
Dill is a cool weather plant and It will germinate best at soil temperatures between 60 and 70 degrees Fahrenheit (15 to 21 Celcius). Seedlings will appear in 10 to 14 days, and so it can be planted very close to the last frost date in your region. It has a long taproot and this means it does not like to be transplanted. Germinate the seeds in the pot or soil you wish to have the plant grow to maturity. Plant your dill in a spot that gets full sunlight for at least six to eight hours a day. If you live in an especially hot climate during the summer, a bit of afternoon shade is fine and appreciated. It will grow in USDA zones 2 to 11 and is considered a self-seeding plant which means if allowed to mature and go to seed, you do not need to replant it year after year. This has earned it the nickname of 'dillweed' since it spreads quite easily.

Optimal Soil Conditions:
Dill plants prefer soil that is rich, loose, and well-draining. Dill is not particular about its soil pH but thrives best in a slightly acidic blend.

Seed Planting Depth, Spacing and Procedure:
Plant the seeds about 1/4 inch deep, spacing them out about 6 to 8 inches from one another. You will probably need to thin your plants to 1 per 12 inches as they grow, around the time they reach about 6 inches high. Additionally, dill responds well to pinching out the center growing tip —it will make for a bushier plant, so pinch and use your dill often. This is a similar process to pruning basil and pepper plants.

Best Companion Plants and Plants that Hinder:
Pests such as cabbage worms and cabbage loopers that plague brassicas are repelled by dill, so it's a good idea to put this herb near vegetables in that group, which includes brussels sprouts, cabbage, broccoli, collards, and kohlrabi. Young dill repels the dreaded tomato hornworm, and is said to improve the growth of tomatoes. On the other hand, however, once the herb matures, it can actually impede the growth of tomato plants. The solution if you want to plant dill with tomatoes is to harvest the dill completely before the dill matures (flowers).
In general dill should not be grown near fennel, caraway, celery, and carrots. Fennel can potentially cross-pollinate with dill, producing a bitter-tasting hybrid. Mature dill can stunt the growth of nearby carrots. It also should not be planted near peppers, eggplant, potatoes, or lavender.

Crop Maintenance

Moisture Requirements & Solutions:
Keep your dill plant consistently moist at all times, without allowing the soil to become boggy or soaked.

Weeding Needs & Solutions:
The soil should never be allowed to dry out completely between waterings, as that can cause the plant to prematurely bolt to seed.

Feeding Needs/Optimal Natural Fertilizers:
If your garden soil is rich in organic matter, your dill should require no additional fertilizer.

Pests, Diseases & Solutions:
Dill is virtually problem-free. In fact, it attracts a wide variety of beneficial insects to your garden—lacewings and syrphid flies will feed on the plant's pollen and lay their eggs nearby, and the larvae, in turn, feed on aphids, which can cause problems for many plants.

Harvest and Storage

When to Harvest/Number of days to Maturity:
In approximately 70 days you can harvest the leaves and foliage. In about 90 days the plant will mature fully and you can harvest the seeds.

How to Harvest:
To harvest, snip off the leaves or young flower heads for use in soups or salads. For pickling, cut whole stalks when the plant is more mature. Gather the mature seeds for planting (although the dill will do its own planting without your help if you leave it alone) or for drying. If the center of the plant is pruned, the dill will become bushier (more stems and leaves). If you leave the center stem to grow, dill will go to seed faster. For seed harvesting, snip the top flower after the seeds have formed and begin to dry.

Optimal Storage temperature and Conditions:
It is quite perishable in fresh form. Freshly cut dill will last a few days (2 to 7) in the refrigerator. If kept as a whole stem and placed in water (like a cut flower) in the fridge it may last longer (a couple of weeks).

Optimal Preserving Procedures:
Drying and freezing are the best options for dill. For drying, take the cut stems and hang them upside down in a cool, dark and dry location for up to a week or more to dry them (or use a food dehydrator). Once dry, the leaves can be crumbled off the stems and stored for many months. For freezing, take the cut stems and place them in the freezer for a few hours. Transfer the frozen stems to an air-tight container and keep in the freezer. Alternately, you can add chopped fresh dill to butter or oil and store that in the freezer until needed. The last option is to store fresh dill in vinegar to preserve some of its flavor.

Seed Saving:
Once the flower has matured and the seeds are dried out, cut off the complete flower and hang it upside down in a cool, dark and dry location. Once it is completely dry, you can shake the flower head inside a paper bag or large bowl and harvest the seeds. Then you can use the seeds for cooking or for storage and re-planting.

Dill will self-seed so if you just want to have dill as a recurring annual, you can let the seeds mature on the plant and the seeds will drop to the soil and grow again the next year.

Fenugreek

Description Fenugreek is used as a herb (dried or fresh leaves), spice (seeds), and vegetable (fresh leaves, sprouts, microgreens). The seeds are cuboid-shaped and yellow to amber-colored. This annual herb has use in traditional medicine. Its native habitat includes uncultivated ground, the edges of fields and dry grassland. The flowers resemble a butterfly. The consumable parts of fenugreek (both the leaf and seed) come from the stem portion of the plant. It has a lovely aroma similar to clover, a close relative, and vanilla. This annual herb has uses in medicine so caution and do research.

Growing Instructions

Optimal Time/Temperature for Germination:
Depending on where you buy from and whether or not you buy organic seeds, it will cost anywhere between 25 cents to $1 for an ounce of fenugreek seeds. Fenugreek prospers in warm soil, so any time from spring to early autumn will work for most places. If you live in a colder place, or you want to start growing your fenugreek before spring, you can start it off indoors as early as 5 weeks before the last frost.
Hardiness Zone 5a to 11.

Optimal Soil Conditions:
Fenugreek can be planted in the soil in your yard, a twelve-inch planter, or even a tray filled with dirt. Ideally, you want an area with full sun, but partial shade or even filtered sunlight will also work. Fenugreek does not do well when transplanted, so either plan to plant your fenugreek in the area where it will mature from the beginning, or try using a biodegradable pot that you can plant into the ground later.

You will want the soil you use to have a well-drained, loamy texture. It should also have a slightly acidic pH balance. 6.4 pH is considered ideal, but anything between 6.0 and 7.0 pH is generally considered acceptable, so test it before you plant your seeds. Fenugreek seeds must be continually kept moist, but you also have to make sure they don't become overwatered. For that purpose you will need to make sure that the water can easily drain away by breaking up any large chunks of soil. You can also mix in river sand to make it drain better, and add organic compost material and manure to help fertilize it better. You'll also need to make sure that there is space to cover your seeds with more potting soil.

Seed Planting Depth, Spacing and Procedure: Soaking the seeds overnight before you plant them will help to increase their germination rate. Place the seeds in a bowl or cup of room temperature water and leave them there overnight. In the morning, drain the water before planting the seeds.

If you are planting your seeds in an outdoor garden, you'll want to dig the ground up to 25 cm down to break up the soil.

If you are using a container with loose potting soil instead, you probably won't need to break any of the soil once you've poured it into the container. Be sure to leave some space between the top of the soil and the edge of the container to fill in more soil on top of the seeds once they have been sown.

Sprinkle seeds across the dirt in the areas you want your fenugreek to grow. Don't worry about making sure that the seeds are even or perfectly spaced. Fenugreek seeds don't have to be distanced a certain amount of space apart in order to grow properly like some plants.

Fenugreek does not need to be buried very deep in soil. In fact, only .5cm, or ¼ inch, of potting soil provides ample coverage for your fenugreek. You will want to be sure they're buried so that scavengers like birds will not eat them.

Best Companion Plants and Plants that Hinder: Corn, squash, potatoes, peppers, cucumbers, and rye are good companions. Avoid planting any legume next to members of the allium family which are bulb onion, spring onions, garlic, shallots, chives, and Egyptian walking onions.

Crop Maintenance If potted, fenugreek loves being close to bright, sunny windows so place it less than a foot from a south-facing window to maximize the potential for growth. (fenugreek does not tolerate low-light) Fenugreek grows vertically and new growth will emerge from the top of the plant.

Moisture Requirements & Solutions: In order for the seeds to germinate (that is, begin to sprout), you will have to water them in the soil. Make sure that the soil is evenly moist. The excess water should quickly drain away, but you will want to continue to keep it well-moistened over the coming days. Sometime between the third and fifth days they should start to bud.
Because of the rainy environment that fenugreek adapted to, it's advised that you maintain a steady slow drip watering method instead of pouring water on the surface periodically. Not only will this make water delivery constant and even, it also allows the water to penetrate the soil deeper and more effectively.

Weeding Needs & Solutions: You will need to minimize weeds around this plant for good production. However, you want to be careful not to disturb the root system of the fenugreek. If weeds emerge, you can clip them at the head with scissors to keep them in check until you harvest your fenugreek.

Feeding Needs/ Optimal Natural Fertilizers: compost every 1 to 2 months depending on your location and season. It only requires moderate fertility and will not grow well in soil that has excess nitrogen. If plants need a mid-season fertility boost, compost tea is your best bet to stimulate growth. Just add 1
part compost tea to every 8 parts water in your watering can and moisten the soil like usual. You can also use low nitrogen, high beneficial bacteria fertilizers like fish emulsion to perk plants up in extended hot or dry periods.

Pests, Diseases & Solutions: Although fenugreek does not suffer from too many pests or diseases, you may notice a powdery mildew, aphids, or charcoal rot. Beware pests like crickets, snails, and slugs which enjoy eating fenugreek sprouts. If the aphid infestation is minimal, spraying the plant with water or using reflective elements in the mulch can easily solve the issue. However, if the infestation is rampant, using repelling soaps or oils would be the best plan of action.

Harvest and Storage

When to Harvest/Number of days to Maturity: It takes between 3-4 weeks for the seedlings to be ready to harvest. You will know that it's time by the height of the sprouts, which should grow to about 6 inches or 140 mm tall. You can use the same soil to plant other seeds if you want, no need to change it.

How to Harvest: Depending on whether you're trying to get leaves or seeds from your fenugreek you will want to vary how you harvest the plant. For leaves, cut the plant at the stem a few centimeters above the soil, pull them up by the roots, or you can remove the older leaves first and leave the younger leaves in place to continue growing fenugreek. For seeds, wait for the pods on the plant to turn yellow, signaling that they've fully ripened, and harvest the seed before the pod pops open.

Optimal Storage Temperature and Conditions: obtain fenugreek from a reliable source to minimize risk of contamination and store it at room temperature. Keep it away from moisture and heat. Store fenugreek seeds in an airtight container. The leaves dried tend to have a shelf life of 6 months to a year at best depending on how often you open and close your container.

Sprouted fenugreek seeds are great in a salad. Pure fenugreek seeds taste better roasted or blended with spices. You can also mix fenugreek into pancakes, herbal teas, breads, and baked goods.

Seed Saving: Some varieties of fenugreek do not regrow after flowering. So if you want a constant supply of fresh fenugreek, you should plan to sow seeds every 2-3 weeks, as that is around the time the current set of plants will die. If you want to reuse the same area, especially immediately, you'll want to pull up the remains of the plants after harvesting and compost them. If you are growing fenugreek for seeds, you'll get fatter seed pods and faster production if you don't harvest any leaves. That's why it's a good idea to grow some fenugreek plants only for leaves. Then, reserve some to grow unharvested for good seed production.

Notes:

Fenugreek is sometimes used as animal feed. It provides a green fodder palatable to ruminants. The seeds are also used to feed fish and domestic rabbits.

To really express the flavor of the seeds they need to be roasted. However similar to coffee, they will taste better if you wait to roast the seeds right before you use them. To roast, heat up a cast iron pan and toss them in for a few minutes. Turn them each time they start to smell like brown sugar until all sides are lightly browned. Then use your seeds immediately in your favorite recipes.

Good crop rotation is also key. Don't plant fenugreek in areas where other legumes have been for at least three years to reduce risks.

Feverfew

Description Feverfew is an aromatic, flowering herb and is an easy-to-grow perennial plant. It is often mistaken for a weed because of how easily it spreads after taking hold. This plant (Tanacetum parthenium) is actually a species of chrysanthemum that has been grown in herb and medicinal gardens for centuries.

Growing Instructions

Optimal Time/Temperature for Germination: However, once the plants are established (after 6 months) they reseed themselves and spread very easily, so you will always have a supply of feverfew after planting it. Hardiness zones are 5-10.

Optimal Soil Conditions: As long as you plant feverfew in well-draining soil, make sure it gets plenty of sun, and keep it watered, you will have a plentiful supply of the plant. Loamy soil is soil that is composed of sand, silt, and clay. The best type of soil for feverfew will contain about equal parts of sand and silt, with a lower concentration of clay. To test if the soil drains well, dig a hole that is about 12 in (30 cm) across and 12 in (30 cm) deep. Fill the hole with water and time how long it takes to drain. If it drains in 10 minutes or less, then the drainage is very good. If it drains in an hour or longer, then it is poor drainage.

In early spring, right before you plan on planting the feverfew, mix in compost if you don't have a spot with loamy soil. Use a garden hoe to till 6 in. (15 cm) down and add 3 in (7.6 cm) of compost on top. Mix the compost in well with the hoe to create a good soil composition for growing feverfew. Feverfew plants like to get a lot of sun. Choose a place to plant it that gets full sun for 6 or more hours a day if you live in a cool to warm climate, and a spot that gets partial shade for up to 3 hours in the afternoon if you live in a very hot climate. Feverfew does not survive extremely cold temperatures. Check the forecast to make sure that there are no more freezing temperatures before you plant so that the seeds or seedlings survive and soil pH of 6.0 to 6.7. Feverfew plants that are 6 months old and well-rooted can tolerate winter temperatures.

Plant it in pots full of loamy soil instead of the ground if you want to have more control over it. Use pots that are 9–12 in (23–30 cm) deep and about 12 in (30 cm) in diameter for each feverfew plant you want to grow.

Seed Planting Depth, Spacing and Procedure: Plant seeds or seedlings 12 in. (30cm) apart. This is how much space you need to have in all directions between feverfew plants. Plant seeds or seedlings this distance apart from the start so you don't have to move them later. Press seeds just under the soil with your thumb and cover them up with dirt. Dig a small hole big enough to fit the root system of a seedling, place the plant in, and compact the soil around the base. If you choose to plant seeds, they will germinate and start sprouting in about 1-2 weeks.

Best Companion Plants and Plants that Hinder: If you want to plant feverfew in a garden bed with other plants, do it with other types of aromatic herbs such as mint and thyme. Make sure not to plant feverfew near plants that need to be pollinated by bees. Feverfew has a scent that repels bees. You can plant garlic, cress, and geraniums to keep pests away.

Crop Maintenance

Moisture Requirements & Solutions: Water right after planting and keep it moist. This is especially important to help seeds germinate. Make sure that the soil doesn't dry out by misting it with a hose daily. If you live in an extremely hot climate, then check on the soil twice a day to make sure it does not dry out.

Feeding Needs/ Optimal Natural Fertilizers: mulch with rich compost or topdress with a balanced organic fertilizer.

Pests, Diseases & Solutions: Watch out for pests like slugs, powdery mildew, spider mites, and aphids. They are more likely to appear if you overwater your feverfew. Make sure to deal with any infestations as soon as you see them to prevent a bigger problem. Insecticidal soaps can be used to treat and then rinse.

Harvest and Storage

When to Harvest/Number of days to Maturity: 80 to 90 days. It can grow up to 2 ft. (0.61m) tall. Wait for the feverfew to be in full flower, during late spring and in the summer, in mid- morning after dew has dried before you harvest it. Make sure the plant still has abundant greenery when you harvest it so it will recuperate.

How to Harvest: Use garden shears to clip off whole stems. Leave the flowers and leaves attached to the stems to be dried all together if you want to make herbal remedies. If you aren't planning on making any herbal remedies, you can also put harvested feverfew in a vase to brighten up your home and add a citrusy scent.

Tie together bunches of feverfew stems with twine or string and hang them somewhere in your home where they will dry out as quickly as possible if you want to make herbal remedies. So It is popularly dried using a screen and by hanging it upside down but may also be dried in an oven and a food dehydrator. For the screen and hanging dry methods, it usually takes a week or more to obtain results whereas with an oven and food dehydrator, these results are a lot quicker. However, when using these machines there's more room for error.

Optimal Storage Temperature and Conditions:

a) To hang dry feverfew, tie it and hang it upside down in a dry and dark area that is well-ventilated. It will need about a week or more to become fully dry.

b) Feverfew may be dried in an oven at a low temperature, around 140°F. While preheating the oven to this temperature, lay it out on a tray and when it is preheated, place them inside of the oven and turn it off. Leave the door of the oven slightly ajar to properly circulate air. Take the feverfew out of the oven when it looks dry and dehydrated.

c) Feverfew may be dried in a food dehydrator on the lowest temperature. While it is preheating, place the plant on the drying racks and when it is fully warmed up, place the feverfew in the dehydrator. It may take hours to fully dry but check on it in intervals of hours to ensure that it does not become too brittle. (Use dried feverfew within 4 months to get the most effect from it.)

Seed Saving: Feverfew plants will typically die off after 2-3 years. However, once the plants are established (after 6 months) they reseed themselves and spread very easily, so you will always have a supply of feverfew after planting it. Feverfew can also be propagated by cuttings and by root division.

Notes: Feverfew is also known as featherfew, febrifuge, featherfoil, mid-summer daisy, wild chamomile, and false chamomile.

Steep the dried feverfew in hot water to make herbal tea from a mixture of dried leaves, flowers, and stems. (People have reported relief from fever, headaches, cramps, rheumatism, arthritis, and digestive problems.)

You can even rub feverfew on your skin to reduce swelling, pain, and irritation caused by insect stings.

Some wild feverfew may be able to tolerate temperatures up to -20°F but it is safer to not allow it in such temperatures. Feverfew in the winter does better if transferred to a pot and grow indoors, as this will protect it from frosting and freezing temperatures.

Feverfew may also be planted near roses to keep aphids away.

Frankincense

Description Frankincense can be grown from seed or cuttings but is most commonly harvested from the bark of the frankincense tree. Frankincense is an aromatic resin (dried sap) obtained from trees of the genus Boswellia in the family Burseraceae. There are several species of Boswellia that produce true frankincense: Boswellia sacra, B. frereana, B. serrata, and B. papyrifera. Resin from each is available in various grades, which depend on the time of harvesting. The resin is hand-sorted for quality. They are short, gnarled, knotty trees growing under the harshest desert conditions.

Growing Instructions

Optimal Time/Temperature for Germination: Where to grow: Frankincense can be grown throughout the year in USDA hardiness zones of zone 11 and 12.
Frankincense can be grown in many parts of the world, but it likes a dry and hot climate. It is native to Africa and thrives in areas with low rainfall.
The trees grow well on rocky hillsides where there are plenty of sunny days during the year. This makes it an excellent tree to plant in dry climates like Southern California, Arizona, or Nevada, as they get an abundance of sun each day. The time to plant frankincense is after the rainy season.

Optimal Soil Conditions: For soil preparation, Place a tarp or sheet of plastic on the ground. Dig up dirt to create an area about 16 inches deep and with the exact dimensions of your container. Mix in one part potting soil, two parts compost, and three parts sand for best results. Line your planting container with newspaper or wet burlap sacks, then scoop out enough mixture to fill the container. Press down firmly with your hands all over before watering well to settle and moisten it thoroughly. Make sure that your frankincense is in a sunny location, preferably one near an open window or door if space allows. A south-facing exposure will be best, but west or east exposures are also acceptable if you protect the plant from frost.

To help keep moisture in, be sure to place a tray beneath your container so that it can catch any runoff water and do not allow the soil to dry out completely between watering sessions. Frankincense is a drought-tolerant plant and will grow in full sun to partial shade. It is not tolerant of frost.

Seed Planting Depth, Spacing and Procedure: How to propagate: The easiest way is to cut from an established plant and insert the tip into moist soil mixed with sand. It should root within one month as long as it has enough light, water, and warmth.
If by seed, dig a hole that is at least 2 inches deep and 1 inch wide in the soil. Place a half-and-half mixture of limestone and sand in the soil. Spread your frankincense seeds over the sand and limestone. You can purchase your seeds at your local garden store or online, which may be sold as Boswellia seeds instead. Cover the seeds with a 1/4-inch layer of sand and limestone, and pack down the seed bed. Water the seed bed immediate with 1/2 cup of water. Continue watering the seed bed two to three times a day or whenever the soil is extremely dry. Wait until about 2- 3 weeks for the seedling to sprout.

Plants that Hinder: keep away the weeds. Planting various companion plants around your frankincense will create a habitat for beneficial insects and birds, which can keep pests away.

Crop Maintenance

Frankincense trees are generally hard to kill, but they can be susceptible to fire and drought damage if not cared for properly.

Moisture Requirements & Solutions: Watering frankincense is not tricky, but it does need to be done with a good amount of care. These plants require well-draining soil and can withstand drought conditions for up to six weeks before they begin to wilt.

To water your plant, you will want to avoid overhead watering because this may cause the leaves on top of the soil to rot. Instead, water thoroughly from below by placing a few inches of water in a saucer and letting it collect for about two hours before giving your plant its next drink.

Keep the soil moist by watering daily during dry weather; this will also discourage pests from coming close and help keep moisture in the air due to evaporation. You may want to consider building a small pond or urn in your yard to help with this.

Feeding Needs/ Optimal Natural Fertilizers:

The best fertilizer is organic compost. It's essential to keep in mind that too much nitrogen will promote leaf growth, and not enough may cause the tree to produce fewer flowers, so it may be worth incorporating other fertilizers from time to time. Organic compost like cow manure or straw are suitable for adding nutrients to the soil. Guano and Manure are organic fertilizers that may contain high levels of nitrogen, so they should be used in moderation. Some growers apply ascorbic acid to the soil or spray it on trees. Worm castings, which are high in nitrogen and phosphorous, can be used as a fertilizer for plants that require more nutrition than other types of soil will provide.

Pests, Diseases & Solutions:

The best way to get rid of pests and diseases is through prevention. Put a physical barrier between the tree or plants, such as chickens with peck protection. This will discourage most bugs from feeding on your trees. If you find that some critters are still getting into your yard, use an all-natural spray available at gardening stores.

If you have an infestation of pests or diseases, early detection is key. Look for wilting leaves and yellowing plant parts warning signs that your tree might be under attack from a pest. You can also check the direction of the leaf veins on young plants to see if they are going in opposite directions than usual; this indicates possible insect infestation. To prevent an infestation, start by using a mulch of hay or straw around your tree to help keep the moisture level up and discourage crawling pests from coming into contact with the surface roots. Treat any wounds on the trunk with sealant after they have healed over (this will also reduce chances for disease).

Harvest and Storage

When to Harvest/Number of days to Maturity: Frankincense trees can take up to four years before they produce any frankincense extract. Once the tree is seven years old, it will start producing a few drops of oil every year—the production rate increases with age and size. Once collected from the bark through small incisions in their trunk or branch, the frankincense oil takes up to eight hours to seep out.

How to Harvest: The resin is hand-sorted for quality. Cuts are made into the trunks and branches of the trees that react by producing resin to cover the wound and prevent infection. Harvesters then come by and harvest the resin, then make more cuts.

Optimal Storage Temperature and Conditions: Using a smooth surfaced deep mortar (brass for resins) and spreading a spare hand over the opening will cut down on escapes. Avoid wood, porous stone, or unglazed clay. Mortar and pestle offers an opportunity to connect with the material and the process on a personal, experiential level which can contribute to the quality of the products we create.

When time is limited, and grinding larger quantities of resins, an electric coffee grinder or herb grinders work well. Burr mills are not suitable. Large ½ inch and up resins need to be broken down before grinding. Insert chunks into a ziplock bag and pound them judiciously with a hammer so the grinder can handle them. Spread the powder out to dry. If a finer powder is needed then ground and dry again. Three times should achieve a fine loose powder that will not clump for capsule filling.

Sticky resin residue cleanup is accomplished with vegetable oil and a steel brillo pad. Oil resin/blend is dissolved with dish soap, warm water, and rinsing. For the electric grinder, fill 1/3 or 1/2 cup of raw rice and make a powder. Then wipe with a damp cloth.

Seed Saving: To achieve the best germination, you should soak the seeds in water for 24 hours in room temperature, and then sow them in sowing mix at a temperature of 25-30 degrees Celsius. The seeds only have to be very lightly covered with soil. It's best to spray some water on the soil every morning, so that the upper lay becomes moist. This can dry up later in the afternoon or evening, after which you water the soil again in the morning. On this way, you can simulate the morning fog that often comes up in its original habitat. Sowing time is all year round.

Notes: There's a successful grower in the Sonoran Desert (Tempe, AZ).

Hyssop

Description It is a member of the mint family and comes from two different genera: Hyssopnus and Agastache. Both types of hyssop are perennials and have evergreen foliage with clusters of tiny flowers. The flowers grow at the top of tall spikes of deep blue, red, pink, or white. and have a pungent scent. (so as not to be confused, be careful that there are several plants that get referred to as hyssop.)

Both the leaves and flowers can be used. The leaves can be finely chopped and used in cooking to flavor salads, soups, liquids, and stews. Use sparingly because of its unusual flavor. The leaves and flowers can be dried for teas. Oil from the plant is used in perfumes. Hyssop is a plant that has many culinary and medicinal uses. It is an easy-care, first-year flowering perennial that brings bees, beneficial insects and butterflies to the garden (and hummingbirds too).

Growing Instructions

Optimal Time/Temperature for Germination: Hyssop can be started in containers, indoors or outdoors. If you plant in a container make sure the pot is deep enough to accommodate a large root system. Sow seeds indoors or directly in the garden in early spring. You can also sow the seeds outdoors in late fall for spring germination. Hardiness Zones 3 through 10.

Optimal Soil Conditions: . Hyssop prefers full sun to partial shade with well drained, light even dry, soil. You can amend soil with organic matter. Hyssop will grow in a wide pH range between 5.0 (strongly acidic) and 8.0 (alkaline) with an ideal range between 6.5 and 7.0.

Seed Planting Depth, Spacing and Procedure: Sow seeds just beneath the surface, approximately ¼-inch deep. Germination generally takes between 14 and 21 days, but can take as long as a month, so be patient.

Transplant if sown indoors after all threat of frost has passed. Space between 6 inches and 12 inches apart.

Best Companion Plants and Plants that Hinder: Hyssop is a good companion plant for cabbage by attracting honeybees and butterflies while repeling or distracting cabbage moth larvae and cabbage butterflies. It is also said to stimulate the growth of grapes. (Lavender Hyssop and Bee's Balm love each other)

Crop Maintenance

Hyssop spreads quickly, so keep it pruned back if it gets too crowded. Make sure it has plenty of space and good air circulation.

Moisture Requirements & Solutions: Water regularly, being careful not to overwater. Allow soil to go completely dry between watering, then soak thoroughly. Tolerates dry conditions well.

Weeding Needs & Solutions: The edges must be kept free from weeds since they'll take over quickly if allowed to do so.

Feeding Needs/ Optimal Natural Fertilizers: Hyssop is a low-maintenance plant and only needs organic fertilizer to thrive. The best time of year to fertilize this herb with compost tea or manure tea is late winter, when it starts its new growth cycle.

Pests, Diseases & Solutions: Hyssop is highly impervious to virtually all pests and diseases. Try to deter pests such as aphids, caterpillars, and spider mites, which can damage the plant's leaves if left untreated.

Harvest and Storage

When to Harvest/Number of days to Maturity: You should sow hyssop seeds outdoors between March and June for the earliest harvest and takes 85 days for the plants to flower. Hyssop usually grows to a height of 24 to 36 inches (60 - 90cm). Once the leaves start turning yellow and dying back, it's time for harvest.

How to Harvest:

You can start harvesting the young leaves when hyssop is ten inches or so tall and before flowering occurs. If you are harvesting leaves for cooking, pick a few individual leaves as you need them. Keep in mind, the leaves are strong and you don't want to overpower other flavors. Hyssop combines well with sweeter herbs such as lemon balm.

You can cut the stalks off at ground level and leave them in a sheltered spot until dried out completely before storing. If you're harvesting the leaves to dry for winter use or in medicines, then pick several sprigs at a time. You can harvest hyssop several times a season. Cut the stems in the morning after the dew has dried. Dry hyssop by hanging upside down in a cool place with good air circulation. You can also use a food-grade dehydrator. Place the leaves so they are not touching. Set the temperature on the lowest setting for several hours.

Optimal Storage Temperature and Conditions: When they feel crunchy, you can remove the leaves from the stem and store them in an airtight container.
Mason jars work well.

Seed Saving:
The main generic variety known as common hyssop is a perennial and reseeds readily in spring. Hyssop can be propagated a Root division in spring or fall. If you have a friend that is willing to share during late spring or early fall, you can take a six-inch stem cutting, strip off the lower leaves, and place the stem in moist sand. Occasionally mist the plant. The sand should be slightly damp but not wet. Roots take about one month to grow.

Notes:

Growing cultures outdoors, containers (sow direct in final pots, or in plugs and later transplant to final pots), and hydroponics.

There are between approximately 900 and 1,000 hyssop seeds per gram.

Alternative growing media are soilless potting mixes (Pro-Mix, Sunshine Mix, etc.), perlite, vermiculite, rockwool, coco peat, Oasis Rootcubes.

Hyssop will grow indoors satisfactorily under standard fluorescent lamps, and exceptionally well under high output T5 fluorescent grow lights, compact fluorescent, or high intensity discharge (metal halide or high pressure sodium) plant growing lights.

Keep standard fluorescent lamps between 2 and 4 inches from the tops of the plants, high output and compact fluorescents approximately one foot above the plants, and HID lights between 2 and 4 feet above the plants, depending on wattage. Have an oscillating fan gently stir seedlings for at least 2 hours per day to stimulate a more compact, and sturdier plant habit.

Hyssop (especially lavender hyssop) already confuses many buyers because when they google it, they see pictures of a plant that from a distance, looks like the more familiar Lavender plant.

Whereas hyssop can be grown easily from seed, lavender seeds often need cold stratification to germinate, and can be difficult to start for beginners. If your "lavender" seedlings have wide serrated leaves, and look like weedy lemon balm or mint plants, they are probably hyssop. The leaves when crushed, release a weedy, mildly monty fragrance.

Anise hyssop is not a true hyssop. It's a member of the mint family and has similar qualities.

Rock hyssop is a cultivar of common hyssop. The big difference is that its much lower-growing.

Yellow giant hyssop is a scentless cultivar variety that is tall and produces yellow flower spikes.

Korean hyssop, sometimes referred to as Korean mint, is similar to anise hyssop.

Mexican giant hyssop grows over three feet tall.

Lamb's Ears

Description: Lamb's ear is an herbaceous perennial ground cover in the Lamiaceae (mint) family. Hailing from the middle east and featuring thick, soft, velvety, silver-gray leaves that form a rapidly spreading ground cover that also attract bees, butterflies and hummingbirds. They are evergreen in warmer climates. In summer, tiny, purplish-pink flowers appear that are best removed to enhance the foliage. As a drought-tolerant perennial, lamb's ear (also called Wooly Betony) is good for xeriscaping and rock gardens. It's a fast grower typically planted in the spring. A few new plants or cuttings started early in the spring can fill a large area by fall.

Growing Instructions

Optimal Time/Temperature for Germination: Lamb's ear grows well throughout its hardiness range, zones 4a to 9a withstanding a range of temperatures and can be used as a winter or spring annual in zones 9b through 11, although it cannot survive hot, humid summers. This herbaceous plant is evergreen in mild climates. In colder areas, the leaves will die back to the ground during harsh winters and reemerge in the spring.

If the lamb's ear has flowered and you have harvested the seeds or have access to lamb's ear seeds, the best time to start seeds is indoors in the late winter—8 to 10 weeks before the last frost. Moisten a good quality seed starting soil, press the seed into the soil but do not cover. The seed needs light to germinate. Keep the soil moistened throughout the germination process. You can also sow seeds outdoors after the threat of frost has passed. It takes about 30 days for seeds to germinate.

Optimal Soil Conditions: With a slightly acidic pH 6.0 to 6.5, the soil type can be poor soil but well draining and evenly moist to dry. Amend the poor soil with organic matter to improve drainage before planting. Grow lamb's ears in full sun in cooler climates. In desert areas and high-heat locations, it can profit from partial shade. Excessive heat and dry conditions will cause the leaves to scorch.

Seed Planting Depth, Spacing and Procedure: If by seed, do not cover but press seed into soil. If not from seed, to propagate, either dig up newer plants that self-seeded and naturally propagated on their own or divide established patches in the spring. These plants divide readily and benefit from a division every two or three years to keep them looking and remaining healthy. Flowering varieties may need to be divided more often than non- flowering forms.

A visual cue that you should divide is when you have a wide-spreading plant with a dead center. The plant's creeping stems will root wherever they make contact with the soil. Here are steps: 1) You'll need a new container (or growing location), well-draining soil, and gardening gloves. If the roots are firmly packed and aren't budging, use a two-tined hand pitchfork to help you pry up the clump of lamb's ears. 2) Gently pull up the clump. By hand, remove the dead, wilted parts and roots. Separate the clump into sections. Each section should have healthy fibrous roots. Plant each section at least 18 inches apart.

Best Companion Plants: Black-eyed Susan, Day Lilly, and Roses.

Crop Maintenance

Moisture Requirements & Solutions: Lamb's ears only need about one inch of water per week. Water only if the soil feels dry. Lamb's ears are drought-tolerant but will lose some of the older leaves during dry spells. Avoid watering the top of the plants; the leaves will rot or develop fungal leaf spots or powdery mildew if they get too wet. Leaves that are close to the ground are particularly susceptible to decay. You can help to keep the foliage dry by mulching underneath the leaves.

If it's in a pot, it needs a south window and go light on the water but water from the bottom to avoid wetting the leaves.

Feeding Needs/ Optimal Natural Fertilizers: You can skip giving your lamb's ear fertilizer in most situations since it prefers soil that is not rich. However, you can add a thin layer of compost every spring to spur growth.

Pests, Diseases & Solutions: The plants are deer-resistant and rabbit-proof. It's not particularly susceptible to insect invasion, thanks in large part to its wooly, protective hairs on its stems and leaves.

Some problems are rotting and spots on leaves which is a fungal infection from organisms that create brown, black, powdery yellow, or white spots. Discard infected leaves and decomposing matter. Rotting material often invites fungal spores to move in on an otherwise healthy plant. To treat and try to salvage infected plants, use an anti fungal spray and make sure the plant has plenty of air circulation.

Lastly, microscopic nematodes are not insects, but slender, unsegmented roundworms. They feed on all parts of the plant. An infested plant will look sickly, wilted, or stunted, with yellowed or bronzed leaves and eventually die. The best way to get rid of the problem is to get rid of the plant.

Some growers find the flower stalks of lamb's ear gangly in appearance. Deadheading the plant keeps it looking tidy and helps prevent pests (it is the "dead" flower "heads" that you are removing). Removing dead leaves or parts will help prevent these pests. At the end of the growing season in late fall, the plant will begin to die back. Cut away the dying foliage to the soil level. If you don't do this in the fall, you can cut away the dead foliage in the spring before new growth emerges. If the plant spreads and you prefer to keep the plant's clumping growths, look at the center point where the plant originates. Lamb's ears spreading away from its center point means that the center and those roots have likely died. Remove the dead centers. The plant sets new roots as it spreads.

The plant can withstand winter. It will die back and not look pretty, but it usually rebounds in the spring. The only unforeseen circumstances are root rot, pests, or other diseases that might take hold if you leave the dying foliage to rot. Shear the entire plant at the soil level at the end of the growing season to maintain its health and growth habits.
Leaving dead leaves and growth puts the plant at more risk of pests and disease.

Harvest and Storage

When to Harvest/Number of days to Maturity: depending on your region, like in late October is still good.

How to Harvest: Using sharp shears, can cut as late as possible even after a couple of light freezes. Late October in NW Missouri.
Make sure you harvest after any dew or rainfall has evaporated. They should be dry when you cut them and bring them in (helps to eliminate any potential mold.) Cut the stems as long as possible, giving you more potential in arrangements.
Multiple drying ways…place some with longer stems into short dry bud vases and enjoyed them all through the house, while they were working hard drying, another 100 or so leaves on a table laying out flat, turn some of the leaves upside down with the spine of the leaf up (prevent those from curling in while drying). Some can lay "right side up" (the leaf spine on the table) so that as they dried, the edges of the leaves would have a bit of natural curl to them. You can leave several multi-leaf sprigs intact while drying. When you are ready for a project, you can always pull them apart. Store them loosely in a sturdy box with plenty of space. (over time they can get brittle.)

Optimal Storage Temperature and Conditions: It dries beautifully and retains its signature soft silvery sage color and the soft fuzzy texture. Date and store. You'll find that by making tea, it tastes like a combination of apples and pineapples.The leaves, deep fried in batter, are known as 'lambari' or fried fish in Brazil. Use them young in salads, steamed or stir-fried.

Seed Saving: It self seeds and spreads by roots.

Notes:
Lamb's ear has many cultivars, here's a few of the most common: Big Ears or Helen Von Stein: popular variety for its bigger leaves; can go years without blooming; has relatively good disease resistance.

Silver Carpet: another cultivar that does not flower often; stays short at 4 to 6 inches tall with a spread of 9 to 18 inches; its dimensions make it a good ground cover. / Cotton Boll: gets its name from the fuzzy, wooly formations on its flower stalks where flowers should emerge but often do not; instead, it yields interesting-looking cotton bolls.

Don't confuse Lamb's Ear with Mullein (which qualifies as an invasive weed) that grows in zones 3 through 9.

It's A Natural Bandage This incredible plant is a natural source of antibacterial, antiseptic, anti- fungal and anti-inflammatory properties.

Lamb's Quarters

Description: Lamb's quarters is a fast-growing type of herbaceous plant that springs up all over North America, Europe and Central Asia. Though it's often mistaken for a weed, lamb's quarters has historically been foraged and cultivated as a source of food.

Lamb's quarters may also be referred to as pigweed, goosefoot and wild spinach in some guidebooks. It's an annual plant as a member of the Amaranthaceae family (in the genus Chenopodium).

Lamb's quarters is identifiable by its bushy leaves and slender, upright seed heads, which make it easy to distinguish from ordinary weeds. These seed heads emerge from the center of mature plants with the foliage bunched together closer to the ground. The light green and white leaves on lamb's quarters are goosefoot shaped when they're younger, and grow to be diamond shaped as they age.

Growing Instructions

Optimal Time/Temperature for Germination: Forage wild-growing plants only.

Forage for wild growing plants and avoid gathering plants in commercial and residential areas that might have been sprayed with pesticides or fertilizer. These may contain traces of harmful chemicals that can make you very sick should you ingest them. It's safest to stick to herbs that you come across in secluded, out of the way areas. Steer clear of plants that you find sprouting in or near mulch or manure that might contain herbicides, pesticides and medications that were fed to cattle.

Optimal Soil Conditions: Conduct your search in open fields, on cultivated lands and among thick wild grasses. Pay special attention to the spaces between other flowering plants. Lamb's quarters is remarkably common in temperate climates, so there's a good chance you may even be able to find some growing in your backyard. Lamb's quarters plants favor sunlight, and will often be found just outside tree-lines and in bare, unshaded patches of earth. It can grow either in full sun or in partial shade. The plants can also tolerate drought well. So while selecting the site, consider availability of sun and ensure good drainage system.

Seed Planting Depth, Spacing and Procedure: Very easy to sow. Just scatter the seeds over soil and then mulch lightly with straw or grass clippings. Generally self sows thereafter.

Best Companion Plants: often found growing with potatoes and corn. It has nitrogen fixing qualities and so is considered to be helpful with heavy feeders such as tomatoes.

Crop Maintenance

Moisture Requirements & Solutions: Water the bed and keep it moist until they are started. You can thin and eat the seedlings later once they reach 4-6 inches in height.

Weeding Needs & Solutions: Lambs Quarters is usually considered a weed. In many gardens in temperate regions, Lambs Quarters will appear regularly, and can be an acceptable weed that you can leave to mature in your garden along side vegetables that require companions with nitrogen fixing properties. Generally it is good to keep weeds thinned to avoid too much competition but also to space out plants enough to allow for ease of harvest. Using mulch will help to retain moisture into soil and it will also prevent most of the weeds from taking over the garden.

Feeding Needs/ Optimal Natural Fertilizers: Lamb's quarters plants don't require additional fertilizers if you prepare the soil by adding organic materials into it such as aged manure or homemade compost. They will grow in poor soil and improve it.

Pests, Diseases & Solutions: Pests and diseases are less for growing lamb's quarters plants. It is vulnerable to leaf miners, making it a useful trap crop as a companion plant. It attracts leaf miners while growing near other plants, which might otherwise have attacked the crop to be protected. It is also a host plant for the beet leaf hopper, an insect which transmits curly top virus to beet crops.

Harvest and Storage

When to Harvest/Number of days to Maturity: Look closely to make sure that what you've found is lamb's quarters and not another inedible species.
Older stems often start to develop a reddish or purple coloration. The plant is most abundant in the warmer months of late spring to early fall.

Harvest on a sunny day, when the sun is high enough to dry the morning dew but not so hot as to wilt the leaves. Do not harvest on a rainy wet day.

How to Harvest: You can sometimes determine the age of the plant by examining its stem; young stems are green and firm to the touch, while older stems often start to develop a reddish or purple coloration. The plant is most abundant in the warmer months of late spring to early fall.

One method is to stoop down to get closer to the leaves at the base of the plant. Holding the stem with one hand, use the fingers of your other hand to gently pluck the leaves free. Be careful not to tear or otherwise damage the leaves while you're gathering them. Bring a basket or bucket along with you to collect the leaves you harvest.
Lamb's quarters leaves tend to be small and will shrink up even more when cooked. If you're planning on serving or storing them in bulk, you'll want to gather as many as you can find.

You can also take a few stems with you so that none of the plant goes to waste. Snip the stems a few inches from the soil with a pair of sharp scissors. Trim the smaller offshoots from the stems and scrub them lightly with your fingertips under a stream of cool water to clean them. The stems can be prepared by steaming, boiling or sautéing. When cooked, they have a hearty crunch similar to romaine hearts or broccoli florets.

Because of the natural powdery residue clinging to the leaves of lamb's quarters, a quick rinse won't be enough to clean them. Instead, place them in a bowl and pour in enough cold water to completely cover them (a touch of vinegar or salt in the water bowls for

cleansing is preferred by some harvesters). Swish the leaves through the water and shake off the excess moisture. Pick out and dispose of any leaves that are slimy or mottled.

If you're planning on cooking with the herb right away, press the leaves between a layer of paper towels to wick away as much water as you can or put it through a salad spinner. The leaves will best when eaten right away while they're still fresh. Steam or saute them until they just begin to wilt, or enjoy them raw in a salad of seasonal vegetables. They have a mild and slightly sweet flavor that lends itself well to a variety of soups, stir fries and side dishes. Try substituting lamb's quarters in your favorite recipes that call for spinach, kale, chard or similar greens. Once you've stripped the grains, you can roast them for snacking, grind them to use in flours or boil them and serve them like rice.

Optimal Storage Temperature and Conditions:

The tall, thin stalks of fully grown plants produce a grain that's similar to quinoa. To harvest this grain, simply bend the seed heads over your bucket or bag and give them a good shake. Most of the mature seeds should fall right out so the remaining can be pulled free by hand into the bucket. Some of the seeds will likely still be covered with bits of thin, papery husk. Clear this away by transferring the seeds to a colander or wire strainer and running a stream of water over them. Afterwards, the grain can be eaten or processed safely. To free grains that are still enclosed, crush the seed head between two fingers, then brush away the rest of the chaff and rinse thoroughly.
Scrub away dirt, debris and any insects that might have made their home inside the seed heads.

If you have an unused portion, you can preserve them the way you would spinach or other leafy greens. Wrap them loosely in a plastic bag or layer of paper towels and stow them away in the crisper drawer of your refrigerator. Try to use up the leaves within 3-5 days of bringing them home. You could also freeze the leaves immediately after washing them. Frozen greens will stay fresh for up to a year. Soups, stews and casseroles made with Lambs quarters freeze well.

Ground dried leaves are an excellent nutritional boost when added to stews and soups in winter when greens are scarce. You can also sprinkle dried leaves on food or blend them into a smoothie for a boost of added nutrients, as you would dried parsley or basil.

Seed Saving: Lamb's quarters seeds range in color from a light tan to deep brown or black shades. You can let some plants go to seed then dry on the plant to just shake them over the gravel or ground area in the section designated for growth then date your excess dry seeds for packing and storing.

Like amaranth seeds, dry lambs quarter seeds are a good addition to multigrain bread.

Lambs quarter seeds as super nutritious micro greens in winter is worth experimenting with.

Notes:

Like other so-called "weeds" lamb's quarters are incredibly nutritious. They are high in fiber, protein and is loaded with both Vitamins A and C. Lamb's quarters is also high in manganese, calcium, copper, have a notable amount of iron. They are high in both omega-3 and omega-6 fatty acids. Like spinach and other greens, Lambs quarters contain oxalic acid which increases as the plants mature. Oxalic acid levels in mature Lambs Quarters have been known to rise to levels high enough to make them slightly toxic for grazing animals, that is why deer are rarely seen eating mature lambs quarters.

Traditionally Lambs Quarters are harvested in spring when they are young and tender, and they contain less oxalic acid, which can be both a stomach irritant and can impede the absorption of calcium. Cooking eliminates most oxalic acid. For this reason it is safe to eat the tender tops of mature Lambs Quarters — but go easy if you choose to eat them raw.

Like quinoa, the seeds of lamb's quarters contain saponin, which can also be a stomach irritant. Saponin can also be reduced by rinsing and cooking leaves and seeds.

Lambs quarters have distinctive white leaves near the top of the central leaves, and they are an indication of just how mineral-rich the plant is. The white dust covering the leaves is actually mineral salt that lambs quarters has mined from the soil. The flavor of salt is strong enough that the plant can be dried and used as seasoning, substituting for table salt.

It might be wise to use discernment regarding your intake of the herb if you have a calcium deficiency or you've been prescribed a special diet. This depends on your specific condition. Do research and consult a naturopath to get clarification on whether this herb will help or hinder if you have health conditions and/ or allergies.

Lambs Quarters is an excellent compost amendment or good for "chop and drop".

Young Lambs Quarters is also used as feed for chickens and other poultry.

Lavender

Description lavender (Lavandula) is a welcome addition to any garden, with its beautiful flowers and wonderful aroma. Lavender is a Mediterranean herb, so it thrives in hot, sunny locations. A perennial, lavender grows from 1 to 3 feet (0.3 to 0.9 m) tall.

Growing Instructions

Optimal Time/Temperature for Germination: There are many species of lavender available for home growing. Whether they flourish or fail will depend on the conditions in the area in which you live. The types of lavender sold at your local nursery or garden center will usually be compatible with your area's conditions, though you can check the label on the plant or ask a nursery employee if you are unsure. Lavender plants grow in hardiness zones 5 through 10.

Munstead and Hidcote Lavender are two especially hardy varieties.

The best time of year to grow lavender is fall. Lavender requires low to moderate rainfall and moderate sunlight to thrive when planted, so October's less intense sun and moderate rainfall make it an optimal season for planting lavender.

Optimal Soil Conditions: Choose a spot in your garden where the plant will receive full sun for at least 8 hours a day. The spot should also be as sheltered as possible to protect the plant from wind. Dampness is the enemy of lavender, so your most important consideration should be to choose a location where the soil is well-drained. The soil should be light, fluffy and well-aerated for optimum lavender-growing conditions. Lavender grows best in slightly alkaline conditions, with an ideal soil pH level of between 6.7 to 7.3. If necessary, you can add a little lime to increase alkalinity (The amount you add will depend on your type of soil and the test recommendations.)

To improve soil's drainage, you can mix in a little silica sand before planting. Silica sand offers many benefits: it drains well, does not cement, and is very reflective, which helps reflect sunlight onto the plant. This is especially helpful in colder and wetter climates. Alternatively, try planting your lavender on a raised bed, at the top of a slope or beside a wall to maximize drainage. If growing in a pot, consider setting the pot upon a bed of stones or gravel to optimize drainage. If growing in the yard, prepare the soil to receive the lavender and optimize its growing conditions by placing two heaped handfuls of 1-inch (2.5-cm) round stone, along with a 1/2 cup (118 mL) total of lime, well-composted manure and bone meal into the hole. Mix well, then cover this blend with a light layer of soil. The stone will help with drainage, the lime will alkalize the soil, while the bone meal and fertilizer will help to get your lavender plant off to a good start.

Seed Planting Depth, Spacing and Procedure: While it is possible to grow lavender from seeds, this is not recommended as the seeds require scarification and chilling and can take nearly a month to germinate. Best grown from transplants - Lightly prune your lavender before planting. This will give the plant shape, ensure good air circulation through the stems, encourage new growth, and prevent the center of the stems from becoming woody, which is a common problem with lavender.

Good airflow is especially important if you live in a more humid climate. You should water the lavender plant in the pot you bought it in, at least an hour before planting. This will ensure that the roots are hydrated, but not damp, before going into the soil. Use a trowel to dig a hole in the location you have chosen for your lavender.

The hole should just be deep enough and wide enough to contain the roots when you spread them out. Remove the lavender plant from its nursing pot and gently shake to remove any excess soil from the roots. The lavender should be planted into its new home with bare roots, to ensure it quickly and easily adapts to its new growing environment. Carefully place the lavender plant into its prepared spot and rest it on a layer of soil slightly above the stone blend you mixed earlier. Make sure the roots do not come in direct contact with the blend. Fill in any extra space around and above the lavender's roots with soil, lightly patting it into place around the base of the stems.

If you're planting more than one lavender plant, leave about 36 inches (91.4 cm) between each plant. This will guarantee good air circulation and allow the lavender space to grow. If you're planting the lavender in a pot or container, choose a very large pot — the root system for lavender is much larger than the actual plant.

Best Companion Plants and Plants that Hinder: Many gardeners have reported that gophers leave all of their lavender plants well alone. They may well dislike the fragrance. Do not plant mint, camillias, hostas, or impatiens nearby. Good companion plants are echinacea, roses, yarrow, sedum, alliums, African daisy, zinnia, gaillardia, rosemary, thyme, sage, and oregano.

Crop Maintenance You should prune your lavender plant about once a year, preferably in spring before the new growth begins. You should prune about one third to one half of the plant when it shows new spring growth. Use pruning shears or hedge trimmer to achieve a tidy, rounded shape. New growth looks like long, thin legs sprouting from the leafing branches. The plant will also begin to form blooms. This is also a good time to fertilize the plant. Pruning your lavender will encourage new growth and stop the plant from breaking open and sprawling. Just make sure not to over-prune your lavender as this may kill new growth altogether.

Moisture Requirements & Solutions: As mentioned before, dampness is the enemy of lavender and if the roots of the plant become excessively damp, it will kill the plant quicker than any drought or freezing temperatures. In fact, over-watering new lavender plants in spring is the main cause of growth failure. Once the lavender is planted, deeply water it every 7 to 10 days.

To achieve the proper level of watering, make sure that the soil dries between each watering, however, the plant itself should not be allowed to become dehydrated.
If you are growing lavender in a Northern climate, you will water the plant *very* sparingly until the summer when temperatures can skyrocket and dry out the soil. You will then want to begin watering the plant every 7 to 10 days. If you're growing lavender in a pot, make sure the pot has excellent drainage to prevent water from pooling at the bottom.

Weeding Needs & Solutions: You can prevent weeds from growing around the base of your lavender plant by covering the soil with a thin layer of mulch. Use a light-colored mulch, such as coarse sand, gravel, or oyster shells. Mulch will also help to protect the plant's roots from winter frosts. Do not use wood mulch, which will retain moisture and can lead to root rot.

Feeding Needs/ Optimal Natural Fertilizers: Lavender is a fairly low-maintenance plant and will only need to be fertilized once a year, if that. Use a light top dressing of mixed compost and bone meal, sometime in early spring. An ideal time to fertilize your newly planted lavender is after the first watering. Allow the soil to dry, then apply the fertilizer.

Pests, Diseases & Solutions: The two most common pests that affect the lavender plant are whiteflies and spittle bugs. Both can be removed by hand or with a steady stream of water. Check the lavender periodically for reinfestation. Aphids can spread a virus known as the Alfalfa mosaic virus which affects growth and blooming of the plant. Remove any affected foliage and burn it. Be sure to sterilize all gardening tools with disinfectant, chlorine bleach, or isopropyl alcohol to stop the spread of the virus, too.

Harvest and Storage

When to Harvest/Number of days to Maturity: The best time to harvest fresh lavender is when the bottom flowers of each stem are just beginning to open. This is when the lavender is at its most vibrant and fragrant. Cut the flowers at the base of the stems, near the foliage. Then, Prune the plant back to the new growth leaves. This may encourage your plant to bloom a second time, in the fall.

How to Harvest: If all or most of the blooms have opened on the lavender plant, then it is too late to harvest for herbal purposes. If you plan to dry the lavender, harvest when about 3/4 of the blooms have opened. The best time of day to harvest lavender is in the early morning. This will give you the highest concentration of oils inside the plant so your lavender harvest smells or tastes great. If you wait for the later part of the day, the sun may evaporate some of the oils inside the plant. They'll still smell good, but they won't be as potent as they were earlier in the day.

Optimal Storage Temperature and Conditions: Run your lavender flowers and stalks under cool water, then submerge them in water to remove any dirt or pests. Lay them out on a paper towel and pat them dry to clean them off. Rinsing your lavender is super important if you're going to eat it. If you're using it for decorative purposes or you're drying it out, you don't need to worry about it as much.

To dry lavender, bundle about a hundred of the flowers together and tie the bundle with a rubber band. Hang the bundle indoors in a warm, dark and dry location, suspended upside down from a nail, for about 10 to 14 days. You can use a food dehydrator, hang it upside down to dry in a cool, dark spot in your home, or dry it outside on metal screens in the sun. If you do sun-dry it, it may lighten the flowers just a bit as they dry out. If you opt to hang your lavender to dry, use twine or twist ties to gather the stalks in bunches and hang the bunches upside down off of hooks or nails. Retie the stocks as necessary to keep them together, since they will shrink while drying. Drying your lavender indoors can take a few weeks, while drying them in the sun only takes a few days. If you wish to remove the dried lavender from the woody stems, you can roll the bundle on a metal screen placed over a bucket. This is called "garbling" the lavender.

You can use a plastic bag, a glass jar, or a plastic container with a lid to keep your lavender fresh. Seal it up tight so that air can't get into it before you put it away.

Make sure that your lavender is really dry before you put it away! Storing wet lavender can cause mold to develop, which will ruin the scent of your lavender. Dried lavender usually keeps its scent for about 1 season.

Storing the lavender away from sun and heat will help it last as long as possible, and it will preserve the natural flavor and scent of the flowers as well. You can store your lavender in your kitchen pantry, a cabinet, or the basement (as long as it doesn't get below freezing). If you're keeping your lavender fresh, you can fill up a vase with water, then put your bundle in it. This isn't a long-term solution, but it can keep your lavender fresh for a few days until you're ready to use it.

Seed Saving: to collect seeds while drying, you can Place or tie a brown paper bag around hanging lavender stalks to catch any seeds that drop out. Shake the lavender in the bag, thrash it or rub it to release seeds after several days of drying if enough seeds have not already fallen out. Separate the small, dark lavender seeds from other plant parts using a screen through which the seeds will pass but larger plant parts get caught or by blowing the plant material gently away from the seeds. Transfer the seeds to an envelope or lidded jar and label with information about the parent lavender plants and the collection date. Store the seeds in a cool, dark and dry place until planting.

Notes: Be careful when cooking with lavender. Too much in your food can taste a bit like perfume, so go slowly at first.

To decorate your house with lavender, place the flowers & roots in a vase without water, otherwise, the flowers fall off faster and makes the stems mushy.

Lemon Balm

Description: Lemon balm, is a perennial herb, so it will die down in the winter and regrow from the roots in the spring. Don't worry if your plants die in the cold weather. It's also known as Melissa, bee balm, common balm, or mint balm and is a popular herb used to promote health and well-being. It is a calming herb that belongs to the mint family. Lemon balm has lemon-scented, oval, toothed leaves that are heavily veined or quilted from 2 to 3 inches long arranged opposite one another on four-sided stems. Leaves are coarsely toothed with a bristly surface. As its name implies, it has a lemony flavor that makes it ideal to use for tea, salads, herbal infusions, and other dishes. It is loved by bees and therefore an important herb to grow near your honey bee hives.

Growing Instructions

Optimal Time/Temperature for Germination: Lemon balm grows best in cooler weather, so it's best planted in the spring after the last frost. However, you can also plant it in later summer when the weather starts to cool. You can also grow lemon balm indoors. Choose a large pot that's at least 6 to 8 inches (15 to 20 cm) deep and wide, and keep it in a location where it will receive significant sun during the day. Growing zone is 4 to 9.

You can plant lemon balm from seeds or seedlings, which are young plants that have already sprouted stems. In most cases, you'll have easier time using seedlings, though lemon balm seeds are fairly hardy and usually sprout without much trouble. It typically takes 6 weeks for lemon balm seeds to develop into seedlings. If you or a friend has an existing lemon balm plant, you can harvest a shoot from the plant and place it in a glass of water. Change the water daily, and once the shoot begins to root, you can plant it outdoors or in a container.

Optimal Soil Conditions: Lemon balm grows best in a location that receives full sun. However, it is partially shade-tolerant, so it can do well in a spot that receives some shade in the afternoon. Even if you plan to grow the lemon balm outdoors, you may want to plant it in a container. That way, you can easily move it around your yard or deck to find the ideal spot.

When it comes to choosing soil to grow the lemon balm in, opt for a rich, well-drained clay or sandy loam. Ideally, you want the soil to have a pH between 6.0 and 7.5.

Soilless potting mixes, vermiculite, perlite, coco peat, and rockwool are also ideal mediums for growing lemon balm as long as you fertilize them regularly.

Seed Planting Depth, Spacing and Procedure: When it comes time to place the lemon balm in the soil, proper spacing is key because it can spread quickly as it grows. Place seeds 1/4 inch (0.64 cm) beneath the soil and seedlings at the same depth that they are in their containers, and space the plants so they're at least 12 to 15 inches (30 to 38 cm) apart. You may need to thin the seedlings as they grow so there is enough space between the plants.

Best Companion Plants: Plants that pair well with lemon balm in a garden or container include broccoli, squash, cauliflower, and other cabbage family plants. The fragrance of lemon balm helps deter insects that attack cabbage family crops and also masks the smell of cabbage. Plant lemon balm with hollyhocks, angelica, and nasturtiums. Lemon balm attracts honeybees; plant it near fruit trees to aid pollination.

Crop Maintenance

Moisture Requirements & Solutions: Lemon balm requires soil that is consistently moist for healthy growth. It's best to water it on a weekly schedule, making sure to water the plants evenly so the surface is moist but doesn't have any puddles. If you live in a dry climate or are experiencing particularly hot, dry weather, you may need to water the lemon balm twice a week. Check the soil daily to ensure that it is still moist.

Weeding Needs & Solutions: . To keep the soil moist and provide additional nutrients, it helps to add mulch around the lemon balm once a year. Opt for an organic mulch, and spread approximately 2 inches (5.1 cm) of it around the base of the plants.

Organic mulch includes compost, leaves, grass clippings, wood, and bark.
you can add mulch to your plants each spring or each fall.
Keep an eye on the mulch around the plants. If it's washed or blown away, you may need to add it more than once a year.

Feeding Needs/ Optimal Natural Fertilizers: It is suggested that gardeners don't fertilize lemon balm much as too much fertilizer can cause the herb's scent to fade. However, since lemon balm is harvested for its leaves, a little bit of fertilizer can encourage more growth. You can also amend the soil with compost cottonseed meal or bloodmeal.

Pests, Diseases & Solutions: Be careful not to overwater the lemon balm or powdery mildew may develop. Lemon balm can be vulnerable to diseases such as verticillium wilt. To keep your plants healthy, cut away any dead flowers or leaves when you spot them. It's also a good idea to keep healthy leaves trimmed to ensure effective air circulation around the plants. Spray plants with compost tea during the season; compost tea is a natural fungicide.

Harvest and Storage

When to Harvest/Number of days to Maturity: You can remove sprigs as soon as the plant starts growing, though it's usually best to wait until it's grown at least a few stems. The best time to harvest is just before the flowers open. (Lemon balm blooms throughout the summer and into fall.)

How to Harvest: Lemon balm rejuvenates itself well, so whenever the plants have gotten too large, cut them back to ensure that there's still space between them. To harvest lemon balm for tea and other uses, simply pinch off sprigs from the plant.

Optimal Storage Temperature and Conditions: Fresh lemon balm leaves can be tasty in salads, smoothies, and dishes, but you may want to dry some for longer-term storage. Thoroughly washing the lemon balm ensures that your herbs will be free of any dirt or insects from the garden. Line a paper towel or clean dish towel with the lemon balm and gently pat it dry with another sheet of paper towel or cloth.

To dry the leaves, gather 5 or 6 stems together and tie them with kitchen string. Hang them in a warm, dark location for 1 to 3 weeks. You'll know that the leaves are ready when they feel dry and brittle to the touch. After you take the leaves down from drying, untie them from their bundles. Remove the leaves from the stems, but keep them in large pieces to retain their flavor. Place them in an airtight jar or other container for storage. Avoid plastic bags for storing the leaves because they are prone to condensation that can damage the lemon balm. Store it in a cool, dark place. Whole dried plants retain their essence longer than crumbled or ground ones, so hold off on crumbling it up for tea or seasoning until you are ready to use it.
Another way is to spread the lemon balm out on the tray of the dehydrator. You should have a thin layer of plants and leaves. To avoid overcrowding, leave a little space between the plants. You do not want thick layers or clusters as this will prevent the machine from drying effectively. . Lemon balm is a tender herb and will do best on a low setting. Set the dehydrator's temperature on its lowest setting 95 °F (35 °C) and allow it to dry for 12–18 hours.

One more way is to freeze- fill each ice cube tray 2/3 full and top with cold water and should be good for a year.

Seed Saving: Deadhead plants to prevent self-sowing. Lemon balm spreads by underground roots. To keep lemon balm from becoming invasive, set it in the garden in a bottomless container that will keep the roots in place. Remove unwanted plants before they become established.

Notes:

Not only do its leaves have a rich, zippy, lemon smell, but they also contain compounds that can repel mosquitoes.

It is important to note that lemon balm is only added at the end of cooking time or the aroma is gone.

Cut plants back by half after flowering to encourage a second crop of leaves and a compact form.

Lemon balm, generously rubbed on the inside of new bee hives will help attract the bees into the hive to re-populate with a new queen.

Lemongrass

Description: a rhizome of the Family: Poaceae (Gramineae) (Grass), is a clumping type fountain grass. It is not a running type grass, so it is non-invasive. The clump can grow 3 to 4 feet across and up to 5 feet tall. Also attractive in containers, it can be grown anywhere as an annual. One caution: the blades are very sharp, as with many grasses… that's why they call them blades! So, when pruning or tending to your Lemongrass, gloves are useful. Always rub the leaf from the bottom up to prevent being cut by the blade. This great-tasting herb contains a pungent oil, which is what acts as a pest repellent. The name of this oil is citronella.

Growing Instructions

Optimal Time/Temperature for Germination: Lemongrass is a tropical plant that freezes to death where winter temperatures drop below 15F (-9C). In all climates, potted plants are easy to keep through winter indoors. Sow seeds indoors in late winter. Transplant outdoors only when night time temperatures are steadily above 10°C (50°F). Lemongrass slows down in winter and doesn't put out as many new leaves each week. The plant is still green, but its leaves will look a bit bedraggled after a long growing season. You'll think the plant has died as the leaves turn brown in winter. But not to worry! Lemongrass roots are typically hardy in zones 8b and 9. With a frost blanket or heavy layer of straw mulch over the soil, the plant has a good chance of returning year after year (even when the leaves die back). The arrival of summer will spur your lemongrass to grow vigorously again, and new leaves will fill out the plant more.

Optimal Soil Conditions: Soil pH preferences: Slightly acid (6.1 – 6.5) Neutral (6.6 – 7.3) Slightly alkaline (7.4 – 7.8) Start with a purchased plant in spring, and grow it in a pot until the soil warms in early summer. You can also root a stalk from the produce market in water. Plant lemongrass in a warm, sunny spot that is convenient to water having any well drained soil. Plants may rot in poorly drained clay soil. When grown in a suitable 3 gallon container, you may still need to shift the plant to larger pot since when the roots become crowded, they can cause clay pots to crack.

Seed Planting Depth, Spacing and Procedure: If doing rows, try 1' 11" (60cm) apart and 2' 11" (90cm) for a row gap. Press the seeds gently 5mm (1/4″) into pre-moistened, sterilized seed starting mix and use seedling trays with plastic domes or containers sealed inside large plastic bags. You can try bottom heat from a seedling heat mat to maintain a soil temperature of 21°C (70°F). Keep seed trays or containers in a dark room or cupboard. Seeds should germinate in 5 to 21 days. The trick is to maintain a moist, not wet, environment. Once seedlings appear, remove the dome or plastic bag, and move them into full sun or beneath strong, full spectrum, artificial light. Thin or transplant shipped plants to 12 inch apart when seedlings are 1-2 inches tall.

Best Companion Plants and Plants that Hinder: As many insects and pests are attracted to sweet and juicy smells produced by flowers, the sharp and pungent citronella odor of this herb has the opposite effect on pests. It helps in keeping pests and insects away from your other plants. Lemongrass doesn't harm those nuisance pests; it helps in deterring them away from your property and home.

Pests that Lemongrass repels are mosquitoes, flies, ticks, ants, and gnats. (you can crush its leaves, rub the leaf and squeeze the stem on your skin, or cut the stems and leaves.)

Crop Maintenance

Moisture Requirements & Solutions: weekly watering in the summer and sparingly to keep it alive in winter months so it'll kick back into action in spring.

Weeding Needs & Solutions: Remove weeds and work organic matter into the top 6-8 inches of soil; then level and smooth. Thoroughly water and apply a light mulch layer on top of the soil (1-2 inches) to conserve water and reduce weeds.

Feeding Needs/ Optimal Natural Fertilizers: Try a monthly balanced soluble fertilizer since growing season has a nitrogen requirement. Gardeners whose plants stay green all winter just need to maintain the shape of the shrub. Light pruning of the leaf tips can be done throughout the year, but a heavy pruning should be done in spring to give your lemongrass a chance to grow stronger and healthier. To begin, rake out all the dead leaves under the plant. If this is your first time pruning, you might be surprised by how much organic matter accumulates under there so pull out any brown outer stalks as well as brown or rusted leaves. You may have to reach in between the clump to get all the leaves out (but leave the inner stalks intact, as those are the newer ones). Generally, give a light tug and anything dead comes out easily. Once you've removed all the brown bits, use hedge shears to cut back the leaves. Just do a straight cut across, trimming one section of leaves at a time (similar to trimming hair bangs).

Pests, Diseases & Solutions: Maintaining your plant simply by harvesting it, helps reduce the spread of pests and diseases. For yellow sugarcane aphids, attract natural predators like lady bugs and wasps that eat them or wash them off by spraying. For grass bagworm, try hot pepper or insecticidal soap. To prevent rust fungus infection which favors warm temperatures and high moisture, water plants at soil level and not from above the leaves.

Harvest and Storage

When to Harvest/Number of days to Maturity: Lemongrass can be harvested at any time once the stalks have reached 1/2 inch (1.3cm) in diameter. (In late summer, dig away an outer stalk, cut back the leaves to 3 inches (8 cm), and plant it in a small container. Grow it through winter in a sunny windowsill, providing only small amounts of water, and replant outdoors the following spring.)

How to Harvest: Simply harvest a few stalks from your plant, making sure that your harvested stalks have roots. Use secateurs to snip whole stalks from the base of the plant as needed. Leave the plant to develop some thick stems before starting to harvest. The most tender leaves are found close to the stems.

Optimal Storage Temperature and Conditions: Lemongrass dries well for use as a tea, and whole stalk segments can be bundled and frozen for use in soups and curry paste all winter long. Various chicken and seafood preparations are flavored with the lemony flavor of Lemongrass. The part that is used is the firm lower part of the stem. The whole stem is cut at the soil line, the leafy parts are trimmed off while the rest is used to flavor food.

Seed Saving: Occasionally, in frost free areas, you might see some attractive airy flower heads which turn into seeds. Lemongrass may never seed out from seed growth, but the tall flowers stalks and succeeding seed heads add interest to the garden.

Notes:

You can dig up healthy stalks with the roots intact and replant them elsewhere in your garden to thin out the clump. If you're doing some major dividing, you can even pot up a few stalks in soil to give as gifts. (keep them tidy)

In pots or in the garden around a patio or deck, Lemongrass can help repel mosquitoes. The essential oils citral and citronella have shown to be effective as insect repellent. Citral is the key component that gives the lemony aroma and taste in several herbal plants such as Lemongrass (Cymbopogon citratus), Lemon Balm (Melissa officinalis) and Lemon Verbena (Verbena officinalis.) The stem is crushed or pounded and added in large pieces during the cooking process. Then, the pieces are removed so they are not eaten. A 2 – 4 inch piece of Lemongrass will impart a very lemony flavor to a stir-fry. Try placing a crushed piece of Lemongrass stem in a pot of rice using chicken broth instead of water and cook as usual. You will have a lovely, lemony rice to serve with chicken or seafood! Add some Lemongrass to a chicken soup for an Asian twist on an old favorite. Just don't forget to remove the thick pieces of the stem before serving !

The leafy parts of the Lemongrass stalk can be used to make a delicious and refreshing tea. You can use the leaves fresh or dried. If fresh, use about 2 teaspoons chopped leaf per cup of tea. If dried, use about 1 teaspoon per cup. Lemongrass blends well with green tea, chamomile, mint, rose hips, hibiscus and holy basil.

More uses are groundcover, culinary, will naturalize, suitable as annual , and medicinal.

According to the ASPCA, lemongrass is toxic to dogs and cats.

Licorice Root

Description: Licorice root refers to the root of the plant Glycyrrhiza glabra, a European perennial legume that grows about 5 feet tall. A variety native to the U.S is called *Glycyrrhiza lepidota*, 9less intense in flavor). *Glycyrrhiza uralensis* is also known as Chinese licorice. It has a lovely aniseed taste and multiple medicinal uses as well. (Some plants have the word "licorice" in the name, but aren't actually licorice root. For reference, licorice *root* comes from the *Fabaceae* family. However, licorice *plants* come from the *Asteraceae* family and is a type of foliage.) Be sure to double- check your seed packets before making a purchase.

Growing Instructions

Optimal Time/Temperature for Germination:

Licorice is a pretty hardy plant, and it isn't as sensitive to changes in the weather as other plants are. Plan to sow your seeds sometime in the late spring months, or during early autumn. Licorice seeds are pretty finicky, and need to be "treated" with water ahead of time. Pour a small handful of seeds into a bowl of water, and let them sit for a little while—this will soften the seed casing and make them more likely to germinate. Your licorice root is much more likely to germinate if you soak the seeds ahead of time. Soak a clean paper towel with tap water and wring out the excess.
Spread your seeds on the moist paper towel and fold it in half. Then, slip the seeds and paper towel into a sealed plastic bag. In order to germinate properly, licorice root seeds stratified—this is a fancy term for soaking and chilling your seeds. Slide the bag into the refrigerator, and let it chill for at least 3 weeks. During that time, check that the paper towel is still damp—if necessary, remoisten it with a few drops of water.

If any of your seeds look like they're germinating, or sprouting, remove them from the bag and plant them right away. Licorice thrives in zones 6-11.

Optimal Soil Conditions: Search for an area outside where your licorice root can either get complete or partial sun throughout the day. Licorice root takes a long time to grow and mature, so pick a place that gets plenty of sunlight throughout the year. In America, licorice root grows naturally toward the western part of the country. Licorice root seeds do best in soil that's 68 °F (20 °C). Grab a handful of soil from your planting area and see if it feels gritty and crumbly—this is a good sign that your soil is sandy. If it's not sandy, dig up a large pit that's as deep and wide as 2 gardening spade blades put together. Fill this pre-made pit with planting compost, so your plants have plenty of wiggle room to grow. Licorice root thrives in a planting area with great drainage

Grab a pH test kit from your local gardening store or nursery, and dig a small, 4 in (10 cm) into the soil. Fill this hole with distilled water, and place the testing probe in the water to get a reading. If the soil is too acidic, sprinkle lime or wood ash over the soil.
Typically, licorice root thrives in soil with a pH that's anywhere between 6.5 and 8.

Seed Planting Depth, Spacing and Procedure:
Licorice root is known for developing really expansive, wide roots. With this in mind, don't plant your seeds directly next to one another. Instead, give them a lot of wiggle room, so they don't bump into each other as they grow. Plant your seeds at least 2 ft (61 cm) apart and bury your seeds down in 2 in (5 cm) of soil. Don't be discouraged if some of your licorice root seeds don't yield a crop. This plant is pretty finicky, and doesn't always grow. To be safe, plant multiple seeds—at least 1 of them is bound to sprout and mature.

Best Companion Plants and Plants that Hinder: Companion plants are Marigolds, Marjoram, Rosemary, Lettuce, and Zinnia. Do not plant Onion, Leek, Garlic, Broccoli, Cabbage, and Cauliflower nearby.

Crop Maintenance

Moisture Requirements & Solutions: In its native habitat, licorice root flourishes near riverbanks. With this in mind, soak the soil with water every day. Touch the soil with your finger each day to see if it's dry to the touch—if it feels dry, douse it with a little more water. During the winter months, you don't need to water your licorice plant as much. Check the soil each day to make sure it's still moist.

Weeding Needs & Solutions: Pick up a bag of generic mulch and spread a thin layer over the surface of the soil. This will protect your plant from weeds, and will also keep the soil nice and moist as your licorice root continues to grow.

Feeding Needs/ Optimal Natural Fertilizers: Dig in fertilizer before the initial planting of the licorice seedlings. After that, you can apply a nitrogen fertilizer every 6 weeks.

Pests, Diseases & Solutions: Powdery mildew is pretty common on licorice root plants, but it's nothing to worry about. Stir 1 tsp (4.8 g) of baking soda into 1 US qt (950 mL) of water, and transfer the mixture to a spray bottle. Spritz this mixture all over the plant to get rid of the fungus completely. Rabbits are known to sabotage licorice roots so try to keep them out of this part of the garden.

Spider mites, tiny pests, chew through leaves, leaving them pale and speckled. The first sign of infestation you may notice is their thin webbing. Spider mites rapidly increase when conditions are warm and dry and can sap the life out of plants. Blast them off plants with a strong spray of water and then use neem oil or a sulfur spray to keep them away. (ensure all weeds are cleared away from the base of the licorice plant because the mites may be hiding in there.)

Harvest and Storage

When to Harvest/Number of days to Maturity: This plant is low-maintenance and easy to take care of, but it's a commitment because most licorice root takes at least 2 years before it's mature enough to harvest. Once your plant is at least 2 ft (61 cm) tall, you'll know it's ready for harvesting. Grab a needle-nose spade and dig up the entire root, which will look like a long, woody stem. You can continue to harvest your plant as it grows over the years!

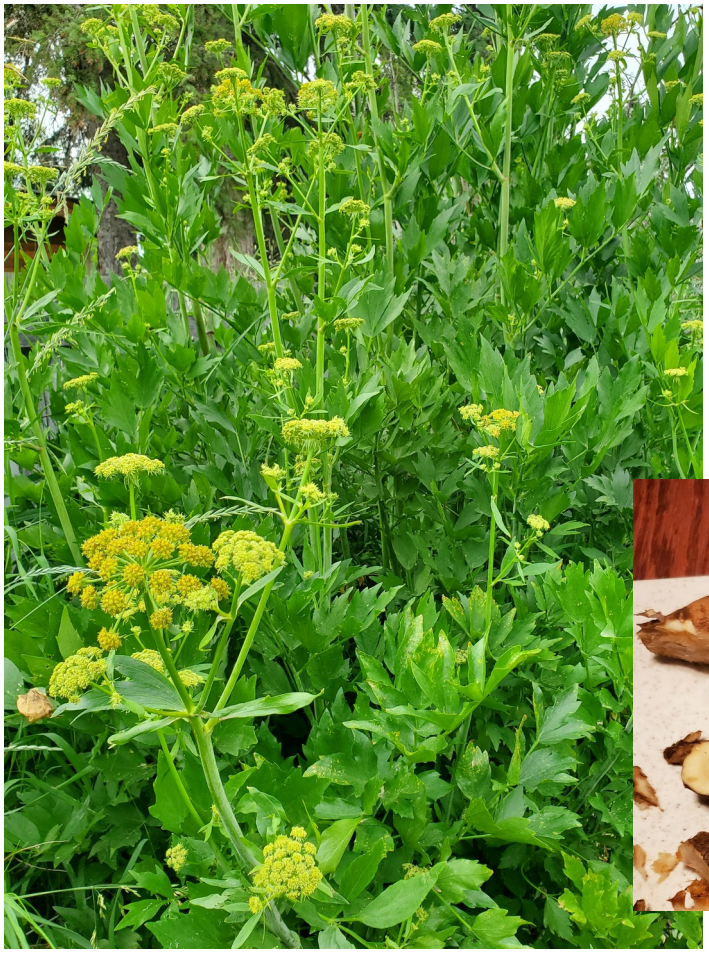
Growing licorice is a long term activity. Some people say wait two years for the plant to develop roots big enough to use, others say four years. For a small family garden, two years is sufficient. Don't wait longer than four years or the roots become woody and unusable.

When the tops have dried in the fall cut them off and discard in your compost heap if you have had no pest issues. When you're ready to harvest, dig out the roots, and save the biggest one or two to put back in the garden. (Licorice root is very hardy, and tends to keep growing back even after you've harvested it. If you aren't a fan of long-term plants, then licorice root may not be the crop for you.)

How to Harvest: One preferred method is either growing from cuttings or using rootstock to replant. If you are careful when harvesting the roots, you can use some for replanting next time. Just be careful not to damage the main root when harvesting and replanting. Roots for planting need at least one growth bud to be successful. By leaving any root in the soil, it will grow a new plant. However, lots of small bits of roots makes for lots of small plants so perhaps intentionally replant a big root from a harvested plant.

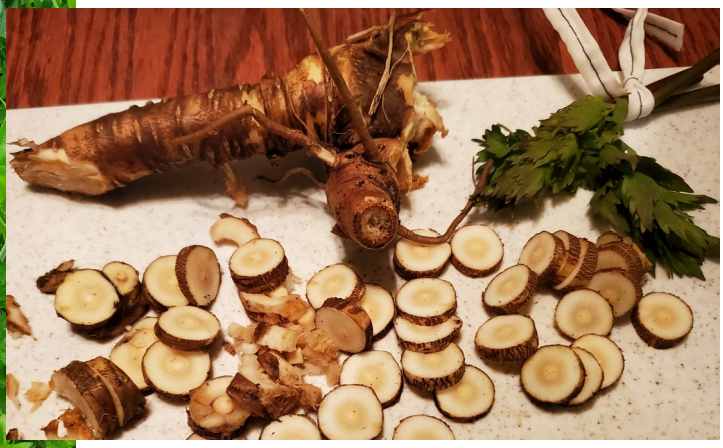
Optimal Storage Temperature and Conditions: For storage, cut the roots into smaller chips and let them air dry in a warm, dry area. Depending on the chip size and the humidity, it can take weeks or months, but be patient, it's worth it! If you don't want to air dry your licorice, add water to the fresh roots and boil them down until you get a black syrup. You can use this to flavor Asian dishes, pour on ice cream or anything else you think would benefit from a sweet licorice syrup. It makes a nice tea too. Some people just chew on the dry chips for a sweet treat.

Lovage



Description: Lovage is an herbaceous perennial that grows 3 to 6 feet tall and with a 32 inch spread. As part of the Apiacaea family, it is closely related to carrot, celery, and parsley. It grows in mounded clumps, stems rise above foliage, topped with sprays of tiny yellow-white flower umbels that bloom mid to late summer. The glossy compound leaves that are divided grow from the thick stalks.

It looks like giant celery.



Photos by Rebecca McCarthy

Growing Instructions

The best way to get lovage is to find a gardener with a well established lovage patch and get permission to dig out a piece to transplant. Most gardeners with lovage will be happy to share a piece as it is plentiful and establishes very quickly. Heritage lovage patches can be found growing around the foundations of old homesteads. Lovage grows best in zones 4 to 8 and to zone 3. Lovage tolerates cold and is hardy to -5 degrees F (it's less tolerating of heat). Stratify seeds 1 to 2 weeks and sow indoors 5 to 6 weeks before the date of last frost. Seeds will germinate in about 14 days.

Optimal Soil Conditions: Plant Lovage at the back of the garden or in another spot where it can be a backdrop and left undisturbed. Give it lots of space as it gets large and multiplies to form a patch. Sun and well-drained soils are the key to growing lovage. It requires soil with a pH of 6.5 and sandy, loamy soils. You can also grow lovage in a pot 12 inches wide and deep.

Seed Planting Depth, Spacing and Procedure:

Sow seed on the surface of soil and dust with sand. The seeds may also be sown outside in late spring when soil temperatures have warmed to 60 degrees F (16 C). Sow seeds outdoors ½ inch deep. Space plants 18 to 24 inches apart. Grow one lovage plant for culinary use and grow one plant for preserving.

If transplanting seedlings to garden make sure night temps are at least 40 degrees F. Lovage has a taproot so transplant seedlings into the garden before the taproots are well established.

Best Companion Plants and Plants that Hinder:

Lovage has a reputation as a good companion plant for potatoes and other tubers, root crops, yams, taro, and artichokes. It should be arranged in the vegetable garden to form the best alliances and make their growth better and healthier.

Plant lovage with fennel, hyssop, and catmint. Lovage can be used as a trap crop to lure tomato hornworms away from tomatoes and the greenish-yellow flowers attract beneficial insects to the garden.

Crop Maintenance

A well established lovage plant is low maintenance.

Remove any flowers that appear as this will help them grow bigger roots instead of tall leggy stems and leaves. Removing flowers also encourages bushy growth and continuous leaf production. Do not till around Lovage as any pieces of root will spread the plant and it can take over. In some circumstance it may be necessary to harvest roots from lovage every three to five years to keep it from getting too large.

Moisture Requirements & Solutions:

Keep the soil evenly moist. The best watering time is in the morning because it helps keep their leaves from wilting and dying. Lovage plants should be watered about once a week unless there hasn't been any rainfall or temperatures have reached 100°F (37.8°C) during the day for two consecutive days. Once lovage is well established, it has a very deep tap root so it doesn't need as much watering and no watering at all in good conditions with regular rain fall.

Weeding Needs & Solutions:

Lovage is large enough when established that it is not easily overtaken by weeds. Mulch lovage with ½ inch of compost in spring. Lovage dies back in winter so protect the roots with mulch.

Feeding Needs/ Optimal Natural Fertilizers: Give plants compost tea or dilute fish emulsion a few times during the growing season. Replenish the soil each spring by adding aged compost or a commercial organic planting mix.

Pests, Diseases & Solutions: Leaf miners (small maggots) which tunnel inside leaves. The tunnels zig-zag just below the leaf surface but only a few leaves will be affected and the plant won't be harmed. Pick off and destroy all affected leaves. Lovage is rarely bothered by diseases.

Harvest and Storage

When to Harvest/Number of days to Maturity: With new plantings from seed it can take up to three years for the plant's leaves and stems to mature enough to be ready for harvesting but a transplant from an established lovage patch grows larger very quickly and can be harvested in one year. In areas with long winters, Lovage is the first source of fresh greens in spring.

You can harvest lovage leaves at any time but they are best in late spring when they are still young and tender. It is best to dig out the root in autumn. Seeds will arrive late in summer or early spring and the stems are best when eaten young. Containers can be brought indoors in winter for winter harvest so place pots in a bright spot.

How to Harvest: All parts of Lovage are edible although caution is advised with the root. Use celery- flavored lovage leaves, fresh, frozen, or dried, anywhere you would use celery. Snip or pinch off outside stalks and leaves as needed for fresh use anytime during the growing season. Young and tender leaves are best.
For best quality, gather stalks and leaves in the morning after the dew has dried. Harvest leaves for drying before the plant flowers. Harvest two or three- year-old lovage roots with a garden fork just before flowering. Wash and slice roots into ½ inch pieces before drying.

Optimal Storage Temperature and Conditions:
Blanch the stems and eat them like celery or slice them into salads, stews, and soups. Seeds whole or ground can be used in pickling brines, cheese spreads, salads, salad dressing, and sauces. Use whole dry seeds in baking.

Best used right after harvest, store fresh lovage leaves and stems in a plastic bag in the refrigerator crisper. Cut 1- to 3-foot sections of stem for drying. Dry leaves and stems by hanging them upside down in a warm, shady place or dry in a warm oven or a dehydrator. Blanch lovage leaves before freezing in ice cubes or oil. Store lovage leaves and stems in an air-tight opaque container (the light will quickly yellow leaves and stems).

Seed Saving:

Use fresh seed harvested in fall and immediately plant is optional.

Harvest entire ripe seeds heads in late summer. Ripe lovage seeds turn tan then brown. Place seed heads in a paper bag; they will drop as they ripen or gently rub off the seeds between your palms.

If a mature lovage plant is allowed to have some mature seed heads left to winter over on the plant, small lovage plants will appear nearby in the spring that can be easily transplanted to another spot or put in pots to share with other gardeners. Too many seeds left to mature on the lovage plant can result in too many little lovage plants popping up all over your garden as they are blown around in the wind.

Notes:

The plant is frost-resistant, so it can be planted outside even when it's colder than the freezing point. However, they may need protection from winds if you live in an exposed location near the coast or high up in the mountains. Otherwise, keep them under cover during cold weather, which means fewer problems caused by pests like slugs who don't like cool conditions either.

You can also use artificial grow lights but make sure they are designed for plants - these will help to struggle outdoor plants overwinter indoors during winter months when days get shorter.

Lovage has a strong flavour that gets stronger as the plant matures, so be careful not to add too much when cooking with it as it can make a dish too bitter. Lovage has a much milder flavour when dried and is an excellent addition to winter soups and stews. Lovage enhances the flavor of potatoes, tomatoes, steamed vegetables, rice, chicken, and poultry stuffing. Lovage stems are hollow and can be used as a straw for savory juices like tomato.

<u>The Rootstock of Lovage has medicinal qualities.</u>
Lovage root is mostly used for its diuretic properties in cases of water retention and urinary difficulties. Lovage root makes a good remedy for digestive difficulties, gastric catarrh and flatulence. Skin problems will sometimes respond to a decoction added to bath water.

CAUTION:
Lovage root should only be used sparingly and intermittently. In excessive doses, it can cause kidney damage and **should not be used by those with kidney problems.** Lovage root promotes the onset of menstruation and **should not be used by pregnant women.**

Marshmallow

(or marsh-mallow), aka Althaea officinalis.

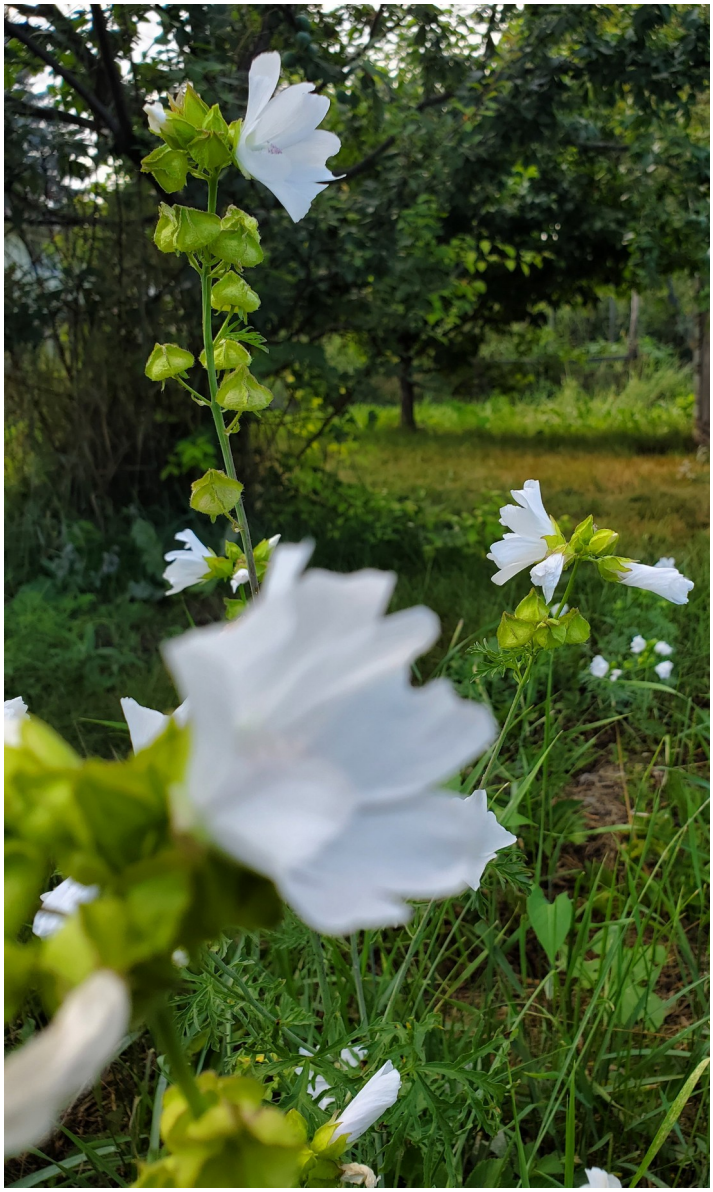


Photo by Rebecca McCarthy

Plant Description:

Marshmallow is a perennial flowering plant that grows in damp areas. It stands 3-4 feet high with a branched stem. The leaves are soft and hairy with three divisions, sort of like a maple leaf. Along the upper stalk, beautiful flowers appear. The flowers have five heart-shaped petals that range in many colors, from white to pink or mauve. These flowers appear in late summer from July to September.

For centuries, it grew wild in sunny, cool locations, such as along the edges of lakes or marshlands. You can still find it wild or naturalized in some places.

Marshmallow is considered to be highly medicinal, particularly its root, which is used in teas, tinctures, and other concoctions for herbal treatment of certain ailments. It is regarded as being anti-inflammatory, a diuretic, an emollient, able to treat an upset stomach, good for treatment of insect bites and wounds, among other qualities. It has also been used to naturally treat respiratory issues such as dry cough and to reduce pain and swelling of the mucous membranes that line the respiratory tract. Historically, marshmallow was used by many ancient civilizations. Perhaps most popular is the Egyptians' use of it. They used the mucilage of the marshmallow root to create a confection, because when it is boiled it creates a gelatin-like substance and a soft texture, similar to the marshmallow treats we enjoy today.

Growing Instructions

Optimal Time/Temperature for Germination:
Most gardeners opt to grow marshmallows from seeds since nurseries rarely sell these seedlings. The marshmallow is grown in USDA zones 3 to 9 as a perennial and it is also self-seeding. To start the plants from seeds, sow them in damp peat moss inside of a plastic bag and put the seeds in the refrigerator for 4-6 weeks (this is called cold stratification). In the spring, plant the seeds into your garden as soon as the ground can be worked. Typically, plan to plant the seeds into the garden 2-3 weeks before the last frost date.

Once planted, be sure to keep the soil moist until the seeds germinate. Marshmallow seeds take time to germinate, typically several weeks.
Another option is to grow this plant from root divisions or cuttings. You can take cuttings from the roots in summer, so long as you keep the ground damp. You also can divide the roots in the fall after the plant dies back down. Take a sharp shape or garden knife and slice down through the root mass. Then, take a part of the roots to plant elsewhere in your garden or share with your friends. Make sure to fill the space where you removed the roots with fertile soil.

Optimal Soil Conditions:
Marshmallow plants prefer to be growing in sandy, moist soil. It doesn't like soil that dries out too fast, so you'll want to add compost to your ground if it doesn't retain moisture well. Marshmallow plants don't care about the pH level of the soil, which makes it easier for gardeners to create the right soil mix. Given the word 'marsh' in the name implies they like growing in marshy conditions, but this does not mean 'swampy' so the soil needs to be moist but not under water.

Seed Planting Depth, Spacing and Procedure:
Sow the seeds into the ground in groups of 5-6, but make sure you don't place them too deeply into the ground. Each group of seeds should be set 18-24 inches apart. These plants need to stay well-watered for the first year to allow the plants to become established. Plan to water weekly, supplying at least 1-2 inches of water per week, minimum.

Best Companion Plants and Plants that Hinder:
Marshmallow is a companion plant for its ability to attract certain bugs, which can deter them away from other plants. More specifically, marshmallow attracts harlequin bugs which are very harmful to cabbages and other related crops. By focusing on the layout of a garden, you may plant marshmallow on one side and keep such plants on the other side of the garden as to distract these pests from destroying them. In this situation, the marshmallow plant is able to camouflage and protect other plants. This relationship is vital, as harlequin bugs are not known pests of marshmallow. Marshmallow also attracts pollinators with its flowers, particularly bees. An example of an ideal planting companionship would be between marigolds and marshmallow. Marigolds are known for their ability to keep aphids away, which is the biggest pest threat for the marshmallow plant. In addition to this, marshmallow and marigolds are both known for attracting pollinators. By planting both of them together, or rather another plant that shares a similar relationship in its mutual benefits to marshmallow, both plants are able to thrive more easily by being placed against each other in a gardening environment.

Crop Maintenance

Moisture Requirements & Solutions:
Keep your marshmallow plants consistently moist at all times, without allowing the soil to become boggy or soaked.

Weeding Needs & Solutions:
No special requirements.

Feeding Needs/Optimal Natural Fertilizers
You don't need to stress around fertilizing these plants too often. When you plant the seeds or seedlings into your garden, you should consider adding compost to the soil to add vital nutrients needed for growth.

Pests, Diseases & Solutions:
Aphids are the biggest pest that affects marshmallow. Inter-planting marshmallow with marigolds should help protect against aphids. Flea beetles are another pest common to marshmallow. In the spring, insect netting can be used to minimize the damage from the flea beetle. Marshmallow is also prone to 'rust' which is a fungal infection. Remove and infected and damaged leaves, minimize 'overhead' watering and remove excess plant litter around the plant.

Harvest and Storage

When to Harvest/Number of days to Maturity:
The leaves, flowers and roots may be harvested. The plant should be left to mature for 2 or more years before attempting to harvest the roots. The leaves and flowers can be harvested at any time.

How to Harvest:
Marshmallow may be harvested differently, depending on which part of the plant is being harvested. The leaves may be harvested before and after flowering. The leaves may be cut with scissors or shears or be plucked by hand. If harvesting both the leaves and flowers, cut the stem with both attached. Since roots are the most commonly used part of the marshmallow plant, it's important to know how to properly harvest them. After 2-3 years of growing marshmallows, the roots will be readily available for harvesting. It is best to harvest them in the fall before the ground begins to freeze. You can pull the plant up by hand or with the help of tools as to not damage the stems and other parts of the flowers, since the roots grow long and thick. Only remove a portion of the roots, leaving enough to where there is an identifiable crown still connected to the plant. This will ensure that the plant returns the next year. Once you have harvested its roots, dry them immediately.

Optimal Storage temperature and conditions:
It is best to dry all parts of the marshmallow plant that you plan on saving.

Optimal Preserving Procedures::
Hang Dry: Place stems upside down in a paper bag with the leaves and flowers still attached. Tie a string to the bag and hang them in a dry, dark room for a week. After about a week, they should be fully dried. If not let them sit for another week.
Oven Dry: Heat up oven to 200°F. In the meantime, wash your roots and cut/grind them up (or place leaves and flowers in a single layer on a tray). When you are done prepping the marshmallow, place them on a tray and into the oven. Leave the oven at 200°F briefly then turn it off. Leave the door open so that they are not dried too quickly.
Food Dehydrator: To dry marshmallow in a food dehydrator, place one part of the marshmallow at a time on the drying rack. Its leaves, flowers, and roots may all be dried in it. Once the drying rack is inside the dehydrator, turn it on its lowest temperature setting and allow them to sit in there for up to 24 hours. You may check on them in intervals, but it should take up to at least 12-18 hours to fully dry depending on the part.

Seed Saving:
Marshmallow is a very easy seed to save. Simply gather the brown, dried seeds and store in a cool, dry place. Self-saved seeds will need to be cold treated, so you can either scatter seeds in fall to expose them to cold or wrap them in a moist paper towel and pop them in the fridge for 2 weeks before starting indoors in a tray.

Mint

aka Mentha spp.

Plant Description:
Mint species (Mentha spp.) are very hardy perennials that are simple to identify not just because of their fresh and spicy scent but because all members of the mint genus have opposite leaves and square stems. Long stems grow upward, flop over, and roots will form where the stems touch the soil enabling the mint plant to spread quite aggressively. Its small white or purple summer-blooming flowers attract bees, butterflies, and other pollinators. Mint plants grow quickly and should be planted in the spring after the threat of frost has passed. Mint is toxic to animals if it is ingested. They are hardy in USDA zones 3 to 11.
The most common types grown include peppermint (make sure to get 'true' peppermint), chocolate mint, spearmint, corsican mint (miniature ground cover), watermint, applemint, pineapple mint, wild mint, Cuban or mojito mint, margarita mint. There are hundreds more varieties and some are quite flavour specific (orange, lavender, ginger, etc).
Notes:
a) Pennyroyal is a type of mint, but it is toxic and should not be consumed.
b) Wintergreen has mint scented leaves but is a completely different plant. It is an evergreen ground cover and is not normally consumed due to strong bitterness.

Growing Instructions:

Optimal Time/Temperature for Germination:
Plant mint outdoors in the spring after the threat of frost has passed. Mint will benefit from springtime rainfall. Choose a place where it can spread without causing any problems or plant it in a container to prevent it from spreading wildly.

Optimal Soil Conditions:
Mint fares best in a damp, moist area with well-draining soil, but also in a spot that's in either full sun or part shade. The plant favors fertile soil enriched with compost.

Seed Planting Depth, Spacing and Procedure:
Plant cuttings or small purchased plants 18-24 inches apart outdoors. Two plants should be enough to cover a few feet of ground because it grows aggressively. Mint has a shallow root system so you won't have to dig down too far, just enough to gently lay the plant and spread its roots. Your primary maintenance task with mint might be to trim back your plant to prevent its runners from spreading to unwanted places. To further discourage spreading, edge the area where you plant mint with edging that is placed 18 to 24 inches deep into the soil or grow it in a container. Mint plants prefer part shade, though they will grow in full sun if you water them frequently. Still, it's best to protect them from strong afternoon sun. Mint also can survive in fairly shady conditions, though it might be leggy and not produce as many or as flavorful of leaves.

Best Companion Plants and Plants that Hinder:
Mint is a good plant to have growing near carrots, oregano, marigolds, cabbage and other brassicas, tomatoes, eggplants, radish, peas and beans. But because mint is a very effective horizontal spreader, plant mint in methods to prevent it from over-taking the space needed for the other plants.

Crop Maintenance

Moisture Requirements & Solutions:
Water your mint during dry spells to keep the soil lightly moist. Maintaining lightly moist but not soggy soil is the ideal environment for mint..

Weeding Needs & Solutions:
No special requirements.

Feeding Needs/Optimal Natural Fertilizers:
If you already have rich garden soil, you likely won't have to give your mint any supplemental fertilizer. Adding compost annually is the preferred strategy of feeding mint.

Pests, Diseases & Solutions:
There are a variety of insects that are known to feed on the mint plant. The most common solutions are to make sure the mint is not drying out and is stressed. The opposite part of the equation is when mint is over-watered as this helps insects thrive. The second option is to regularly spray the mint with a weak soap and water solution as this will deter most of the insects. If the mint is in a location with poor ventilation, insects can also be a problem so the solution is to move the plant (if in a container) or move anything that might be blocking the natural movement of air.

Harvest and Storage

When to Harvest/Number of days to Maturity:
In general, after about 2 months of growing it is ok to begin harvesting mint leaves.

How to Harvest:
You can start harvesting mint leaves once the plant has multiple stems that are six to eight inches long. This amount of growth should take about two months if you are growing plants from seed or less time if you buy nursery plants. Mature mint can be harvested in summer and fall before the shoots die back. Do not harvest more than a third of a plant at one time because removing more than that amount can weaken the plant.
Snip sprigs and leaves as needed. If you don't harvest your mint regularly, it will benefit from a shearing mid-season. At some point, you will probably notice the stems getting longer and the leaves getting shorter. That is the time to cut the plant back by one-third to one-half. This will encourage it to send out fresh new foliage again with good-size leaves.

Optimal Storage temperature and conditions:
It is best to dry mint to store it. It can be stored in the fridge for a short time (1 to 2 weeks) and perhaps longer if using the `cut flower' storage method of keeping the stems in a little water (but keeping the leaves dry).

Optimal Preserving Procedures:
Drying the mint leaves by using a) the sun or b) a warm oven or c) a food dehydrator or d) a dry cool cupboard. You can also freeze mint with water in an ice cube tray. You can add mint to an unflavored alcohol to extract the flavours. Additionally, you can make a mint syrup out of the leaves, sugar and water.

Seed Saving
Mint propagation from cuttings is the easiest method of getting more mint. In the early summer, cut off 3 or 4 inch long branches of mint. Remove all but the top 2 to 4 leaves. Place these stems in about an inch of water in a small container and after 1 to 2 weeks, rootlets will form. This can be planted anywhere you wish using a lighter potting soil (one that drains well). For seed saving, after the plants have finished blooming, leave a few flowers on the plant until they turn brown. Snip the flowers off with a pair of scissors and place them in a paper bag to allow them to dry out. Leave the paper bag in a cool, dry place for about two weeks. Remove the dried mint flowers from the paper bag and crush the flowers with your hands to release the seeds.

Mustard

Description:
Mustard is an annual herb that is native to certain regions in Europe, with roots in Asia, North Africa, and the Middle East as well depending on the variety of mustard. It is a cold-hardy annual and prefers cooler temperatures. Mustard has an extensive history, spanning back to the Stone Age and ancient Egyptian civilizations for its culinary and medicinal uses. All parts of the mustard plant are edible, and its seeds are used to create the condiment that we know and love as mustard, too. This condiment is usually made from white and black mustard seeds, as brown mustard is known to be very spicy. Mustard plants can grow up to 3 feet tall and is known for its yellow flowers that adorn it in groupings of two to twelve. These flowers are commonly consumed as well as used in everything from teas to garnishes for fancy plating of dishes.
A short list of popular varieties include: Red Giant, Scarlet Frills, Green Wave, Ruby Streaks, Southern Giant, Purplewave, Carolina Broadleaf, Mizuna (Japanese).
Mustard grows in USDA zones 4 to 11, however, it is an annual in zones 4 to 7.

Growing Instructions

Optimal Time/Temperature for Germination:
When planting mustard, it is important to ensure that the soil is prepared and has enough nutrients in it. A popular way of preparing soil for this herb is by adding compost in before sowing the seeds. Upon placing the seeds, the planting depth for mustard is ¼ to ½", with a planting space of 6 to 8" between each plant. Mustard is usually planted after the last frost of the season but can be planted as early as 4 to 6 weeks before as it is cold hardy. It is usually planted in the fall or spring. Mustard thrives in full sun to partial shade conditions, with a decent balance between the two, and it is easily germinated with germination usually occurring after 8 to 10 days of sowing seeds but in some cases earlier than that. To ensure optimal growth and health, it is important to make sure that the soil is well-drained to avoid over-watering and retention of too much moisture.

Optimal Soil Conditions:
To grow properly, mustard prefers a soil that's pH is above 6.0, but will still grow in acidic conditions. It needs consistent moisture, especially when it is in the beginning stages of growth, to ensure that it produces its leaves quickly. The soil needs to be well-drained to ensure that the plant does not receive too much moisture as this is not good for its well-being. It requires around two inches of water a week. It is important to keep an eye on rainfall, as you may need to water it less or none at all during rainy weather conditions. Do not let the soil dry out, as this will kill the plant quickly. Mustard thrives with addition of aged compost to its soil before sowing seeds. Mulch is not necessary for its growth, but if you have issues with your ground retaining moisture it may be a helpful addition to the livelihood of your mustard plants.

Seed Planting Depth, Spacing and Procedure:
Add compost before sowing seeds. Plant ¼-½" with a spacing of 6-8" between plants. Make sure it is planted where it can receive full sun to partial shade. Mustard car be grown in pots as long as care is taken to not over-water them. The pots need lighter soil and holes for drainage. Plant every 2 weeks for continuous harvest. Some plantings may bolt quickly in response to increasing temperatures and day length. High temperatures and lack of moisture increase peppery taste.

Best Companion Plants and Plants that Hinder:
Among mustard's companion crops are known to be yarrow, dill, and plants within the mint family. Since mustard can fall victim to pests such as aphids and flea beetles, these plants aide mustard by preventing these pests from eating or destroying its leaves. This is possible due to yarrow and dill attracting ladybugs and lacewings, which feed on aphids. Plants within the mint family, such as mint and lemon balm, repel flea beetles. By strategically placing these companion plants together, it helps remove the possibility of damages to the plant from outside forces. Plants that may benefit from mustard are fruit trees as it helps stimulate their growth. It's important to not place mustard near bean plants as this can cause them issues with mildew, as well as a struggle for sunlight.
It is not a good idea to grow mustard near soybeans, sunflower, beans and strawberries as mold and mildew can spread between mustard and these plants.

Crop Maintenance

Moisture Requirements & Solutions:
Make sure that the soil is moist and well drained at all times. Check with fingertips to ensure that the soil is not dry nor too wet. It likes around 2" of water a week. Mustard prefers cooler climates but will tolerate hotter climates, as long as it is not exposed to too much heat in the early stages of growth or flowering. Too much heat can cause regression of growth and the plant to die, especially if the heat causes it to not retain enough moisture. Mustard prefers rich, well-drained soil. It does well in full sun but prefers partial shade as well, as too much sun can cause it to lose moisture quicker. To prevent over-watering, you may check the soil with your fingertips to ensure that is not soggy but rather moist to the touch.

Weeding Needs & Solutions:
Mustard does not like competition so removing weeds and making sure the plants have ample space to grow are best practices.

Feeding Needs/Optimal Natural Fertilizers:
If you already have rich garden soil, you likely won't have to give your mustard any supplemental fertilizer. Adding compost or mulch regularly is the best strategy for conditioning the soil. Mustard is often thought of as a 'weed' since it will thrive under less than ideal conditions. In conventional farming, mustard is often grown as a fall/winter cover crop to enhance the soil after growing corn as a cash crop.

Pests, Diseases & Solutions:
Common insects: Flea beetles and aphids. Their impact can be halted or minimized by using row covers when planting mustard.

Harvest and Storage

When to Harvest/Number of days to Maturity:
Greens: 20 to 30 days for baby greens and 40 to 50 days for full leaf.
Seeds: 70 to 80 days for most varieties.

How to Harvest

Greens: You should harvest mustard greens while they're still young and tender. Older leaves will get tough and increasingly bitter as they get older. Discard any yellow leaves that may appear on the plant. Mustard greens are harvested one of two ways. You can either pick individual leaves and leave the plant to grow more, or the entire plant can be cut down to harvest all the leaves at once. As a rule of thumb, it is important to never harvest more than 1/3 to 2/3 of the plant at one time, so that it will continue to grow. If you want to continue growing leaves longer, pluck off the flowers as they come in. Once the flowers blossom, the leaves will no longer grow.

Seeds: A popular way of harvesting mustard seeds from their pods is by pulling up the plant and hanging it upside down in a paper bag and allowing it to dry out. After two weeks, shake the bag and the seeds should fall out of its pods and drop to the bottom. This method is the hang dry method. Another convenient way of drying them is to pluck the individual pods and dry them on a screen for two weeks in a single layer as well. When harvesting mustard, if the seeds are already not dry enough, these methods work nicely along with other alternative methods: oven drying and using a food dehydrator.

Optimal Preserving Procedures:
Greens: Should be dried for storage. They can be cooked and frozen, like spinach as well.
Seeds: Just need to be dried and packed in an air tight container.

Optimal Storage temperature and Conditions:
Greens: Should be eaten fresh, either raw or cooked. To store greens, they first need to be dried, by either hanging them in a cool dark room or using a food dehydrator or oven method.
Seeds: As long as the seeds are dried to a moisture content of 10%, they can be stored in a cool dark room, in air tight containers for many years. Seeds are usually viable for 3 years when properly dried and stored.

Seed Saving:
If you are a seed saver, note that mustard greens can cross with broccoli raab, turnips, and Chinese cabbage. Leave at least **800 feet** between crops to avoid cross breeding.

Nasturtium

Description:
Nasturtium belongs to the Tropaeolaceae family and is native to South America, specifically in Peru. It is a perennial and climbing plant, which can reach a height of up to 11 inches. Its flowering season is from July to September while the seeds will become ripe from August to October. The flowers are large and trumpet-shaped, with some of the most common colors being red, orange, yellow, and creamy white. The leaves and flowers are both edible. Its leaves taste peppery, which will have a stronger flavor as it grows older. Its flowers also have a distinct spiciness, making it a colorful addition to a salad of greens. The unripe seeds, on the other hand, are good for pickling.
While there are over 50 varieties, they fall into one of three categories: dwarf or bush (shorter), semi-trailing (2 to 3 feet tall and wide), full trailing (6 to 8 feet tall and wide).
Nasturtium grows in USDA zones 3 to 10. It is an annual but will sow its own seeds and can sometimes take over an area in your garden if left unchecked.
They are also said to be very beneficial for chickens, especially laying hens.

Growing Instructions

Optimal Time/Temperature for Germination:
Because they do not like cold weather for germination, most people start them indoors in compostable pots 4 to 6 weeks before the last frost date in their area. While it is said they do not like to be moved from pot to soil, depending on the variety, it will be ok to do so. Plant in full sun or partial shade, though you'll get fewer flowers in the shade. Nasturtiums don't like extreme heat. However, 4-6 hours of direct sun a day will work well.

Optimal Soil Conditions:
They grow in any type of soil. Light soil with good drainage is ideal. Plants prefer a pH between 6.8 and 7.1.

Seed Planting Depth, Spacing and Procedure:
Plant seeds direct in the garden about 3/4 inch deep. Sow three or four seeds in a small circle. Water well and keep the soil moist until the seedlings appear. The seeds can be soaked for 24 hours before planting or a small nick can be added to the seed coat with a nail file or nail clipper to speed germination.

Best Companion Plants and Plants that Hinder:
Some people claim that they attract beneficial insects and they do attract pollinators. The best companion plants for growing nasturtiums are: Cabbage, Kale, Cauliflower, Cucumber, Gourd
Beans, Tomato, Radish, Broccoli, Apple. They are often grown as an insect attractor plant between potatoes and tomatoes.

Crop Maintenance

Moisture Requirements & Solutions:
They do not like overly wet soil. Depending on your environment, they may not need any watering at all. If they start drooping then it is time to water. Do not let the ground completely dry out between watering, but do not over water. If you live in a high rainfall area, make sure the soil will drain well (lots of organic matter).

Weeding Needs & Solutions:
Keep weeds at bay to allow growing nasturtiums the room to ramble unimpeded. Often nasturtiums are quite bushy, and by the time you see the weed pop through, it has become established.

Feeding Needs/Optimal Natural Fertilizers:
Nasturtiums do well without fertilizing. If they get too much fertilizer, you'll end up with lots of foliage, but few blooms.

Pests, Diseases & Solutions:
Whitefly, cabbage butterly, and slugs/snails.

Harvest and Storage

When to Harvest/Number of days to Maturity:
Leaves, flowers, seed pods and dried seeds can be picked any time during the growing season. The flowers normally start appearing after 50 to 70 days.

How to Harvest:
Leaves and flowers: any time, just no more than 40% of the plant. Large leaves will be tougher than younger small ones. It is best to pick the leaves in the early morning (before sunrise) to ensure they are plump. Try to taste the flowers throughout the growing season because at different times of the year they can have a sweetness in addition to a pepperiness.
Seed pods: when the seed pods are green and fresh (like a pea) they can be picked.
Seeds: when the seed pods have dried out, they can be picked and then fully dried. If the seeds are quite green, they can also be picked to make a recipe called 'poor mans capers'.

Optimal Preserving Procedures:
Leaves and flowers: Should be dried for storage. They are typically eaten raw or cooked though.
Seed pods: These are often made into a pickle.
Seeds: Need to be dried and packed in an air tight container.

Optimal Storage temperature and Conditions:
Leaves and flowers: If they are dried properly, they will store in the pantry in a sealed container.
Seeds: As long as the seeds are properly dried they will store in a cool dark room, in air tight containers for many years.

Seed Saving:
If you are interested in saving seeds, just cut off the dried seed pods and store them appropriately in a cool dark place. The seeds will be tan colored and look like a wrinkled pea. Nasturtium will cross pollinate with other nasturtium plants. If you want a pure seed line without cross pollination, you will need to only grow one variety or separate them by 800 yards or meters.

Oregano

Plant Description
The Oreganum genus includes a large number of perennial herbs and shrubs native to western Asia and the Mediterranean. The most common species are familiar culinary herbs, including O. vulgare and its cultivars, O. majoranum, O. heracleoticum, and others. Oregano is a signature flavor of many Italian, Mexican, and Spanish dishes. It is a hardy perennial plant that is easy to grow in the home garden or in pots. Oregano leaves are oval, dark green, and positioned in opposite pairs along the stems. Some varieties have fuzzy leaves, others not. Oregano starts as a ground-hugging rosette of leaves, but it can easily grow to about 2 feet tall. A handful of plants will provide you with enough oregano to use fresh in season and to dry for use throughout the rest of the year.

Here are some common oregano varieties to consider:
Oregano vulgare (common oregano, wild marjoram, pot marjoram): Marjoram is a type of oregano with a less pungent, sweeter taste, often used in French and English cooking. There are many cultivars of O. vulgare, generally named for their unique tastes.
Origanum vulgare 'Aureum' (golden oregano): This oregano has lighter colored leaves and a milder oregano flavor. It is more popular as an ornamental plant than as a cooking herb.
Oregano heracleoticum (Greek oregano): The variety usually used in Mediterranean cooking, this is the type most people associate with oregano flavor. Oregano onites is also sometimes listed as Greek oregano.
Lippia graveolens (Mexican oregano): Although not in the oregano family, this plant is called Mexican oregano and is used in chili powders.

Growing Instructions

Optimal Time/Temperature for Germination:
From seeds: Oregano seeds require some light to germinate, so cover only slightly with soil. Start seeds indoors and transplant when outdoor temperatures remain above 45 degrees Fahrenheit through the night and soil temps are about 70 degrees.
From cuttings: Oregano can be propagated from stem cuttings at any time from spring to fall, though spring and early summer tend to be best, since the stems are still green and pliable. Take 3- to 5-inch cuttings, making diagonal cuts just above a leaf node. Trim away the leaves from the bottom two-thirds of the cutting, but make sure to leave at least two leaves at the top. Place the cuttings in a glass of water in a bright but not sunny location. When a good network of roots appears, plant the cuttings in a small pot filled with potting mix to grow onward.
You can also simply divide plants at the root ball to make more plants. In early spring or fall, divide plants into segments when the centers begin to die out or the stems become too woody.

Optimal Soil Conditions
If your soil is moist with lots of organic matter, oregano will **not** perform as well as it does in lighter, dryer soil that is typically well-drained. Allow the soil to dry out fully between waterings. If planting in pots, use any well-draining, general-purpose potting soil, possibly blended with some extra sand, perlite, or vermiculite.

Seed Planting Depth, Spacing and Procedure:
Plant seeds direct in the garden about 1/4 inch deep. After they begin to grow, thin them to about 12 inches or more apart. For cuttings, they can be planted in pots or in the garden once their roots are well formed. Dig a hole deep enough to support the fragile roots and plant the cuttings.

Best Companion Plants and Plants that Hinder:
Oregano can be planted near sage, thyme, rosemary, basil and tomatoes. It does not do well near plants that need very moist soil. This includes most cruciferous vegetables like cabbage, broccoli, or collards and lettuce and celery.

Crop Maintenance

Moisture Requirements & Solutions:
Oregano does not like overly wet soil. Allow the ground to completely dry out between watering, but do not over water. If you live in a high rainfall area, make sure the soil will drain well (sandy loam is best).

Weeding Needs & Solutions:
Weeds are not typically a problem with oregano as it will likely out-compete any weeds in the area.
Feeding Needs/Optimal Natural Fertilizers:
Oregano does very well without fertilizing. If they get too much fertilizer you might get off flavors in the leaves.

Pests, Diseases & Solutions:
Aphids, cutworms, thrips and spider mites are the most common insect pests. In addition, a fungus called 'mint rust' can threaten oregano. For insect problems, you can remove them physically or with a water spray or with insecticidal soap. For mint rust, dispose of any infected leaves and stems. Dig up the roots and treat them with 44 degree C water (111 F) for 10 minutes and then replant them.

Harvest and Storage

When to Harvest/Number of days to Maturity:
As soon as the plant is 4 inches high, it is ok and recommended to begin pinching off new growth. Keeping the plant pruned on a regular schedule (7 to 10 days for example) will create a nice bushy plant instead of a long and lanky/woody weed.

How to Harvest:
The younger stems are cut off using a clean utensil. The leaves are then removed and used for cooking or preservation. The stems can be used to steep into teas or broth and sauces.

Optimal Preserving Procedures:
The leaves should be dried completely before storing in a well sealed container.
Optimal Storage temperature and Conditions:
Store the dried oregano in a cool dark place in a sealed container for optimal flavor.

Seed Saving
If you are interested in saving seeds, just cut off the dried seed pods and store them appropriately in a cool dark place. Note that oregano will cross pollinate easily with any other variety of oregano and the seeds may result in a hybrid for the better or detriment of the new plants. To stay true to the mother plant, cuttings are the most popular and faster method of propagation.

Notes:
Bees love oregano flowers and will cover the plants as they take up nectar and pollen. Beekeepers purposefully plant oregano near apiaries because it adds a wonderful flavor to honey made by oregano-eating bees.

Red Clover

Description: is a short-lived perennial or biennial plant grown widespread and cultivated as a forage grass in many countries. Red clover prefers grasslands and wet meadows where it grows up to 50 centimeters in height, producing purple-red color shaped tops like a puffball with hairy stems and trifoliate leaves. It is a legume in the family Fabaceae and has been used as a cover crop like white clover. Red clover has a thick tap root that grows to a length of 24- 36 inches. Lateral roots arising from the tap root are concentrated mainly in the upper 5 inches of the soil.

More common names are cow clover, meadow clover, wild clover. Due to its lightly sweet, floral flavor, it is very suited to desserts and sweet entrees. Bumble bees love this plant too. To take red clover medicinally, dry the leaves and use them to make tea, or infuse the leaves with oil to make a salve.

Growing Instructions

Optimal Time/Temperature for Germination: While red clover can grow during almost every season, it typically does the best when the weather is still warm out. Plan to start your red clover late summer or early autumn before the temperatures get cold for the best results. Hardiness zones are 3 to 8.

Optimal Soil Conditions: Most varieties of clover do best in soil with a pH between 6.0 and 7.0, although some do well in soil with a pH as high as 8.5. Red clover isn't super picky, so the location doesn't matter too much. Before you plant, hand pull all the weeds and make sure the soil is well-draining. You can check on the soil by looking at it after rainfall—if there are standing puddles of water, choose a different location. If you've never planted something in the location before, tilling the soil is a good idea. Red clover will grow in most light conditions, so you don't have to worry too much about sunlight.

You need to inoculate red clover seeds 24 hours before you plant them in a container to mix peat moss inoculant with the Rhizobium bacteria in with your red clover. The bacteria will allow the seeds to use nitrogen from the air and actually grow instead of dying in the soil.

Seed Planting Depth, Spacing and Procedure: Mix your red clover seeds with grass seed. Grass seeds help prevent weeds, so you'll get more red clover if you mix them together. Pick orchardgrass, reed canary grass, perennial ryegrass, smooth bromegrass, or tall fescue, then mix it with your red clover seeds at a 1:1 ratio.

Sprinkle 10 to 12 lb (4.5 to 5.4 kg) of seeds per acre. If you spread too few seeds, your red clover won't grow. Weigh out your seeds and compare it with your space to make sure you have enough before you start planting. You can water the area after you've spread the seeds.

Best Companion Plants: Red clover is an unbeatable companion plant itself. It fixes atmospheric nitrogen in root nodules and acts as a living mulch. Single forage grasses to mix with are Orchardgrass, Perennial ryegrass, Reed canarygrass, Smooth bromegrass, Tall fescue, and Timothy. It is very well suited for use as the forage legume in short rotations with corn and even oats. Consequently, where erosion is not a
problem, clover planted for seed should be sown without a companion grass or the grass should be sown at a low rate.

Crop Maintenance

Moisture Requirements & Solutions: Red clover doesn't need a ton of maintenance, and usually, you can let nature take care of it for you. If your climate is going through a dry spell, you can water the clover about once a week to help it grow. Make sure rain has been somewhat regular before harvesting.

Weeding Needs & Solutions: Before you plant clover, you will need to get rid of any unwanted plant growth. Clover seeds will do best if they don't have to compete with weeds while they're getting established. To remove all vegetation, rocks, and debris from the area, till or rake the soil to a depth of about eight inches (20 cm). Tilling a month in advance will give any weeds time to regrow so you can remove them before planting. Tilling now will also make it easier to change the soil if the pH needs to be adjusted.

Feeding Needs/Optimal Natural Fertilizers: Clover can produce nitrogen all on its own, as long as it forms the proper relationship with the soil (which you encourage by adding a clover inoculant when planting). Adding in fertilizer will usually encourage grasses and weeds to grow instead of the clover.

Pests, Diseases & Solutions: root rots and the foliar disease northern anthracnose are the most serious diseases of red clover. Root rots are the worst of the two, resulting in plant death and stand thinning. Maintaining plant vigor by maintaining adequate soil fertility and proper cutting management are the most practical means of minimizing losses to root rots. Northern anthracnose causes severe foliage loss during the first growth of the season. With reduced percentage of leaf material, forage quality and yield decline seriously. Varieties resistant to northern anthracnose are available and provide the only practical control action. Other diseases of red clover include powdery mildew, viruses, sclerotinia crown and stem rot (aka `white mold') and other fungal diseases.

Selection of disease-resistant varieties is the primary control option in red clover. Soil fertility and proper harvest management (for example: cutting early if disease problems become severe) are also important in limiting red clover diseases.

If clover mites are or have previously been a problem for you, select plants that they dislike and stay away from: annuals such as marigolds, petunias, and zinnias; perennials such as salvia and roses; and shrubs and trees such as barberry, juniper, spruce, arborvitae, and yew.

Harvest and Storage- Keeping the clover at the same height is important for next year's bloom season. After your last harvest of the growing season (usually in late summer), use a lawn mower to mow the clover down short and get it ready for autumn.

It will come back for 2 to 3 years after you plant it. While clover can come back every year, its natural predators usually prevent that from happening. Disease and pests will most likely kill your crop after a couple years, so be prepared to till and reseed the area.

When to Harvest/Number of days to maturity: Harvest it 2 to 3 times per season. Do your first harvest 60 to 70 days after planting. After that, wait 30 to 35 days in between each subsequent harvest. (If you don't want to harvest your red clover, release cows or goats into the field and allow them to graze instead of harvesting.) Harvesting when environmental conditions are poor could harm red clover plants and negatively impact production. As a result, don't harvest during drought and don't harvest if it is unseasonably warm.

How to Harvest: Conduct your first cutting before the plant's first mid-bloom. Mid-bloom (typically be in the spring) is when half of the red clover plants in a given location (a field, your garden, or yard) have at least one flower. Harvesting at this point should yield sweet red clover flowers and leaves. This should not hurt yields for later harvest.

The best time to cut red clover is early in the morning, right after the dew has dried. This way, it'll still be somewhat cool out and the plant will have some time to recover before the hottest point of the day. If you cut late in the day, you might weaken and hurt the plant. Take a look at an individual clover, then find the leaf growth just beneath it. Hold your pruners at an angle and clip the stem above the leaf growth. After cutting the stem from the plant, you'll want to remove any remaining stem from the flower itself. Leaves may be cut from the stem in clumps of three. When cutting the leaves (or the flower), avoid cutting the entire plant at its base. While the plant can regrow more leaves and stems, you'll hurt its ability to produce if you cut it too low. Remember, don't waste any part of the plant you won't use. Only cut the leaves you plan on using. Collect the flowers and dry them out in the sun before using them.

Cut at the second mid-bloom. Depending on your region, you'll likely be able to get another harvest in about six weeks (typically in the summer). To do this, wait until the plant blooms fully and then gets to another mid-bloom.

Full bloom is when the vast majority of plants in a given location (a field, your garden, or your yard) have flowers that are blooming. Cutting at or after full bloom could harm the plant and potentially lower yield for the following season. As a result, if you plan to continually harvest a particular red clover patch, you should not harvest late into a bloom.

Optimal Storage temperature and conditions: Place your harvest on trays or racks to dry. Unless you choose to eat the leaves or flowers when they are fresh, you need to dry out your harvest so you can store it properly. To do this, place wire racks or trays with leaves and flowers in a shaded area. Then, allow them to turn crisp. Make sure wherever you lay your harvest is not too moist or humid. Your harvest could mold or mildew. If you want to speed up the drying process, consider placing your harvest in a food dehydrator. After you've dried your clover leaves or flowers, you need to store them appropriately. Gently place them into some sort of airtight container. When you're done, close the container as tight as you can. Use mason jars, Tupperware, or

other similar containers. Place them in a part of your house that is cool and dry. This is important, as the cooler and dryer the location, the higher the chances that you'll be able to store your clover for a substantial period of time. Store your red clover in a place with temperatures lower than 70 degrees Fahrenheit (21 Celsius) and 60% humidity.

Red clover is edible, and you can use them as a garnish or in a summer soup. Use red clover as the base of food dishes or substitute it for other ingredients. The seed makes a favored seed sprouting food too.

Seed Saving: It will spread by seed, if you let it go to seed. The individual plants don't live more than 2-3 years. In the year you want to produce seed, the first crop should be harvested for hay because it will have too much vegetative growth for good seed yield and spring conditions are usually too wet for producing good quality seed. Seed production in red clover is highly dependent on insect pollination, which occurs primarily through bumblebees. It might pay to set a couple hives of bumblebees near the field during flowering. It is critical that seed be dry enough to prevent heating. (Heating will dramatically reduce the germination of the seed.) Be sure to store seeds in a cool, dark place.

Notes: Avoid plants with discolored flowers or leaves**.** Plants with discolored flowers or leaves could be sickly. Harvesting sick or weak plants could not only hurt the plant (and make it so the plant can't recover from the harvest), but it could impact the flavor and quality of whatever you produce with it. Allow plants with discolored flowers or leaves to grow until the next season. If they still appear discolored, uproot them.

Different seeds than above but fyi, the most popular types of clovers for lawns are Dutch White (a perennial that grows to 8 inches, or 20 centimeters) and Microclover (a durable clover that has small leaves and short stems). To encourage fuller patches of clover already growing in your yard, mow your lawn to 1.5 to 2 inches (3.8-5 cm). This height is more favorable to
clover than to grasses.

Inoculate them yourself. Inoculation is the process of coating the seeds with a nitrogen- fixing bacterium that allows the clover to produce its own nitrogen.

Though generally recognized as safe, red clover has minor estrogenic properties and should be avoided by those who are pregnant or breastfeeding.

Red clover sprouts' nutritional value is said to be comparable to that of alfalfa sprouts.

Avoid eating unsprouted seeds. The seeds contain a compound which can interfere with your body's ability to digest protein. This compound will only be destroyed after the seeds have sprouted.

Rosemary

Description: is an edible perennial evergreen shrub from the Lamiaceae Family. This woody shrub will thrive for years. Standard rosemary grows to about 2 meters (6 feet) in height. It is very slow to reach this height, however, the dwarf variety will reach about 45cm (18") in height and is suitable for container growing. Rosemary has different forms, including different colors, leaf shapes and sizes. Flower colors also vary, usually from pale blue to white.

Growing Instructions

Optimal Time/Temperature for Germination: Once roots have formed, you can plant the rosemary either in pots or outdoors in your garden. Rosemary will adapt to most growing conditions and is quite hardy. It's happy with snow, limestone, high temperatures, by the seaside, and all sorts of soils. It will grow its best however, in a warm to hot, fairly dry climate. Though rosemary is hardy, it can suffer in very cold weather (lows of 0 degrees Fahrenheit or less) and its branches can get damaged when laden with heavy snow. To ensure the plant survives the winter, it's best to bring the pot indoors. If your winter lows do not get down to 0 degrees F, then you do not have to do this. Hardiness zones are 6 to 10. Transplant outdoors 2 weeks after the last frost date.

Rosemary seeds can be difficult to germinate, and they often do not grow true to their parent plant. If you wish to try growing from seed, plant several more seeds than plants you hope to grow. Start seeds around three months prior to your area's projected last frost date in the spring. Scatter them in a tray filled with moist seed-starting mix, just lightly covering them with the mix. Cover the tray with plastic wrap to trap in moisture, and make sure the mix doesn't dry out. Place the tray on a heat mat to keep the soil between 80 degrees and 90 degrees. As soon as seedlings appear, remove the plastic wrap, and place the tray in bright light. Once seedings are around 3 inches high, they can be moved to individual pots or outdoors if the weather is warm.

Optimal Soil Conditions: Choose a full sun aspect that is fairly dry. Decide whether you want to keep growing it in pots or as a shrub in the garden. It can also be trained as a delightfully scented hedge. For cooler climates, containers may be best so that you can move them if needed. If planting in the garden, pot the cutting up once so it can establish more roots and gain strength before planting it outside. Then, choose soil that drains well. Rosemary can suffer from root rot in waterlogged soil. Better soil pH preferred 6.0 to 7.0. The more alkaline the soil, the more fragrant the rosemary will be. Dig in some lime if the soil is too acid.

Seed Planting Depth, Spacing and Procedure: Rosemary is easiest to grow from a cutting, rather than planting seeds. Visit a community garden and ask for a cutting, or ask a friend for a cutting of their plant. After you find a rosemary plant, clip off a few 4 in. pieces to propagate. The best time to do this is in the late spring, but if you live in a warmer climate, this can be done during early autumn as well. The plants you'll be able to grow from the cuttings will have the same qualities as the original bush. Before planting the rosemary, strip the leaves off of the lower section of the cutting (about an inch from the end of the stem). This part of the plant will go into the soil. It is important to strip these leaves because leaving these leaves on will cause the stem to rot instead of grow.

After you have stripped the leaves, put each cutting into a small pot of soil filled with two-thirds coarse sand and one-third peat moss. Set the pot in a sunny place, but not in

direct sunlight. Water the cuttings regularly and keep in a warm spot until the roots form, which should take about three weeks. To help the cuttings grow, you can place the entire pot inside a plastic bag with a few holes punctured in the top. This will help regulate the temperature and keep things warm and moist. You may also dip the tips of the rosemary cuttings in rooting powder to give them a head start.

Spacing: 4 to 6 in. between plants and 12 to 15 in. between rows at a depth of 1 to 2 in.

Rosemary can tolerate salt and wind, making it an ideal seaside garden plant. However, it does grow best in a sheltered position, such as up against a wall, so try to provide this if possible.

Best Companion Plants and Plants that Hinder: Best Companions: cabbage, sage, carrot, beans, and broccoli. Worst Companions: tomato.

Crop Maintenance- Pruning isn't necessary for the health of the plant, but rosemary bushes tend to grow quite large and take up a lot of garden space. Cut the branches back by a few inches each spring to help them retain their shape. Don't prune off more than a third of the plant at a time, as this can stress the shrub and leave it vulnerable to diseases and pests. In a container, keep it clipped to maintain a suitable shape. Clip both the roots and leaves for a healthy potted plant.

Moisture Requirements & Solutions: Rosemary prefers a drier soil, so don't overdo the watering. It will be happy with the average garden watering. It likes to source most of its water from rain.

Weeding Needs & Solutions: Unfortunately, rosemary plants often suffer from weeds, which compete with plants in terms of space, access to sunlight, water and nutrients. The presence of weeds will have a negative effect in the quantity of fresh plant material harvested as well as in the quality of essential oil.

Feeding Needs/Optimal Natural Fertilizers: This is not an herb that needs it. However, make sure that there is some lime in the soil. Mixing compost into the soil at the time of planting can help to give the shrub a healthy start.

Pests, Diseases & Solutions: High humidity and poor air circulation can result in powdery mildew, a white, powdery fungus. Powdery mildew typically won't kill a plant, but the disease will weaken it. Downy mildew thrives in moist conditions, so water plants in the morning so they can dry out, water at the base of plants, and keep plants pruned and separated to improve air circulation. Powdery Mildew is often confused with downy mildew, but they're two different things. Powdery mildew is caused by a fungus and causes curling and blisters on leaves. Eventually, the plant will be covered in a white or gray powder-like growth. In addition to following the same moisture-control practices that you use with downy mildew, you can spray plants with neem oil or use a copper fungicide to control it.

Aphids and whiteflies literally suck the life out of your plants, and they can be particularly damaging to rosemary that is grown indoors or in greenhouses.
Dislodge the little pests by spraying them off plants with a blast of water and then use neem oil to keep them from coming back watch out for spider mites. Use an insecticidal soap as soon as you spot an infestation to prevent it from spreading

Harvest and Storage

When to Harvest: Harvest after new growth is generated, typically 6 weeks after planting. Since rosemary is evergreen, you can harvest it all year round.

How to Harvest: Pick sprigs of rosemary leaves as needed.

Optimal Storage temperature and conditions: Store the sprigs in a cool, dry

place. Rosemary can be frozen for up to six months. Simply place the sprigs into freezer bags and freeze. However, if you have your own bush, it's probably easiest to just pick as needed rather than take up extra freezer space. Alternatively, strip the leaves from the stems and store in airtight jars. Stored this way, rosemary will slowly dry and keep for several months.

Rosemary doesn't need to be dried to eat so put a fresh twig in a casserole, strip the leaves in, or just thread bits of lamb and veggies onto a rosemary skewer for the barbecue. It is a wonderful compliment to both sweet and savory dishes. Use it to add depth to meat and chicken, bread, butter, ice cream, herb bread, Rosemary syrup, lemon sorbet with rosemary. You can use either fresh or dried rosemary for tea- about a sprig per cup. The flavor and aroma are lovely, just bear in mind that the longer you steep the rosemary in hot water, the stronger and more bitter your tea will become.

Seed Saving: A rosemary plant will produce flowers in spring or summer. When the flowers die back, seed pods will grow in their place. After the seed pods form, wait for them to develop and eventually dry out and turn brown. That’s when they're ready to be harvested. / The seed pods are very small, and you can remove them from the plant by pinching them off with your fingers. As you collect the pods, place them in a cup or small bowl to keep them all together. / Bring the pods inside and transfer them to a paper bag. Leave the bag open to allow air flow. Place the bag in a warm, dry place away from direct sunlight for 1 to 2 weeks. This will give the pods and seeds time to finish drying out. The pods are dry when they're completely brown and all the moisture is gone. / Place the seed pods onto a clean tea towel. Fold the towel over the pods and rub the towel between your hands to separate the seeds from the pods, and to remove any husks or flower matter. Open the towel and pick out the seeds, which are small, brown, and egg-shaped. Discard the pods and other plant matter. / Transfer the seeds to a paper bag and seal the bag to keep the seeds inside. You can store the seeds for up to a year, as long as they stay cool and dry. A root cellar or basement is an ideal location for seed storage. / The trick with growing rosemary from seed is patience, because this plant is a slow grower when propagated from seed.

Notes:

Rosemary can be dried and made into drawer sachets, used as in ingredient in homemade soap, turned into a fragranced water that makes your hair shiny and soft, Plant a rosemary bush near the clothesline. Clothes that brush against it will smell gorgeous. It's also a nice herb to brush against on a raised walkway.

It doesn't have seasonal changes like deciduous plants. When it looks dead, it's probably dead, especially since rosemary hates having wet feet or too much water.

Rue

Description: is a shrubby perennial on a woody base in the Rutaceae family. It features aromatic, blue-green foliage with a fern-like appearance. And in the summertime, it sports clusters of small yellow flowers that attract butterflies and other pollinators to the garden, as well as parasitic wasps. Rue grows from 2 to 3 ft. tall and wide. It has very aromatic leaves and is an attractive herb whose dried leaves can be strewn about your home to repel insects.

Growing Instructions

Optimal Time/Temperature for Germination: Rue grows best in cool and warm climates, but it doesn't like humidity during summer. If you're in a cool climate, ensure that it has a position with full sun. In a warmer climate, a little shade is fine but not too much. The ornamental herb has a moderate growth rate and should be planted in the spring after danger of frost has passed. Hardiness zones are 4 to 10.

Optimal Soil Conditions: If using seeds, plant them in small seed-raising trays or punnets using seed-raising mix. During germination, keep the soil moist and in a warm, bright but shady position. In April. When the sprouts are about 2 in (5 cm) high, you can transplant them to their final place. Increase the sun exposure gradually prior to planting in the garden. / If you prefer to use cuttings, take these towards the end of summer. Avoid woody growth; look for mature green growth and take cuttings of about 10 centimeter
(4 in) in length. Place in sandy soil to strike, keeping the soil moist. As with the seeds, bright shade is the best positioning while the roots develop. / Rooted layers can be dug up and replanted. You'll see roots developing where stems touch the ground.

Rue likes poor soil but it must be well drained and deep. Sandy or graveled soils are the best choices. If the soil is too rich for the rue, its growth will be excessive. Acidic, neutral, or alkaline soil is workable with pH ranges 6.5 to 8.5.

Seed Planting Depth, Spacing and Procedure: You only have to drop the seeds on the soil and cover them by using a rake.
If you don't have garden space or have heavy soil, container growth is a good option for rue. Choose a pot that's around 12 to 16 inches wide and deep, and make sure it has drainage holes. An unglazed clay container is ideal because it will allow excess soil moisture to escape through its walls.

Best Companion Plants and Plants that Hinder: Rue is a good companion plant itself as it tends to repel pests as well as a variety of animals, including dogs and cats. The bluish foliage of rue plants marries well with plants that have golden foliage, such as the gold cultivars of oregano, sage, or thyme. These herbs all like the same sunny, dry conditions and well-drained soil that rue thrives in, so they blend well in mixed containers.

Rue is not compatible with basil or broccoli; don't plant it near these plants.

Crop Maintenance- Prune if it looks untidy. Cut back to the main plant shape in early spring. You can cut some leaves for aesthetic reasons in the summer. If you want to reinvigorate the plant, you must cut it half of its height after blooming.

Moisture Requirements & Solutions: A deep watering every two weeks is best from mid-autumn to mid-spring. During summer, water only if it gets very dry; let rain do most of the watering.

Weeding Needs & Solutions: interesting**-** the strong aromas of fennel, caraway seed, and wild garlic come from chemicals that can also keep weeds at bay.

In the northern portion of rue's growing zones, add a layer of mulch around the plants to protect them over the winter. Aim to do this before frost hits in the fall.

Feeding Needs/Optimal Natural Fertilizers: Rue doesn't need it. Do not fertilize rue plants because excess nutrients will cause the plants to produce more foliage at the expense of the flowers.

Pests, Diseases & Solutions: Rue doesn't have any major pest or disease issues. In fact, if you see caterpillars feeding on your rue plants, don't spray them. It's likely they are swallowtail butterfly caterpillars, which use rue as a host plant and benefit your entire garden! The primary disease issue that can affect rue is root rot from wet soils. So ensure that your plants are never waterlogged. Rue can be prone to fungal rot if there is too much summer humidity.

Harvest and Storage

When to Harvest/Number of days to maturity: Rue is often harvested to use as dried flowers. And some people make sachets out of rue and use them to deter pests, including fleas and ants. Cut a mature plant at ground level with pruners. Then, hang it in a dark, dry place to dry until the leaves become brittle. Keep the fully dried rue in an airtight container until you're ready to use it.

How to Harvest: Be careful when handling rue plants: Its sap sometimes causes photodermatitis. The sap can sometimes irritate skin or leave rashes or even burn it. It is best to wear gloves when handling rue and plan your harvest for a cloudy day or late evening.

Optimal Storage temperature and conditions:
Fresh rue leaves can be added in salads in small amounts. They're typically used as a condiment to flavor various food You can also gather some leaves before the autumn and dry them for usage during the winter.

Seed Saving: It's easy to make new rue plants via stem cuttings. This is a quick and inexpensive way to replace mature plants that are nearing the end of their life cycle, as rue plants only live around five years.
The best time to take cuttings is in the late summer from new growth, but be sure to wear protective clothing during the process. Here's how: a) Cut roughly a 6-inch piece of stem from new growth.
b) Remove any foliage on the lower half of the cutting. c) Plant the cutting in a container of moistened soilless potting mix. d) Place in a clear bag to maintain moisture. e) Keep the mix moist but not soggy.
f) Once you feel resistance when you gently tug on the stem, you'll know roots have developed.

Notes:

There are several varieties: Blue Beauty- has especially vivid blue- green leaves. Jackman's Blue- a strong blue color and a potent aroma. Variegata- leaves on this variety have some white in them.

The dried leaves are also effective when used in a sachet.

As another bitter herb that bears small yellow flowers, it's easy to confuse fenugreek with rue. However, that is an annual legume.

When mixed as a decoction, rue can be used topically to kill lice and fly larvae. Rue plant oils have a distinct, strong odor. These oils are extracted from the leaves, and are used in a range of cosmetics, fragrance products and soaps. Rue plants are also used to make a red dye.

CAUTION: Be aware that despite their past as a traditional use as a medicinal herb, rue leaves are toxic both to people and pets (by modern horticulturists to be mildly toxic if ingested). Large doses of rue can cause mild poisoning. Contact with the fresh plant may cause dermatitis in sensitive persons. The juice is a local irritant. Rue is **not to be used by pregnant women.**

Sage

Description: The plant is an herb in the genus Salvia which encompasses all the sages. Some look like a low shrub with pale, velvet-soft greyish green leaves and is a member of the Mint family. It is a hardy perennial that tastes aromatic and slightly bitter. (Sage is one of the few herbs that develops a stronger flavor when dried.) Sage can grows to a height of 24-36 inches (60-90 cm) and will be about 24 inches wide displaying pretty purple, pink, blue or white flowers on spikes in the summer that produce nutlet fruits.

Other Common Names are Amaro, Clarry, Clary, Clary Sage, Clear Eye, Cleareye, Cleere Eye, Common Clary, Europe Sage, Eyebright, Garden Clary, Orvale, See Bright, Tuylu Ada-cayi.

Both the leaves and flowers are used in flavoring and teas as well as aromatherapy applications. The plant also yields an essential oil called clary oil or muscatel sage, which is used for topical afflictions and in aromatherapy applications. Growing clary sage for home use provides all these benefits and is safe for human consumption.

Growing Instructions

Optimal Time/Temperature for Germination: it can survive in temperatures as low as zero degrees Fahrenheit so hardiness zones are 5 to 9. If you live in planting zones 5 to 8, your sage will be a perennial, growing back year after year each spring. If you're in zones 9 and further south, your sage will likely be an annual, or one-year plant. You can begin growing sage using several methods. If you've never had sage before, you can either plant fresh sage seeds (which can be temperamental) or purchase a small plant from the garden center and transplant it into your garden or a clay pot. However, if you already have an established sage plant, you can use cuttings or layering techniques to grow a new plant.

Optimal Soil Conditions: It is easy to grow, only having three major requirements - plenty of sunshine, good drainage and good air circulation. Sage grows well in rich clay loam that drains well and is rich in nitrogen. It prefers soil with a pH of 6.0 to 6.5. If you're using clay soil, try mixing in some sand and organic matter. This lightens the soil and helps with drainage. Seed Planting Depth, Spacing and Procedure: If you are transferring a sage plant into the ground, then make sure to plant it at the same level as it was in the pot. If you decide to plant seeds, they should be planted in late spring (in a bed or in a container) about 1/8 inch deep and 24 to 30 inches apart. They will take 10 to 21 days to germinate. If you do plant it in a large outdoor garden, it will spread and become large and bushy.

Best Companion Plants and Plants that Hinder: Sage grows best when it is planted with other perennial herbs, such as thyme, oregano, marjoram, and parsley. Sage attracts bees and repels cabbage butterflies.
It also grows well with carrots, strawberries, rosemary,nasturtium, and tomatoes. Do not grow Sage with : fennel, cucumber, rue, wormwood, and allium.

Crop Maintenance : Prune the older, woodier stems in early spring, after the danger of freezing is past but before new growth has really begun but only prune each stem by about a third.
Cut back the sage stems at the end of each season. While sage plants are evergreen and grow for longer than other plants, it's still best to adhere to a seasonal harvesting schedule. At the end of harvesting season (typically late September or early October), give your sage one more pruning, trimming away the older growths on the top thirds of the stems and removing no more than half of the shrub altogether. Stop harvesting the shrub during mid-fall so that it has a chance to prepare for the winter months. Begin harvesting from the plant again in the spring, once leaf production has started again.

Moisture Requirements & Solutions: Go easy with watering. When the sage plants are small, you should mist them with water to keep the soil moist. But when they reach maturity, you should only water sage when the soil surrounding the plant is dry to the touch. In fact, in some climates you won't need to water your sage at all - they'll get all the moisture they need from rainfall. Sage is a tough little plant and is very drought-tolerant.

Weeding Needs & Solutions: For Clary Sage, you do not want weed competition because studies show essential oil content is higher by removal of weeds.

Feeding Needs/Optimal Natural Fertilizers: Sage plants don't really need much fertilizer. Over-fertilizing makes them grow faster but they have a weaker flavor, defeating the purpose of growing it. Once or twice per year is enough for mature plants. Plant it with other compatible herbs and vegetables.

Pests, Diseases & Solutions: Mildew, root rot, and wilt are some diseases that are more common in sage. Avoid by watching the plants carefully during hot, humid weather and by thinning the plants regularly to increase air circulation. You can also try mulching the earth around the plant with pebbles, as this helps any moisture to evaporate more quickly. If mildew does develop on you plant, try spritzing it with a horticultural oil or sulfur spray. Sage is usually not a target for pests, but sometimes it will be affected by spider mites, thrips, and Spittlebugs. If you notice any pests, try using an insecticidal soap to keep them under control.

Harvest and Storage

When to Harvest/Number of days to maturity: Harvest the sage lightly during the first year, picking off leaves as you need them. In subsequent years, you can harvest the sage year round by cutting entire stems from the plant. Sage is considered to be at its best just before the flowers bloom, usually in mid-summer. Do your last full harvest approximately two months before the first major frost of the year. This gives any newly formed foliage enough time to mature before winter sets in. Another way to show your sage plant some extra care (and guarantee it a long life) is to limit what you harvest for the first year of the plant's life. Take as little as you can during this time, and give your sage plant the time it needs to grow fully and give you a more plentiful harvest in the coming years.

How to Harvest: Harvest in the morning, after the dew dries. To get the best harvest you can, wait until the initial moisture on the sage plant is gone - but do it before the midday sun! This is when the oils on the plant's leaves are most potent, and you'll get the best flavor out of your harvest. Sage is best harvested before the shrub starts to flower. To give your plant some extra attention, deadhead the flowers as they bloom; this clears the way for more healthy leaves. Similarly, while sage is typically an evergreen plant that can be harvested for the majority of the year, you'll get the best flavor from fresh growths in the summer months.

Pinch the sage leaves off with your fingers to harvest smaller amounts. Gathering sage in smaller amounts is an easy task: easily harvest individual leaves by pinching them off between your thumb and forefinger, right above the spot on the stem where two leaves meet. Handle your sage plant gently as you harvest to avoid bruising it. If just a few leaves won't cut it and you need a larger helping of sage, then gather up big bunches by cutting the top 6 inches (15 cm) of stem off of young shoots. To do this, use either a clean pair of scissors or pruners. By pinching off a few leaves at the stem, you're actually encouraging the sage plant to branch, which will give you a fuller shrub in the future.

Since the flavor and scent of an herb begins to deteriorate immediately after it is harvested, you'll find it easier to pick individual leaves of sage on an as-needed basis. However, when you need a bigger harvest, your sage can be preserved and stored in several ways, including hang- drying and freezing: Before you begin to dry out the sage, make sure that your leaves are clean by rinsing them under running water and removing any dead or damaged parts that you see in the process. Then, dry them with paper towels to remove excess moisture.

This is the first of a couple commonly used sage-drying techniques for you to choose from. Tie up the stems of your sage in bunches using twine or a rubber band, placing the tie closer to the cut ends of the stems, and hang them with the leafy ends down until they are fully dried. Make sure the space you hang them in is well-ventilated and warm, but out of the sun. Depending on their condition, a shed, garage, or attic could be the ideal spot to do this.

Before you hang your sage bundles, place each one inside a small paper bag leafy-ends first, and cut out the bottom of the bag or cut holes in the sides to keep the sage ventilated. This keeps your sage from collecting dust or getting contaminated while it hangs. Avoid hanging it above a stove, as odors coming from it can damage the integrity of your sage. While effective, this method of drying normally takes 2-3 weeks, up to a month, to complete.

Dry your sage in the oven. This is a good method to use if you have individual leaves instead of bundles. Place the sage leaves on a cookie sheet, arranging them so that they don't overlap, and slide the tray into the oven. Set your oven at its lowest heat possible, and leave the door to the oven open slightly so that the interior temperature stays around 90–110 °F (32–43 °C). Donot leave the oven door open if you have a gas oven; open every 5 minutes to vent the heat instead.

Check up on your sage frequently, and expect the drying process to take roughly 3-4 hours. Only do this if you can keep a close eye on the sage and the temperature within the oven, as too much heat will cause the sage leaves to lose their flavor. Once your sage is fully dried, it will easily crumble for storage. Place your dried herbs in an airtight and vapor-proof container, and store them somewhere cool, dark, and dry. Cupboards and pantries are ideal storage spots for this.

Appropriate containers for storing dried sage include jars, ziplock bags, or tupperware containers. Fully dried sage can be stored in this way for up to a year. While crushed sage can be easier to store, whole dried leaves can keep their flavor for even longer.

If you need to save pantry space or don't want to dry your sage, store it in the freezer instead. Chop up all of the sage leaves and place them in an ice cube tray filled with water, before putting the tray back in the freezer. When the sage-filled ice cubes have fully frozen, remove them from the trays and each one in plastic bags, which should also be stored in the freezer. From there, grab sage cubes for use in the kitchen as you need them.

Optimal Storage temperature and conditions: It is possible to harvest both young and mature sage leaves, but keep in mind that the younger leaves will have a better flavor and aroma when used in cooking. When harvested and dried, it can be used as a stuffing for poultry, rabbit, pork, and baked fish, and can also be used in sausage or meat loaves. In addition to being used as an aromatic herb in cooking, sage can also be used in potpourri and soap. Here are some things you can do with sage: make Parmesan and Sage Biscuits, make a Violet and Sage Cold Sore Cream, make Oatmeal and Sage Soap, make Sage and Ginger Tea.

Seed Saving: Replace the plant every three to five years because it will become woody and straggly. You can either start again with a new plant or seed, or use the old plant for cuttings or layering: To layer the plant, bend a branch of the existing sage towards the soil. Use some wire to pin the branch to the ground, about 4 inches from the tip. After about four weeks, roots will begin to form. Then you can cut the branch and transplant the newly formed sage plant to another location.

To use cuttings, cut the top 3 inches from the branch of an existing sage plant. Strip the lower leaves from the stem, or use a scissors to cut them off. Dip the ends in rooting hormone, then place in sterile sand. Wait 4 to 6 weeks for roots to form, then move to a pot and later the garden. It is best to take cuttings of plants in early spring, just after you notice some new growth.

Growing your sage from seed, will likely take a couple years to fully mature.

Notes:
Ideally, sage plants should grow in full sun, but they will also survive in light shade in hotter areas.
If it's exposed to too much shade, it will grow leggy and flop over. If indoors without much sunlight, you can use fluorescent lights. Standard fluorescent lamps should be 2 - 4 in. above the plants. However, high output fluorescent, compact fluorescent, or high intensity discharge (metal halide or high pressure sodium) plant growing lights work better and should be placed 2–4 feet (0.6–1.2 m) about the plants.

Sassafras Tree

Description: A native deciduous tree with all parts of the plant fragrant. It blooms in early spring, with clusters of yellow flowers about 1–2" long and up to ½" in diameter. Leaves are 3"–7" long, bright to medium green in summer changing to enchanting colors of yellow, deep orange, scarlet and purple in the fall. The species are unusual in having three distinct leaf patterns on the same plant: unlobed oval, bilobed (mitten-shaped), and trilobed (three-pronged). Sassafras leaves are polymorphic, meaning that a single tree can have leaves in different shapes. The three lobed leaves are the most common leaf shape however, some sassafras trees have five or seven lobed leaves. The 1/2" fruit is a drupe that's blue-black when ripe with each containing a single seed. In winter landscapes, sassafras trees are identified by their attractive reddish-gray bark that is smooth in immature trees and gradually develops interlacing furrows and ridges as it matures.

The sassafras grows to a height of 30–60' and a spread of 25–40' at maturity. This tree grows at a medium to fast rate, with height increases of anywhere from 13" to more than 24" per year. Though it grows in a rounded shape, it can be grown as a single-trunk tree or a dense, bushy thicket. Throughout its natural range, the roots and bark were once used as a regular spring tonic. Family classification is from the Lauraceae family (the laurels). Sassafras albidum and Sassafras hesperia are dioecious with male and female flowers on separate trees, while Sassafras tzumu and Sassafras randaiense have male and female flowers occurring on the same trees. Sassafras Hesperia is extinct (known only from fossils).

Growing Instructions

Optimal Time/Temperature for Germination: Sassafras is commonly found in open woods, along fences, or in fields. It grows well in moist, well-drained, or sandy loam soils and tolerates a variety of soil types, attaining a maximum in southern and wetter areas of distribution. Be sure to remove any shoots that develop for a single-trunk tree. Growing zones are 4 to 9. The tree is also vulnerable to ice storm damage. Sassafras has a disproportionally slender trunk that can be as thin as six to eight inches in diameter when growing as an understory tree, so it may be susceptible to wind breakage.

Optimal Soil Conditions: Full sun and partial shade are best for this tree, meaning it prefers a minimum of four hours of direct, unfiltered sunlight each day. It grows well in moist, well-drained, or sandy loam soils and tolerates a variety of soil types, attaining a maximum in southern and wetter areas of distribution It has some tolerance to drought and salt. Preferred soil pH is 6.0 to 7.0. Since Sassafras prefers neutral to slightly acidic soil, if the leaves turn chlorotic, the soil might be too alkaline.

Seed Planting Depth, Spacing and Procedure: The only regular care it requires is when you grow it as a specimen tree. In that case you need to keep removing the root suckers by cutting them at ground level, or else it will have a shrubby appearance or grow into a thicket. Sassafras stands can be pruned to give the thickets a neater appearance but it's not essential for tree health.

Best Companion Plants and Plants that Hinder: You will often find sassafras trees growing near flowering dogwoods, eastern red cedars, beech, and sugar maple trees. The Black Walnut tree would most likely challenge a resisting Sassafras tree.

Crop Maintenance

Moisture Requirements & Solutions: Young trees need to be watered until they are established. During the first growing season, if it doesn't rain, water the tree once or twice a week. Make sure to water it deeply so that the water reaches all the way down to the tree's deep tap root.

Weeding Needs & Solutions: It is a tree that colonizes an area, sending up small sassafras in the surroundings. This is not a big deal if you mow or weed regularly, but if you want a low-maintenance tree, this may not be the one for you.

Feeding Needs/Optimal Natural Fertilizers: Do not fertilize a newly planted tree during the first year, which can stunt its growth. In averagely fertile soil, established trees usually do not need fertilizer, but if your soil lacks nutrients, feed it at the beginning of the growing season.

Pests, Diseases & Solutions: As a tree that is native to North America, sassafras is generally not affected by many pests and diseases. Two invasive pests from Asia, however, can be a problem: Japanese beetles and the redbay ambrosia beetle, which is not directly damaging the tree, but transmits laurel wilt disease, a deadly fungus, into the sapwood of the tree. When you notice that your sassafras tree is wilting and dying from the fungus, it is unfortunately already too late.

The other serious pest is the sassafras borer. The larvae bore holes in the bark of the terminal ("head" of a tree branch) and the tips of small branches, resulting in wilting of the foliage. Young trees are especially susceptible and might die if the infestation is major. Woodpeckers might come to your rescue by eating small numbers of the larvae and pupae. For a non-chemical control measure, remove infested terminals and branches, in which the female beetles have laid their eggs. Safely dispose of the branches in the trash or destroy them to break the two- year life cycle of the borer.

Harvest and Storage

When to Harvest/Number of days to maturity: Sassafras trees rarely live longer than 30 years. For more potent roots, harvest in mid to late February or early March. This way the sap is still concentrated in the roots of the sassafras tree, providing you with a more potent root.

How to Harvest: Keep in mind that should do this on a day when it is warm enough that the ground is not frozen. If the ground is frozen you will not manage much of a harvest, as the ground will be rock-solid hard and fight your shovel. Have a cutting tool and gloves for collecting the sassafras roots (even small ones) from the dirt, plus a bucket of water. Shoving the tree over will more than likely cause some breakage at the roots.
Bear in mind to only harvest what you need and to leave a good number of roots in tact so the tree will continue to grow. The sassafras roots maybe different colors; some may be red, some may be white. The water can be very handy in pre-rinsing the roots before getting home. You will know you have the right tree for sure once you have broken a root, and sniff. It will smell much like black licorice; remember it was once used to flavor candies.

Optimal Storage temperature and conditions: How much you want to harvest really depends on your needs and plans for the use of your sassafras. Now that you have harvested your Sassafras, it is time to clean and sanitize your sink. / Shake the Sassafras roots over a compost bin - preferably - or over a trash can to shake out as much loose dirt as you can. / Then, put the roots in the sink and fill the sink with lukewarm water just enough to cover the roots; no need to waste water. / Scrub brush the roots to remove as much dirt as possible. / Place your clean Sassafras roots into a large bowl or container. / If you choose to remove the bark, you can, although there is as much flavor in the bark as well as the roots. / Cut 1 inch lengths for making tea with pruning shears.

You need to ensure that it is thoroughly dried in order to store for long term use. A dehydrator works great for drying sassafras. If you do not have a dehydrator, there is no need to purchase one. You can set your oven to 120°F, place a cookie sheet with your roots in the oven, and dry them this way. Watch them closely to be sure you don't burn them, but also be sure the root is completely dried. Sassafras is susceptible to mold, and drying thoroughly is one way to prevent it.

Another alternative drying method is screen drying. This will come in handy if you are living off the grid and do not want to use gas or electricity. Simple screens like the ones in your window are all that you need. You can prop these up on blocks, though only at the edges, as it is important for the air to flow all around the screens. Place these in a cool dark place; a barn or cellar will work. Watch your sassafras roots closely. It could be days or weeks until they are completely dry. In general, depending on the type of roots, the size of roots, and their moisture content, it takes about 3 to 15 days for them to thoroughly dry with the screen method. Dried roots will store for a year. They are best kept in an airtight container. An oxygen absorbent packet will prolong the life of dry goods as well. It is always best to store these in a cool dry place. Light can contribute to the spoilage of any stored foods if you are not careful.

Sassafras roots are available online if you can’t harvest so you can enjoy making your tea (known as spring tonic).

Seed Saving: Because of their large taproot, sassafras is difficult to transplant. Container-grown nursery trees have the best chances of survival. Birds usually distribute the seeds. Sassafras seeds typically germinate the following spring after being planted in soil or landing on the ground.

Notes- It is the main ingredient in traditional root beer and a gumbo from Louisana. The leaves and flowers have also been used in salads and to flavor fats or cure meats.

The wood of sassafras trees has been used as a material for building ships and furniture in China, Europe, and the United States, and sassafras played an important role in the history of the European colonization of the American continent in the 16th and 17th centuries. Sassafras twigs have been used as toothbrushes and fire starters.

The leaves, bark, twigs, stems, and fruits are eaten by birds and mammals in small quantities. For most animals, sassafras is not consumed in large enough quantities to be important, although it is an important deer food in some areas. Sassafras leaves and twigs are consumed by white-tailed
deer and porcupines. Other sassafras leaf browsers include groundhogs, marsh rabbits, and American black bears. American beavers will cut sassafras stems. Sassafras fruits are eaten by `many species' of birds and small mammals also.

Notice: Sassafras is no longer used in commercially produced root beer since sassafras oil was banned for use in commercially mass-produced foods and drugs by the FDA in 1960 due to health concerns about the carcinogenicity of safrole, a major constituent of sassafras oil, in animal studies.

Steam distillation of dried root bark produces an essential oil which has a high safrole content, as well as significant amounts of varying other chemicals such as camphor eugenol (including 5- methoxyeugenol), asarone, and various sesquiterpenes. (Many other trees contain similarly high percentages and their extracted oils are sometimes referred to as sassafras oil, which once was extensively used as a fragrance in perfumes and soaps, food and for aromatherapy.) Safrole is a precursor for the clandestine manufacture of the drugs MDA and MDMA, and as such, sales and import of sassafras oil (as a safrole-containing mixture of above-threshold concentration) are heavily restricted in the US).

In 1997, a NIH report stated Filé powder, also known as gumbo filé, is an herbal powder made from the dried and ground leaves of the sassafras tree (Sassafras albidum) that herbal products derived from sassafras don't contain any detectable amounts of safrole.

Extra entry- `Filé powder' is an herbal powder made from the dried and ground springtime leaves of the sassafras tree (Sassafras albidum). The leaves do not contain enough safrole to even be detected by normal testing, and filé powder has been declared safe for human consumption. A true "filé gumbo" should have both filé powder and okra. It should be added to the gumbo off the heat just before serving, or serve it at the table for guests to sprinkle over their gumbo. You can find it in most supermarkets and many specialty food stores or online food retailers.

Savory

Description: This herb is highly aromatic and of the Lamiaceae, mint family. It is also related to rosemary and thyme. It's woody at the base and forms a compact bush about 1 to 1½ feet in height. The leaves are long, soft, linear, and green at about 1 in.
Savory flowers in mid-July, with white or pale pink has ¼ inch blooms grouped in terminal spikes. With its many antioxidants and intense essential oils, Savory has had medicinal uses for a long time.

Growing Instructions

Optimal Time/Temperature for Germination: Plant savory in growing zones 6 to 9. If you grow the annual variety you can plant in the garden. Some gardeners grow the perennial in pots so they can move them to warmer areas when the temperature drops. Whether you plant the annual or perennial variety, plant in spring after the last frost. Savory seed germinates quickly. Plant in flats at a

depth of 1/8 inch and then transplant the seedlings after all danger of frost works best. Harden off for a week and then put in the garden when seedlings are 4-6 weeks old. Seeds require some light for germination, so be sure not to cover them deeply with soil.

Optimal Soil Conditions: Choose a spot in full sun, though savory can survive in part sun. Savory doesn't like wet feet, so give it well-drained soil that's rich in organic matter. Soil pH should be around 6.7 and 7.3. You can plant savory 12 to 18 inches apart to ensure proper airflow but one plant per year to harvest can be sufficient for one household. That includes the harvest into a food dryer to store and use in cooking throughout the year.

Seed Planting Depth, Spacing and Procedure: There are three ways to propagate savory: Sow seeds in autumn or spring in pots. Plant seeds 1/8 inch deep and thin later to stand 8" apart, in rows 18" apart. Keep young seedlings well watered. If potted, have one plant per pot and transfer into the garden or a bigger pot when ready. / Divide existing plants in the spring or autumn. / Take cuttings in the summer and bring on in a pot.

Best Companion Plants and Plants that Hinder: Try growing savory with the following plants: Beans, Melons, Onions, Garlic, and Tomato. Don't grow savory with cucumber.

Crop Maintenance

Moisture Requirements & Solutions: Water young plants well. Once savory is well established, it will tolerate a little dry soil.

Weeding Needs & Solutions: Many of the weeding problems faced by gardeners result from overworking the soil. And the biggest culprit when it comes to that issue is the rototiller. Mulching a garden correctly is one of the easiest and most effective methods for creating a weedless and healthy garden. The simple truth is this: bare soil = weeds. In the growing rows, use a 2 to 4 in. combination of compost, straw and shredded leaves. From late fall to early spring, use cover crops to keep the soil protected and replenish the nutrients as well. A simple 5 to 10 minute a day stroll through your garden is the best line of defense for weed control.

Feeding Needs/Optimal Natural Fertilizers: Dig in well-rotted manure or general fertilizer before sowing seed or planting seedlings. Savory doesn't need further feeding except for a side feed of well-rotted manure mid-season.

Pests, Diseases & Solutions: Savory doesn't have many pests and even fewer diseases. The secret is to practice good garden hygiene. If any of your plants get infested and you can't save it, pull the plant and throw it in the garbage or burn it. Don't place it in the compost heap.

Leafhoppers are little insects everywhere and it's often a matter of control rather than avoiding them. Try to identify leafhoppers early because they suck the sap from the plants, leaving them yellow and stunted. I use diatomaceous earth or insecticidal soap to remedy. / Spider mites live in clusters on the undersides of growing savory leaves. They suck the plant's fluids and can wreak havoc on your garden. Cut any leaves that are infested and throw in the garbage. Neem oil can keep them away. / Aphids can destroy a plant if you let their population grow. They literally suck the life from your plant. Neem oil applied three times with three weeks in between each application may take a while, so be vigilant and check for aphids throughout the season. / Leaf roller caterpillars will roll leaves up and feed on the inner surface. They eat through the leaf as they mature. Use a good organic insecticide or if you see one on a leaf, pull the it off and throw it in the garbage.

Harvest and Storage

When to Harvest/Number of days to maturity: Pick the leaves right before flowering when plants are at least 6 inches tall. Pick savory leaves in the afternoon when the essential oils are strongest.

How to Harvest: Keeping the plant pruned back ensures a continued harvest. When they insist on flowering, cut the whole plant and put it on a screen or paper in a warm shady place. To speed the drying time, try chopping into small pieces. When dry, strip the leaves and store them in airtight jars or tins.

Optimal Storage temperature and conditions: Keep fresh leaves in a clean plastic bag in the refrigerator or chop finely, add a little water and freeze in ice cubes.
Some people's favorite method is to dry and use in a herb mixture or on its own to flavor cooking right through the year.

Savory is popular in teas, herbed butters, and flavored vinegars. It complements beef soup and stews, chicken soup, eggs, green beans, peas, rutabagas, asparagus, onions, cabbage, and lentils. Many use savory when cooking liver, fish, and game. Winter savory, which has a stronger presence, works well with game that has a notable flavor. (use summer savory for fresh beans and winter savory for dried beans.) Add finely chopped leaves to horseradish sauce or make a summer jelly from grape juice and a little finely chopped savory.

Seed Saving: When the seed begins to turn brown, harvest them for next year's planting. Some think it's best to start seeds in a controlled environment. Others will choose, since Savory readily self-seeds and can come back year after year, to allow a few flowers to go to seed in the garden.

Notes-

Summer savory is an annual variety that has a pleasing aroma that reminds me of mint combined with thyme. It's the most common variety available and indispensable in the kitchen. Winter savory is a perennial. It has a less pleasing texture than the annual variety and needs protection in winter if you live in a cold area. It grows to about 12 inches and needs regular pruning because it can get a bit leggy.

Winter savory is better for thick stews and meat dishes – perfect for a homey meal on a cold night.

If you like lemony herbs, then this is one for you. Lemon savory is a tender perennial, so if you live in an area that gets cold, it's best to grow it in a pot so you can move it to warm areas when necessary. You can dry the leaves and they will retain their beautiful lemon flavor and aroma. Creeping savory is a hardy perennial that can tolerate cold as well as humidity and heat. It needs good drainage and oodles of sunshine.

Rubbing a sprig of savory on an insect bite will bring instant relief.

The poet Virgil recommended planting near beehives to flavor honey.

Spicebush Shrub

Description:
Native to the low woods, stream banks, and wetlands of the eastern United States and Canada, spicebush is an easy-to-grow, deciduous shrub in the Lauraceae family. It is adaptable to a wide range of growing conditions and is low-maintenance once it is established.

Spicebush is an aromatic deciduous shrub. The little yellowish flowers have clusters of 2-5 flowers and bloom in the spring, As its name suggests, spicebush leaves and twigs give off a spicy fragrance and flavor when crushed. There is a species of laurel known as hairy spicebush, that has hairy leaves. But if the leaves are smooth, then you have northern spicebush. The leaves grow up to 5" long and nearly 3" wide. Leaves also have smooth edges.
With autumn, the leaves turn a striking golden yellow. The berrylike 1 cm long drupes are oblong and have a mild allspice flavor. When dried and crushed its bark can pass for a mild cinnamon substitute. Spicebush trunks, branches, and branchlets are also unique. The bark ranges in color from a shiny brown to an olive green. The trunk and branches are also distinguishable because they are covered in small white lenticels. From a distance, these little lenticels along the branches look like salt sprinkled on a pretzel. These lenticels also act as pores, allowing for the exchange of gases.
Not only do the lenticels look cool, but they also help the plant breathe.
Known as northern spicebush, wild allspice, and Benjamin bush, the shrub is not only beneficial to humans, but insects and woodland mammals as well.

Growing Instructions
Spicebush is dioecious, meaning male and female flowers are present on separate plants. Male spicebush grows clusters of yellow-green flowers in the spring, whereas the female spicebush can be identified by the bright red berries that adorn the bush in the late summer months. The Hardiness zones are 4 to 9 . It is accustomed to cold winters, warm springs, and mild to hot summers - although thanks to its adaptable nature it can tolerate a wide range of Optimal Time/Temperature for Germination:conditions. It grows rapidly in wet conditions and tolerates humid conditions more readily than overly dry conditions.
Although it can be grown from seed with relative ease, Spicebush is not as easily propagated otherwise. It can be successfully propagated by softwood cuttings, although a successful propagation can be difficult. The best time to take softwood cuttings for spicebush propagation is in the late summer or autumn. Use a rooting hormone for best results, and plant the cutting in a moistened mixture of perlite and soilless mix. Softwood cuttings need high humidity in order to sprout roots, so keep the newly potted softwood cutting in a plastic bag to create a humid environment until roots develop.

Fortunately, the berries that adorn the female plants contain its seeds, so if you have a female spicebush (or know someone that does!) it is easy to grow new plants.
If by seed, place fresh seed from harvest buried in a pot with a silty soil, and allow the soil microbes to break down the flesh of the fruit over the fall and winter. Leave this pot outdoors buried halfway underground so it is not subjected to the coldest winter temperatures. In early spring, strain the silty soil from the seeds by using a hose on a jet setting and a strainer; washing the silty soil away leaving only the seeds and sow in early spring.

Optimal Soil Conditions:
Spicebush grows best in full sun to partial shade conditions. If you're trying to find a place in your yard for them in the Deep South, try the Northside, Eastside, or Westside of your home where they will receive shade for part of the day.
As a 'facultative wetland plant' (which means that it mostly occurs in wetlands) spicebush thrives in moist- well draining soils. The shrub doesn't do as well near salt or brackish water. The shrub often grows in bottomlands and on slopes, where there is plenty of runoff. It tolerates both alkaline and acidic (5.0 to 8.0) soils well.

Seed Planting Depth, Spacing and Procedure:
The shrubs either produce male - pollen bearing flowers or female – nectar producing flowers. Most nurseries will not have the sex of the shrub identified, so be sure to plant at least 3 to 5 to heighten the probability you get a mix of male and female flowering trees. Spicebush can grow 6 to 12 ft. tall. A good rule of thumb is to leave 8-12 feet between seeds. Spicebush can get wide, but rarely eclipses 12 feet, and very rarely reaches 15 feet. You also want to plant the seeds pretty shallow. Just ¼" deep in the soil is deep enough for spicebush to grow. Remember, in nature, seeds grow after dropping to the ground, so they don't need to be buried deep to thrive.

Best Companion Plants: Bunnies may eat seedlings so you can repel rabbits since they don't like: marigolds, lavender, sage, columbine, delphinium, bee balm, lemon balm, and catnip.
You're likely to find Spicebush in an edge habitat among fellow swamp dwellers such as Jewelweed, Joe-Pye-Weed, some ferns and sedges and of course, the not-so-picky Poison Ivy. Even as natural undergrowth, you may find the shrub beneath Hemlock and Maple trees.

Crop Maintenance:
Spicebush does not require heavy pruning and it is usually only for aesthetic reasons and to help it maintain its shape. The best time to prune spicebush is after the shrub has finished flowering in the spring.

Moisture Requirements & Solutions:
During the first growing season, spicebush should be watered regularly to help it establish a strong root system. Once established, spicebush usually does not require extra watering outside of the regular rainfall in its growing zones. It is widely considered to be an adaptable shrub and can tolerate a wide range of moisture conditions including short periods of dry soil or very wet soil.

In historically bad or severe droughts, simply set your sprinkler up on the spicebush and give 2 inches of water every 14 days in which there isn't 1" of rain fall. (This is just watering twice a month during exceptional dry spells.) While they should survive without this watering, the watering will increase growth rate and increase the size of the fruits for wildlife as well as the density of flowers for the following spring.

Weeding Needs & Solutions: Taking steps to reduce future weed growth, near young trees means to pull the weeds out and mulch covering nearby to keep them down.

Feeding Needs/Optimal Natural Fertilizers: Spicebush should be fertilized twice during each growing season. Fertilize in the early spring and then again in midsummer.

Pests, Diseases & Solutions: They are supremely resistant to deer grazing and tolerate Black Walnut as well. However, it is susceptible to `laurel wilt' which is caused by a deadly fungus that is introduced to the shrub via redbay ambrosia beetle. Symptoms of laurel wilt include brown leaves and spikes of ambrosia beetle sawdust sticking out of the trunk of the laurel family related trees. (meaning browning from the vascular tissue being infected is not being

able to get water to the leaves from the roots.) Infected trees generally die within months, often showing a full crown of dead, brown leaves. the best way to prevent the spread of laurel wilt is to avoid transporting any firewood.
Current management involves sanitation (chipping, burning) of infested materials.

Harvest and Storage

When to Harvest/Number of days to maturity: Harvest the berries mid August to mid October once they have turned very red.

How to Harvest: Once berries are bright red, pick individually by hand.
Commercial berry containers are great for storing fruit because the rigid plastic keeps fruit from getting crushed and they also have small holes in them which control the humidity in the container. This slows the fruit from drying out too quickly, but allows air circulation to reduce molding and keep well in re-used commercial berry containers in the refrigerator for one to two weeks. It is ideal to use this fruit fresh, so if at all possible, use them fresh

Optimal Storage temperature and conditions:
In the modern kitchen, the edible seed can be used to make tea, in baking Gingerbread for example, ice cream, rice pudding, and flavoring of meat. Its twigs, buds, flowers, leaves, unripe and ripe fruit are all edible, and intensely aromatic. Some folks have found that spicebush leaves dry well without using a dehydrator or bags. Placing them on trays in an open environment will dry them, but the succulence and oils of the leaves never quite depart, resulting in a dried leaf that will spoil if stored in jars. You can try the berries in an oven on the lowest setting. Dry them until they are dark red to black, feel completely dry all the way through, and you can bite through them easily. Frozen fruits just come out dark and mushy, but if you really need to freeze them you can, knowing that the texture will be greatly compromised upon thawing.

Nutrients will be preserved. Spread berries in a single layer on a cookie sheet and place in freezer for 1 day. Once frozen, repackage them into zipping freezer baggies (3 mils or thicker) or glass jars to keep them from drying out, remove as much air as possible from the baggie, label and store in freezer until needed—no more than 1 year. Avoid freezing, thawing and refreezing as might happen in a door of a freezer.

Seed Saving:
Fresh seeds are best when it comes to growing spicebush from seed. At harvest time, remove the seed from inside by squeezing or cutting open. Sow the seeds immediately after harvesting in a pot or directly in the garden bed. Germination will occur in the spring of the following year.

Notes:
There are at least three cultivators of spicebush that have been developed, although they are not widely available for purchase: Lindera benzoin 'Rubra' is a male cultivator that is characterized by red flowers. Lindera benzoin 'Xandthocarpa' is a female cultivator that is characterized by yellow-orange berries. Lindera benzoin 'Green Gold' is a male cultivator that is characterized by large ornamental flowers.

In foraging, be sure about Spiceberry because the Flowering dogwood and Pondberry are similar look-a-likes.

Spicebush is also a host plant for the caterpillars of the spicebush swallowtail butterfly, the promethea moth also known as the spicebush moth, and the eastern tiger swallowtail. A spicebush in your pollinator garden is an excellent way to attract these three pollinators.

Stevia

Description: Growing stevia is a fun and easy process. Watch your stevia transform from a seedling into an 18 in (46 cm) bush. This tender white flowering plant is in the Asteraceae (Aster) family and is a perennial herb/shrub. However, the leaves stop producing quite as much after year two. This is why many recommend that you replant every two years. Medium-green sage-like leaves are serrated and ovate and grow opposite one another on a rangy stem. You've probably heard about the health benefits of the stevia plant (stevia rebaudiana). Also known as sweet leaf, the plant's leaves can be used as a natural sweetener and as a sugar substitute.

Growing Instructions

Optimal Time/Temperature for Germination: Stevia is very difficult to grow from seeds. Contact your local nursery to purchase a seedling. If you have trouble finding stevia plants in your local area, search online for stevia growers who are willing to ship their seedlings. Purchase 3- 5 stevia plants if you want a full year's supply of stevia. Small stevia seedlings are easily damaged by frosts and low temperatures. Leave the stevia seedlings in their small pots until the nighttime temperatures are consistently above 50 °F (10 °C) for a week. If the temperatures in your area fall below 32 °F (0 °C) at any point during the year, plant each stevia seedling in a pot that is 18 inches (46 cm) wide and 18 inches (46 cm) long rather than outdoors and carry your pots inside and place them by a sunny window. Once the temperatures are consistently above 32 °F (0 °C), shift the pots back outside. In hardiness zones 8 to 11, stevia is considered a winter hardy plant, and can grow with a winter mulch. If you don't live in one of these warmer zones, you can grow and prepare healthy parent plants to overwinter indoors and plant outside in the spring.

Optimal Soil Conditions: Purchase seedlings from a nursery and plant them in a warm and well- drained area. The plants are fairly low maintenance. Stevia grows best in areas that have good drainage and receive full sun. Choose a place that doesn't have puddles of water after rain as this indicates that there isn't good drainage. Avoid choosing an area that is mostly shaded. If you live in a hot climate, it is fine to plant the stevia in an area that receives slight afternoon shade. Stevia does well in loose, loamy soil. You should add compost to the soil to increase the drainage as well as to increase the nutrient content before planting. It's best to add compost 2-3 weeks before planting. Preferred soil pH is 6.2 to 7.2

Seed Planting Depth, Spacing and Procedure: Turn the pot upside down to remove the stevia plant. Place one hand over the soil and around the stevia to support the plant. Tip the pot over and gently use your other hand to pull the pot away from the soil and roots. If the stevia plant isn't coming out, try gently tapping on the base of the pot to release the soil. Use a trowel to dig a hole into your soil that is slightly bigger than the roots of your plant. Place the stevia in the hole and push soil around the roots so that it sits upright. Leave about 18 inches (46 cm) between your plants to give the seedlings room to grow. If you are planting rows of stevia, leave about 22 inches (56 cm) between each row to give room for the plants to grow to their full size.

Best Companion Plants: Plants that stevia works the best with are marjoram, sweet woodruff, lemon verbena, and thyme.

Crop Maintenance Whenever pruning any plant in your garden, first ensure the blades of your scissors or shears are sterile enough to prevent spreading diseases. Wipe the blades regularly with a little alcohol. Alternatively, wash them with soap or disinfectant and hot water. Trim the top 6 inches (15 cm) of the bush in spring. Pruning your stevia will encourage it to grow more branches and leaves. Use secateurs to cut off the top 6 inches (15 cm) of the bush. Leave the sides of the bush to continue growing.

Trick early frosts by covering your stevia plants. The goal of extending your harvest time out as far as possible is to achieve maximum sweetness. Stevia leaves become sweeter into autumn as temperatures drop and daylight hours decrease. You can help your plants gain sweetness by shielding them from too much cold during early frosts. There are a variety of ways to shield plants from the cold: Use mulch and insulating straw built up around the bases of the plants; Use a lightweight blanketing material (available from most gardening stores) over the tops of the plants; Use a polyurethane or glass cold frame; If you planted your stevia in containers, simply move your plants indoors during colder spells or greenhouse.

Moisture Requirements & Solutions: It is really important not to over water the stevia plant as this can kill it. Touch the soil around the roots of the plant and if it feels dry, lightly water it. Avoid creating puddles of water in the soil. If you live in a hot climate, you will need to dampen the soil every few days. You do need to water your plants regularly. The plant perks up fast once you give it a drink of water. However, wilting does apply stress to the plant, so avoid it as much as possible.

Weeding Needs & Solutions: Don't forget that mulch also suppresses weeds. It's always a smart idea to mulch around stevia plants. Mulching helps to prevent the soil from drying out on hot summer days. Another benefit of mulching is that it helps to regulate the soil temperature. In the hot days, it keeps the soil cooler but keeps the soil warmer during the cooler days.

Feeding Needs/Optimal Natural Fertilizers: Add organic fertilizer or compost to the soil once per year. Stevia plants grow best when they are given plenty of nutrients. Follow the instructions on the packet and add the amount of fertilizer or compost suggested around the base of your plants. It is important not to add more fertilizer to the soil than the instructions suggest as this can harm the stevia.

Pests, Diseases & Solutions: Stevia doesn't suffer from too many diseases or pests, but there are a few that you should remember. Alternaria Leaf Spot- causes reddish, round, small spots with white or grey centers on the leaves and midrib. Sometimes, the lesions encircle the stems, causing the plant to wilt. It gets worse in warm or humid weather. Make sure that you don't get water on the foliage and always remove infected plant parts. Keep the plants apart for air circulation.

Botrytis- a nasty fungus that leads to grey mold forming on the stems, leaves, flowers, and all parts of the plant. It loves cool, wet weather conditions. If you notice this fungus developing, remove all affected parts of the plant and don't water at night.

Damping off- common problems when you start the plants from seeds. At first, the seedlings look healthy, but then they wilt all of a sudden. Damping-off is a fungus that typically appears when the soil is to wet or you have too much nitrogen in your soil. It's vital that you keep seedlings moist but avoid overwatering. Never over-fertilize your seedlings and quickly thin the seedlings to avoid overcrowding. Also, wash containers before you reuse them.

Aphids- tiny little insects that can be red, black, green, yellow, brown, gray, or peach scored. They suck on the leaves, typically clinging to the underside of the leaves. Then, they leave a sticky residue that attracts ants. You can knock aphids off of the leaves with a jet of water from your hose. Another option is to use insecticidal soap on the leaves.

Slugs- leave big holes in the foliage or eat the entire leaf. You'll find slime trails in the morning; slugs are more active, eating at night. At night, go into your garden and try to hand-pick them off of your plant. Try attracting them to traps made of either cornmeal.

Harvest and Storage

When to Harvest/Number of days to maturity: The stevia leaves are usually at their sweetest just before the plant blossoms. This is usually at the end of summer or in early fall. Each time you check your plants through the main growing season (summer), look for buds at the tips of this flowering plant and pinch them off with the nails of your index finger and thumb before they can bloom. While this prevents flavor being diverted from the leaves, it also stops your plants becoming 'leggy', so they end up bushier with more leaves to harvest. Extending out the time of your harvest will increase the sweetness of your crop but it's also a gamble. Don't leave it too long, because your stevia plants won't tolerate a severe frost. Be sure to harvest before the first killer frost hits your plants.

How to Harvest: Pick off the leaves and use them as desired or harvest leaves with a snip or garden scissors. If you want the plant to continue growing, don't pick more than one-third of the leaves at one time. If you are cutting branches, apply the same principle. Only cut off ⅓ of the branches. The best time is to harvest is in the morning because the plant has a high sugar content.

Optimal Storage temperature and conditions: Use leaves fresh; leaves will keep a couple of days wrapped in a damp paper towel placed in a perforated plastic bag in the crisper of a refrigerator. / You can also dry it. Cut the whole stems, wash them, and hang them to dry. Another option is to put them on a non- metal screening outside to dry on a sunny day. Typically, they dry in one day. If you have a food dehydrator, you can use one of those as well. Once dried and crisp, you can crush the leaves by hand or use a food processor to grind into a powder form. Homegrown stevia powder should be stored in an airtight container.

Leaves can be used fresh or dry to sweeten beverages, cereals, fruits, salad dressing, yogurt, teas, smoothies, as a sweet snack, and in most creamy desserts. One-eighth teaspoon of dried stevia leaves equals 1 teaspoon of sugar.

Seed Saving: Seeds germinate in 14 to 21 days when kept moist and warm. It's generally easier to start plants from 4 to 6-inch tip cuttings. Dip cut ends in a liquid rooting hormone and place in organic potting soil. Keep the air temperature 70°F at night and warmer during the day.

Notes-
Stevia leaves are 30 to 40 times sweeter than granulated sugar and have almost no calories.

Sweet Mace

Description: The genus Tagetes is classified in the sunflower family of Asteraceae. Pleasant to the eyes and wafts of licorice-anise from the blossoms of Sweet Mace are a great addition to our gardens. In fall, if the growing season is long enough, the tips of the stems bear clusters of 3/8-inch golden yellow-orange flowers. The flowers are hermaphroditic (have both male and female organs) and are pollinated by insects. The deciduous foliage (though there is an evergreen species) has greenish bronzy stems that the small, lance-shaped, glossy, green leaves attach to the plant's upright growth habit.
These this tender perennial bushy plants can grow 12-36 in. high. Sweet Mace still has medicinal uses in many countries. It is not related to French tarragon at all.

This ancient herb has many common names: Tagetes lucida, Spanish Tarragon, Mexican Mint Marigold, Winter tarragon, Mint-scented marigold, Root beer plant, Mexican marigold mint, Yerba Anise, Pericon, Texas tarragon, Mexican' tarragon, Cloud plant, Coronilla, Sweet marigold, and Spanish tarragon. "Mexican mint marigold" is the most common.

Growing Instructions

Optimal Time/Temperature for Germination: Sweet Mace is not frost hardy. If going by seed, start indoors in late winter 6 to 8 weeks before the last frost date as germination takes up to 10 days. Later, transplant outside once temperatures have warmed to an ideal 75-80 F. Better growing zones are 8 to 11. North of hardiness Zone 8, it is often raised as an annual. Especially in the North, you may prefer to purchase young plants instead of raising them from seed. The plants are grown much as garden marigolds are, but from seed, they take much longer to flower–6 months compared to as little as 6 weeks for garden marigolds. It will grow easily in Zones 6 and 7, if mulched well in the fall. The plant expands into a small clump in the second year and can withstand temperatures as low as 5 degrees Fahrenheit, provided it has 6 to 12 inches of straw mulch piled on after the first frost in the fall.

Optimal Soil Conditions: These easy to grow plants thrive in areas with well- drained soil including sand. For a full, well-formed plant with many blossoms, place it in full sun as it likes summer heat. In a shady garden, it will grow leggy and bear few flowers. In warm regions, such as the Gulf Coast, the Mexican mint marigold is evergreen. In cooler climates, you may be able to bring them through the winter outdoors under a heavy mulch. Where winters are really severe, pot them up before the first frost and bring them inside until warm weather returns. Soil pH Preference is slightly acidic to neutral which is 6.1 to 7.5

Seed Planting Depth, Spacing and Procedure: If sowing seeds outdoors, can place two weeks before last frost at 1/8" Deep. Later, thin 8-12 in. apart. Space 2 to 3 ft. apart in prepared garden beds and mulch well. Grows well in containers too. Another method of propagation is by division in early spring, just when it begins to send up new growth. Keep the young divisions moist until they are established. Other gardeners will take 6 to 8 in. semi-hard cuttings from established plants in fall or early spring- strip off the lower leaves and stick the cuttings in the sand in semishade.

Keep the soil moist and warm and mist cuttings occasionally. In two weeks, gently pull on a cutting. If you feel resistance, it is rooted and can be transplanted to a pot or to a protected spot in the garden. Lastly, if stems fall over and touch the ground, they will take root, causing plants to spread.

Best Companion Plants: Other vegetables that benefit from companion planting together are basil, broad, runner, and bush beans, citrus, eggplant, peas, and tomatoes. Flowers that benefit from being close are roses, zinnia, and sage.

Crop Maintenance

Moisture Requirements & Solutions: Although this plant appreciates regular watering, it can withstand short droughts. Basically, 1" of water per week is appropriate.

Weeding Needs & Solutions: mulch well to discourage weeds and maintain moisture levels. Weeds are naturally strong competitors and those weeds that can best compete always tend to dominate is why you need to keep them away from young plants. Defining a weed is that they are plants that need to be controlled - a plant out of place and not intentionally sown, a plant growing where it is not wanted, a plant whose virtues have not yet been discovered.

Feeding Needs/Optimal Natural Fertilizers: Sweet Mace is relatively easy to grow. It has no special fertilization needs. Scratch in about an inch or two of compost upon planting.

Pests, Diseases & Solution: The plant has no persistent insect pests (an occasional grasshopper will taste a leaf) and when in flower, butterflies visit. Otherwise,
it's mostly trouble-free of disease tendencies indoor or outdoor as well. Be sure to space properly to avoid fungal issues such as botrytis. If insects such as spider mites, aphids, thrips, whiteflies, slugs, or snails are an issue, treat with an insecticidal soap.

Harvest and Storage

When to Harvest/Number of days to maturity: Begin harvesting leaves 6 to 8
weeks after transplanting outside. For best flavor, harvest in the morning when aromatic oils are at their flavorful peak.

How to Harvest: Remove spent flowers to prolong blooming period. Mature leaves are not significantly tougher or more bitter or less fragrant than the young, tender ones. The leaves may cause skin irritation so wear gloves and other protective covering when handling. Harvest the leaves before the plant blooms in the fall. You can harvest small amounts of the leaves throughout the growing season. New leaves will grow back to replace them. In the fall, you can uproot the entire plant and hang it to dry for use during the winter.

Optimal Storage temperature and conditions: Leaves are best when used fresh but may be dried and stored. To dry, tie cuttings in small bundles and hang upside down in a well-ventilated, dark room. When completely dry, remove the leaves from all stems and keep whole for storage. Crush or grind just before use.

Seed Saving: Allow seedheads to dry on plants; remove and collect the seeds; properly clean; then seed can be successfully stored.

Notes:
Sweet Mace is a darling of many renowned Southwestern chefs, some even make a pesto from it. Mexican tarragon is more delicate and should be added at the end of the cooking time. Its best flavor is from the fresh leaves, chopped and used in dishes such as chicken salad or tossed green salads. More variety of uses are as tea or a chocolate alternative.

Plant it along sidewalks and walkways as a fragrant low hedge. Mix it with other herbs and flowers in a sunny niche in a cottage garden or plant it in among rocks around a shallow pool, where its bright blooms will be reflected in the water. The flowers will attract bees and butterflies to the oasis.

The dried leaves are often used in crafts like making potpourris and sachets. Harvest the long stems just before frost when they are tipped with yellow- gold flowers. While they're still green and pliable, weave them together in groups of six or nine as you would braid hair, then tie the two ends of each group together to form a circle. Dried leaves can be removed as needed for cooking. If the wreaths are made small and interwoven with other herbs, they can be tossed whole into a soup or stew as a bouquet garni.

The flowers add long-lasting color to dried arrangements and bouquets. They are attractive combined with sweet Annie, broom, and goldenrod in harvest centerpieces, or bundle the stems with natural-colored raffia for fragrant hang-ups that add a warm ambiance to any room.

For a change of pace and scale, clip the stems short and make miniature bouquets in tiny vases. As with other marigolds, Mexican mint marigold looks good and lasts well in fresh small flower arrangements as well.

In the humid South, where French tarragon is difficult to grow, Sweet Mace is a fine culinary substitute instead of Tarragon.

Try your favorite brownie recipe and add 3 tablespoons of freshly chopped Mexican Mint Marigold leaves. You may be surprised how well the herb blends with chocolate.

Yellow dye can also be obtained from the flowers, and when the plant is dried and burnt, it is used as an incense and can repel insects.

Tarragon

Description: A perennial herb, with a growing season from late spring to early fall. Called Artemisia dracunculus, it's part of the Asteraceae family (whichincludes lettuce, sunflowers, and artichokes). Tarragon has an anise-licorice flavor that is indispensable to many French and English recipes. It can grow to a height of about 2 - I/2 feet. The plant produces a drooping head at the end of the stem which contains up to 40 yellow-green florets. French leaves are smoother, glossier, darker and more pungent and aromatic than those of the Russian plants. It requires delicate care throughout the planting and growing process. Another name is called Estragon and since Tarragon root resembles a dragon, it's also called dragon plant. Be careful not to confuse tarragon with another plant called mugwort (Artemisia vulgaris).

Growing Instructions

Optimal Time/Temperature for Germination: French Tarragon produces sterile flowers, so it can't be sown from seed in your garden. You'll need to buy a young plant or obtain a cutting from a friend or neighbor. For best results, select a young stem and cut a length of around five or six inches. Remove the leaves from the bottom third. The stem can then be placed in moist potting soil after being dipped in rooting hormone.
You can also use root division techniques. This is best done in late fall or early spring. You could cut the root ball in half and plant the division in fresh soil in containers or directly into the ground. Because tarragon is a short-lived perennial, root division every three years helps continue your tarragon production in the garden.
Hardiness Zones are 4 and up. If you live somewhere that experiences fro s t and snow each year, consider planting the tarragon in a pot that you can bring indoors during the winter. Maintain your tarragon in winter. If you live in a more temperate climate, you may be able to winter your tarragon plant with a little mulch in the fall. Simply cover the roots with about one inch (2 ½ cm) of mulch. If you live in a colder climate, your plant will die back after the first frost. To protect the roots and ensure that the plant grows back in the spring, you will want to cover the roots with mulch and trim off brown stems in late fall.

Optimal Soil Conditions: It's a drought-resistant herb and needs a well-drained, sandy, light soil for best growth. A rich, acidic, or moist soil will result in poor growth, rotting roots and a reduced flavor. Tarragon grows best in a deep, loamy soil that holds moisture, but drains well. Tarragon prefers a soil pH of 6.5, but will grow in a range between 6.5 and 7.5, (neutral). If you are growing the plant in a pot or window planter, cover a layer of gravel with ordinary potting soil mixed with some garden soil. In a garden, use a bagged garden soil that is not too high in nitrates to avoid burning out the plant's delicate roots. Avoid using peat, which is too acidic. You can also use soilless potting mixes, perlite, vermiculite, rockwool, coco peat, and Oasis Rootcubes.
Due to its temperamental nature, you will want to plant tarragon in a place where you can easily manipulate the soil and somewhat control the temperature and amount of water it receives. A raised garden or herb bed is ideal. Be sure to plant it somewhere where it can get at least 8 hours of sunlight a day.

Seed Planting Depth, Spacing and Procedure: Because its roots are delicate and do not like to be disturbed, you will need to dig a hole big enough to accommodate the size of the pot the tarragon plant is in. Ideally, when placed in the hole, the top of the soil in the pot should line up with the top of the hole. Tarragon will grow to cover about one foot (30cm) of soil in your garden or window box. Therefore, you will want to make sure that there is at least 2 to 3 feet (60-90cm) of space between it and other plants. These dimensions apply to both Russian and French tarragon.
Russian tarragon seeds should be planted about one inch (2.5cm) in the soil. (because it is so delicate, you may want to avoid planting tarragon with other herbs, such as oregano, which can spread quickly and choke it out.)
Once you have planted the French tarragon plant or Russian tarragon seeds, you will want to cover its roots with soil and gently pack it down with your hands. This will ensure that the roots make contact with the new soil. You will then want to water the plant and cover the roots with a bit of mulch to keep the sun from damaging them.
This step does not apply to Russian tarragon. Simply plant the seeds approximately one inch (2.5cm) deep and let them grow. Russian tarragon seeds will germinate about 10 to 14 days.

Best Companion Plants and Plants that Hinder: You may want to consider planting your tarragon near an eggplant. It is believed to be particularly beneficial to the vegetable's growth. More companions are chives, cilantro, basil, and garlic. Plants to not plant with tarragon are oregano, thyme, and rosemary.

Crop Maintenance: After about seven weeks, you should have a fully developed tarragon plant. At this point, you will need to begin pruning it regularly to prevent flowering. This will help keep the plant from getting too large. It will also help more leaves grow. If you are growing your plant indoors or in a window planter, you will want to be particularly diligent about maintaining your plant. Make sure that it stays around two feet (60cm) tall; otherwise, it may get too heavy and fall over. You can use a pair of pruning clippers or scissors to maintain your plant. You can also cook or dry whatever leaves you prune.

Moisture Requirements & Solutions: The right amount of water is essential to maintaining your plant's health. If it is outside in the summer months, you will want to water your tarragon plant daily. Ideally, you will want the soil to go almost dry between watering, followed by a thorough soaking. This is true of indoor tarragon plants as well. Avoid over-watering your plant and letting the soil get soggy. This will kill your tarragon. Mature Tarragon, however, should be fine with a light watering every few days. Check the top inch of soil before watering. If it's moist, no need to water, If it's dry, give it a drink.

Weeding Needs & Solutions: Weed when needed. Regularly check for weeds growing underneath and around your tarragon plant and be sure to remove them early. The weeds need to be removed before they are able to grow large and get entangled with your tarragon plant's roots. The less you have to bother your plant's roots, the better. You can also put a ½-1 inch (2-3cm) layer of mulch over the roots to prevent weed growth.
Weeding should not be an issue if you grow your plant indoors.

Feeding Needs/Optimal Natural Fertilizers: Tarragon doesn't need fertilizer to do well. The best flavor is achieved when it's planted in low-nutrient soil.
If you're going to use some, an all-purpose variety should only be applied in the initial planting stage.

Pests, Diseases & Solutions: Tarragon isn't vulnerable to most pests, but to prevent diseases like mildew and rot, pick a location that has good air and water circulation. Tarragon is a popular plant that is considered a nurse plant, as it drives away most pests.
Tarragon rust is a fungus that travels long distances via wind-borne spores.
Reddish, rust-like spores appear on the bottoms of leaves after an initial period of white or yellow spots on the leaf tops. Severe cases stunt plant growth and cause leaves to yellow and die. To treat, remove and destroy infected leaves. For prevention, increase air circulation among your tarragon stems and plants and keep leaves dry. Try drip-irrigation or water plants early enough so that the leaves dry completely before sundown. As for pests, you might notice wire worms that destroy the root and above-ground parts of the plant. They can be controlled by inspecting the soil and applying neem oil.

Harvest and Storage

When to Harvest/Number of days to maturity: You can harvest fresh tarragon until around September. As a perennial, after this point, the herb will be dormant for the winter. Gather your tarragon leaves. Although you can harvest tarragon throughout its growing season, the best time to harvest is in the late summer. This is when the plant's aroma and flavor are at their fullest. At this point, you should pick a large quantity and preserve some leaves for later use. Do not cut off the entire stock. Just remove the fresh lighter green leaves. Be sure not to harvest more than one-third of the leaves from your plant. Harvesting too many leaves may weaken or kill it.

How to Harvest: All herbs, including tarragon, are best harvested around sunrise, before the morning dew evaporates. It's at this time of the day that their aroma and taste are at their best. Cut the branch away at its base. Use scissors for you could damage the plant by pulling too hard. The regrowth process will take around 4 to 6 weeks. After you have harvested the leaves, tie the tarragon into loose bundles and hang them out to dry in a warm, arid, airy, dark place. There needs to be enough air circulation to ensure that the leaves properly dry. It is also important that the leaves dry quickly. Otherwise, they may mold and get discolored, which will ruin them. Perhaps hang for one to two weeks. Hold the stalk by its tip, and run your fingers along it in the opposite direction of the leaves' growth to remove them. Tarragon has a tender stalk, and the leaves should come off quite easily. You can keep the stalks if you'd like for they are edible, although the texture can be a bit rough. Take the herbs down, and crumble them into airtight containers. Store the containers in a dark place. Dried herbs tend to have less flavor than fresh ones, but can last for a much longer time. You can also dry tarragon in a vegetable dehydrator or in an oven on its lowest heat setting. If stored in a cool, dark cupboard, your dried tarragon should last one to three years.

Optimal Storage temperature and conditions: Another method is to freeze the harvested leaves. Once they are thawed out, the herbs can be used as a seasoning. It's better to chop the tarragon into larger, courser pieces before freezing, and you can always chop them again if a recipe calls for smaller sizes. If you don't have a cookie sheet, you can use any hard surface, so long as the tarragon has a place to rest. Tupperware or even a cutting board could work. Then, place the tarragon in the freezer overnight. Transfer the tarragon into a freezer bag. The herb can remain edible indefinitely while frozen, so long as they remain cold throughout that time and aren't refrozen.

Fresh tarragon can be refrigerated for about a week. If it's rinsed and wet, pat it dry before placing it in a plastic bag for refrigeration. Most recipes will call for it to be rinsed and chopped. You can add it to vegetables, poultry, or fish for subtle flavor and aroma.

Rinse the tarragon branches in cold water. You'll want to make sure you get as much dirt off of it as possible, and the cold water will preserve the herb's crispness and aroma. Shake off any excess water, and let the tarragon sit on a paper towel for a few minutes. Remove and chop the tarragon leaves. Once again, you'll want to hold the tarragon by the tip of its stalk, before running your fingers along it. To chop the tarragon, collect the leaves in a small pile, and cut them into coarse pieces.

If you want to make certain dishes, such as tarragon butter, you will want to chop the tarragon into extremely fine and small pieces. While adding tarragon to poultry or fish dishes, you won't need to use such small pieces. Herbs are always best when fresh, but frozen tarragon can be suitable for a number of dishes. Freezing herbs changes their texture and makes them rough, so it's best to use fresh herbs for garnishes. You can use frozen tarragon in dishes that use tarragon in the cooking process itself, and not just as a garnish.

Seed Saving: If you decide to plant French tarragon, you will need to find a whole plant at a store or take a plant from a friend's garden. It is very difficult to grow French tarragon from seeds, and they are very rarely available for purchase. However, you can grow Russian tarragon from seeds. Tarragon is usually grown from cuttings rather than seed. The roots of French tarragon are very sensitive, so try not to damage them when transplanting a plant.

Notes:
In manufacturing, tarragon is used as a fragrance in soaps and cosmetics.

There are two types of tarragon, each with different characteristics. French tarragon is considered to be the best variety for cooking. However, it can be more difficult to plant and care for. On the other hand, Russian tarragon is a hardier plant but it has a less flavor. Depending on your growing situation, and what you intend to use the tarragon for, each plant has its own pros and cons. If you are concerned about having an authentic tarragon flavor, it is recommended that you go with the French variety. This is the type grown in most gardens and is used by chefs. Russian tarragon might be a good choice if you want a nice widow herb and are less concerned about the flavor. It tends to not be good for cooking, but makes an attractive plant.

Essential oil can be extracted from leaves and flowers.

The plant's thujone is toxic for pets.

To preserve Tarragon in Vinegar: If you don't have a canning jar, any jar made of tempered glass will work just as well. Fill a pot with water, and bring it to a boil. Then, place the jar into the water for 10 minutes. Remove it, and let it cool. It's important to sterilize jars before using them to preserve food. Without proper sterilization, the food could spoil quickly. Distilled white vinegar works best for this method. In small pot or pan, heat it to just below boiling temperature. The heat of the vinegar will allow it to absorb the flavors of the tarragon more easily. Place sprigs of tarragon into the jar. A good ratio for tarragon vinegar is three sprigs of tarragon, or 1 cup of fresh leaves and stems, per pint. For added flavor, lightly crush the tarragon before placing it in the jar. Seal the glass jar tightly, and let it rest in a dark, cool place for 3 to 4 weeks before using. Placing it in a pantry or cupboard would be the perfect environment, but be sure to label the jar with date you prepared the vinegar, so you know when it's ready to be used. Tarragon flavored vinegar won't work as a replacement for many dishes that call for tarragon as a garnish, but it's a great way to be able to add the taste of tarragon to all kinds of food.

Thyme

Photo by Rebecca McCarthy

Description: Thyme is a dwarf, woody, evergreen herb and is a member of the Lamiaceae or Mint Family. It has culinary, medicinal, and ornamental uses, and the species most commonly cultivated and used for culinary purposes is Thymus vulgaris. This herb produces attractive, aromatic foliage and can thrive in almost any climate. In colder climates, thyme is a hardy perennial, so it will survive the winter and live for several years. In warmer areas, it is usually grown as an annual, since it does not survive well in the hot summer. Aside from culinary purposes, many gardeners use this herb as a ground cover or border plant. It blooms with tiny flowers that are usually white, pink or lavender, and their fragrance can attract bees to your garden. Most thyme plants will eventually grow to be 6 to 12 inches (15 to 30 centimeters) in height. Different varieties of thyme have different growing habits - some send up flower stalks, others form mats, and others will cascade.

Growing Instructions

Optimal Time/Temperature for Germination: Thyme is easy to plant, simple to care for and can be harvested year-round. Thyme can be grown from seeds, plant divisions, or seedlings. However, growing thyme from seeds can be difficult because their germination is often sluggish, uneven, and grows very slowly as germination can take up to 28 days. Most gardeners suggest buying young thyme seedlings, which you can obtain at any nursery, or take cuttings from someone else's thyme. Hardiness Zones are 5 to 9.

Optimal Soil Conditions: Thyme thrives in full sun, so plant them in a very sunny area. Thyme likes dry, sandy soil with good drainage. Never plant this herb in soggy or heavy soil. This can result in root rot. If your soil does not appear to drain well, add some compost, sand, or organic material to help improve drainage. Maintain a soil pH between 6.5 and 7.0. Thyme likes somewhat alkaline conditions and its nutrient requirements are minimal. If you need to raise the pH of your soil, add lime to it. You can fertilize the young plants in spring with compost, diluted fish emulsion or some other organic matter, but otherwise you won't need to do much else to the soil.

Seed Planting Depth, Spacing and Procedure: Plant your thyme seedlings in spring about two to three weeks before the last frost. For best results, plant them in soil that is about 70°F (21°C). Space the seedlings 8 to 12 inches (20 to 30 centimeters) apart. Thyme can be planted as a ground cover, around paving stones, or near a wall, as long as the drainage is good. You can also plant it in containers.

Best Companion Plants and Plants that Hinder: Best companion plants are shallots, potatoes, strawberries, blueberries, tomatoes, eggplant, salad burnet, cabbage, lavender, and roses. Whatever research you do, do not plant Chives, Basil, or Cilantro close to thyme for they are very harmful to thyme in different ways.

Crop Maintenance: If you want your plants to continue being bushy and producing tender stems, you will need to prune your thyme back to half its previous height every spring. Do this after the last frost. If you do this, the next spring it will flourish again. After three to four years of growth with the same plants, their stalks will become woody and the plant will produce fewer leaves. At this point you may want to start a new batch of seedlings, especially if you cultivate thyme for culinary purposes. Use an almanac to check when the last frost usually occurs. After this date, it may be safe to cut back the thyme.

Moisture Requirements & Solutions: Thyme is a hardy, drought-resistant herb. You need to water the plants on a regular schedule, but not often. Give the plants a good watering when you see the soil around them has gone completely dry. Soak the ground thoroughly and wait until the soil dries completely before watering your plants again.

Weeding Needs & Solutions: Weeds will compete for the soil's nutrients and slow the development of young thyme plants. Control the weeds around seedlings either through weeding or mulching.

Feeding Needs/Optimal Natural Fertilizers: Once your seedlings take off, the plants will need very little attention to thrive. Thyme doesn't need a lot of nutrients to survive and too much fertilizer will cause it to lose its flavor and become gangly. Mulch your plants in autumn with organic matter like leaf mold, well-rotted animal manure or compost. This will deliver the minimal nutrients thyme requires all year long, as well as protect the plants from frost once winter arrives.

Pests, Diseases & Solutions: Mulching with limestone gravel or builder's sand can improve drainage around the plants and prevent root rot. You can try other mulches made of organic matter like leaf mold or straw, as well. Some potential pests are spider mites and whiteflies.

Harvest and Storage

When to Harvest/Number of days to maturity: If you grow your thyme for culinary purposes, harvest thyme just before the plant flowers for the best flavor. As for the flowers themselves, feel free to pinch them off if you like. This will stimulate the production of more leaves, however, the flavor of thyme won't be negatively affected if you allow your plants to bloom. If you enjoy the way the flowers look, allow them to grow freely.

How to Harvest: You can harvest thyme at any point in the year, although the flavor is usually the best in June or July. This is when the flavor is most concentrated. Cut off fresh green sprigs in the morning. Leave behind the woody parts of the stalk. Strip the tiny leaves off the stems before using them. When trimming off sprigs, always try to leave behind at least five inches of growth on the plant. This will help it continue to flourish. The more you trim and prune your thyme, the more it will grow. Regular trimming will also make your plants grow in a more rounded shape. Check an almanac or online to see when the first frost usually occurs in your area. Stop cutting thyme about two weeks before this date.

Optimal Storage temperature and conditions: Rinse and dry the sprigs**.** Dry the harvested thyme sprigs somewhere warm and shady**.** You can hang your thyme to dry in any dark corner of your kitchen, living room, or dining room, as long as it has good air flow and a warm temperature. It usually takes 1 or 2 weeks for thyme to dry out completely. Place the bundle on a clean sheet pan or a piece of wax paper and open it up. An easy way to do this is to hold the stem in one hand and run your fingers down the stem with your other hand. Keeping it in an air-tight container and keeping it out of sunlight can keep it fresh and tasty for several years after drying.

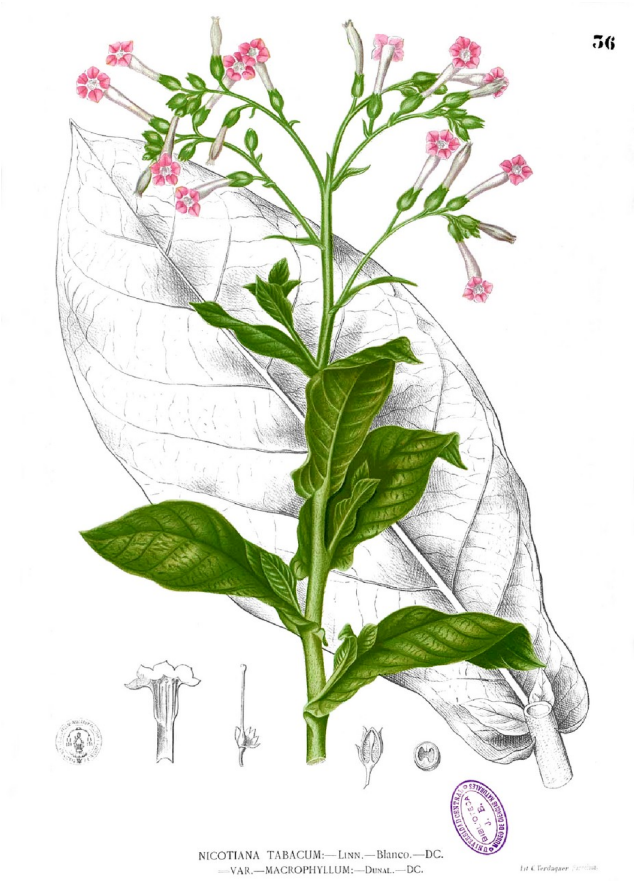
You can also dry them by laying them out on a tray and putting them in a food dehydrator. Once the pieces dry out completely, the leaves will easily fall off the stems. After you've removed the dried leaves, store them in an airtight container until you're ready to use them. You can also store your dried thyme in the freezer or preserved in oil or vinegar.

Either fresh or dried, thyme leaves are used for flavoring soups, gravies, stews, sauces, sausages, dressings and many other dishes. All parts of the thyme plant are fragrant because of the fairly high concentration of volatile oil.

Seed Saving: While cutting the ripening tops is one way to obtain seeds, use of cloths, sheets, or paper bags may prove more productive. Around noon and again in late afternoon, gently shake the plants to encourage the ripe seeds to fall onto the sheets or into the bags. (keep in mind if the plants are wet or damp the tiny seeds may stick to the leaves and flower heads.)

Notes: The most popular varieties of thyme are: Common Thyme, Golden King Thyme, Mother of Thyme, Lemon Thyme, Garden Thyme, and German Thyme.

Tobacco



Nicotiana Tabacum

Description:

Tobacco is a member of the Solanaceae or nightshade family. This family includes tomato, pepper, eggplant, Irish potato, and a number of other plants. The Nicotiana rustica species was commonly used by American Indians and may still be used for ceremonial purposes in some areas.

This growing instruction is mainly about the use as an ornamental plant or for producing rolling tobacco.

Growing Instructions

Tobacco should be grown in a sunny location on well-drained soils. Poorly drained soils could result in poor growth and even death of the plants. Tobacco can be grown on poorly-drained soils if the rows or hills are bedded and ditches or furrows are used to remove excess water. Drought stress could limit growth on excessively drained soils unless irrigation is provided. Lack of sun will result in spindly plants, poor growth and thin leaves. Some types of tobacco such as that used for cigar wrappers are grown under some shade to promote desirable leaf characteristics.

Do not plant tobacco on the same soil more than once every four to five years. Instead, rotate the tobacco with plants that are not susceptible to common soil-borne pests of tobacco. Grasses would be excellent rotations for tobacco, while tomato, pepper, and similar plants would not be suitable. In addition to soil-borne pests, several virus diseases and insects that attack tomato and pepper also attack tobacco, so try to keep these plants in different areas of the garden.

Optimal Time/Temperature for Germination:

Pre-sow indoors beginning in February on seedling soil in a small greenhouse at 21 to 25 degrees inside the house. Make sure the soil is moist enough, but not too wet either. To make it easier to pre-sow and spread the seed, the seed can be mixed with some sharp sand and scattered by means of a can or lid with some holes. Or spread the seeds directly and carefully in the soil, with the fingers 'like salt' over the surface, but do not squeeze the seed too hard.

Spread the seed well and spatially on the surface and do not cover with soil, mist lightly with water again. Sow on evenly distributed and levelled seed-covering soil, keep moist with spray mist.
Sowing too close together gives problems later on, in transplanting to individual pots. It can take up to 10 days for the seed to emerge, but under good conditions you can already see green dots after a few days. Keep the soil lightly moist with mist, not too wet and not too dry, check regularly.

Tobacco is light-sensitive seed, in the wild the tobacco seed rises best after a wildfire, so it has a chance to emerge and not be overgrown by fast-growing plants and grasses. Tobacco is rightfully a fire element plant. The seed-bearing buds that come into contact with the fire will burst open, causing the countless seeds to fall to the ground. One of those seeds will grow into a full-fledged plant thanks to the help of the fire. Store a small portion of the seeds in case something happens in a cool, dry place and dark place.

Direct sunlight quickly makes it too hot in a seed/breeding box on the windowsill, they will fall over from the heat in such a box with a plastic cover.
From sowing onwards, preferably place them in as light a place as possible but protect them from direct sunlight by using white limed glass or very thin paper such as patterned paper which they have in a fabric store. Do not use patterned paper or whitewashed glass on cloudy, gray days, as they will stretch by looking for sunlight and is not desirable.

When the seedlings in the propagator/greenhouse get leaves as big as a thumbnail then prick out/transfer to each a separate pot of e.g. 7x7cm.
Be careful not to damage the roots, now they can grow up for a few weeks.
Scoop out a corner of the container with a spoon or flat cheese slicer, place it in front of you on a newspaper and now the young plants are fairly easy to pick up and pot them up. Now you notice the advantage of a fine seedling soil with no lumps in it, the roots are now not in a lump and without damage transferred to a pot.

Seed should be sown about 50-60 days prior to the desired date of transplanting. Transplanting should be after there is no further danger of freezing temperatures. Normally the best transplant is about 6-8 inches in length.

If the plants have grown during a few weeks and the leaves are clearly out of the rim of the pot, transplant to the garden or repot into large pots or tubs. Do not transplant to the garden until after the last chance of night frost.
If the small seedlings/plants lose the leaf green it is a sign of nitrogen deficiency, the plants get a yellow glow or yellow spots. This is easily remedied by adding a low/half dose of liquid organic tomato fertilizer to the water.

Optimal Soil Conditions:

Ph value of the soil is ideal if it is around 5.8 to 6.5 (PH test kit garden center). If lime is needed to raise the pH, use dolomite in order to get the magnesium nutrient which is important for plant growth. Fertilize the soil with well-digested cow, horse or sheep manure (sheep or llama manure is preferred), possibly add some extra lime and/or use e.g. a (bio) complete vegetable garden fertilizer. Compost can also be applied very generously. Some Lava meal (contains many minerals) may also always be worked into the soil. In sandy soil some Bentonite (rock flour, also called swelling clay) can be used in connection with the mineral housekeeping and better moisture retention. The soil needs to drain off excess water quickly, clay soil can be improved by adding natural lava clay granules or sand and humus to make it lighter and better draining. Tobacco does not like too wet soil, root damage can occur. Do not fertilize too heavily.

Seed Planting Depth, Spacing and Procedure:

Plant spacing in the open ground: space the plants about 24 inches apart. Rows should be 42-48 inches apart. .
With single rows, the plants have more space and light each. This results in larger plants, but it does not necessarily yield more than with double rows. Single rows does produce the largest leaves. With double rows, zigzagging in the row itself, the plants get less light at the bottom so that they themselves turn yellow faster and become ready for picking. The leaf will also yellow more quickly after picking before it dries. The double rows mean that proportionally more is placed on the same surface area than as with single rows, which in the end gives a slightly better result. Double (zigzag) rows are preferred.

Before planting, make a hole of about 20 cm deep and place the plant in the middle, this is in preparation for the next step:

Earthing up.
Once the plants get to knee height (at about 1/2 m) start earthing the plants up. To earth up is to push soil towards the stem in a big pile of at least 30cm high, so they are more resistant to falling in high winds. storm is bound to come. It doesn't matter if a small leaf disappears under the ground.
Water young plants when it is very dry but preferably let them search for water themselves so they develop a good root system. Repeat the earthing up process several times so that they are firmly planted in the ground when they reach full size.

In very windy areas, the crop should be protected by a hedge or e.g. pole beans, 2 to 3 rows of corn, or other crop that catches and flattens most of the wind. It is always advisable to place a windbreak around the tobacco.

Topping.
Nicotiana Tabacum intended as a smoking tobacco preferably to be topped, that is to say the flowers are removed as soon as they can be cut and preferably also the thieving shoots (as with tomatoes). There are also growers who just let the thieving shoots, called suckers, grow in the armpit of the leaf, however, the true tobacco specialist will tell you that the thief shoots are of inferior quality. It may be necessary to remove suckers several times.
Thieves and flowers draw strength from the growth and development of the main leaves that are directly attached to the stem. If the plants are thieved, the final quality of the tobacco will be much better. Thief leaf is often much lighter and less powerful in experience, which some people prefer. You can experiment with this yourself. if you wish.

Best Companion Plants and Plants that Hinder:

The same as for tomatoes and other plants from the nightshade family. The big leaves give a lot of shade so the companion plants need to like that.

Crop Maintenance

Moisture Requirements & Solutions:

The soil needs to drain off excess water quickly, clay soil can be improved by adding natural lava clay granules or sand and humus to make it lighter and better draining. Tobacco does not like too wet soil, root damage can occur.

Weeding Needs & Solutions:

As the big leaves produce a lot of shade, not many 'weeds' (or 'wild herbs' as we call them) will be growing around the plant. The best to do is, cut the little plants at the base and place them on the earth, so they can compost.

Feeding Needs/Optimal Natural Fertilizers:

Fertilizers for tobacco could be the same fertilizers used for tomato, pepper, or potato.

Fertilize the soil with well-digested cow, horse or sheep manure (sheep or llama manure is preferred), possibly add some extra lime and/or use e.g. a (bio) complete vegetable garden fertilizer. Compost can also be applied very generously. Some Lava meal (contains many minerals) may also always be worked into the soil. In sandy soil some Bentonite (rock flour, also called swelling clay) can be used in connection with the mineral housekeeping and better moisture retention. Do not fertilize too heavily.

Pests, Diseases & Solutions:

Aphids – They are usually harmless for your plants, but if you want to clear them off, then just wash your plants periodically with the garden hose.

caterpillars - those can eat the whole leaf in one day - that will definitely damage your harvest. Natural way to protect your plants from being eaten up by leaf-grinders is to pick them up by hand. Remember that you are not a commercial grower, maximum 30-40 tobacco plants is all you need for the year. This number of plants is pretty small - you can manage it by hand, just walk around your garden every morning with your first cigarette in hand and pick up all the caterpillars you can see - they are more visible in the morning before the mid-day heat, when they start hiding from sun.

Harvest and Storage

When to Harvest/Number of days to maturity:

Harvesting is done from about 2nd to 3rd week of July until the end of September.

How to Harvest:

Harvesting could be accomplished by either removing leaves from the stalk in the field and curing them or by cutting the stalk off at ground level and hanging the entire stalk in the curing facility for the leaves to cure. The leaves would then be removed from the stalk after they have cured. If the entire stalk is cut for curing, it should be about 3-4 weeks after topping. The lower leaves would be partially deteriorated at this time. If the leaves are removed in the field, there should be four or five harvests at intervals of 1-2 weeks. The first harvest would be at or soon after topping and when the leaves show a slight yellowing. Harvesting is done from the bottom up. Pick 3 to 5 leaves per plant per round with a sideways movement from the stem and repeat this every 7, 10 or 14 days. A ripe leaf no longer looks as smooth, is a bit thicker and firm and more likely to be a bit bulbous, curly and lumpy and can start to look yellow. You determine your own quantity and harvesting rhythm.

It is advised to rinse the leaves clean of sand or impurities in a tub of rainwater and a flat soft brush (bath brush) (note TO: I did this, but have my doubts now if this is neccessary and also valuable substances could be rinsed of) and thread them through the vein (or use a clothes-pin for each leaf). The harvesting and hanging is thus spread over several rounds of harvest over several weeks. Harvesting everything at once is also possible but not recommended if there is not enough space.

Thread the leaves onto a piece of string (hemp/flax) with a threading needle or hang them with a clothespin, a few cm from each other, preferably under a ventilating shelter because of rain and sun, If the leaves have yellowed and are limp with brown tips, they can be left to dry in a dry, airy place in the house, possibly with a fan to get some air movement. Check regularly for you can find the most fungus on the main vein of the leaf because it stays moist the longest. aerate and/or heat. The main vein can be zipped in at the bottom with a small pointed blade for faster drying.

Optimal Storage temperature and conditions: / Optimal Preserving Procedures:

Curing: the drying of the leaf. Tobacco may be cured with heat added or it may be air cured. There does not appear to be any practical means for the gardener to use heat to cure the tobacco because of the facilities that are required. Tobacco could be cured without heat if a building with good air circulation is available. Unheated garage or barn which gets all the weather elements except the rain (moisture, wind, cold, heat) is the best place for natural curing.

Temperatures for air curing may range from 60-65°F (15 C) up to 90-95°F (32 C), and the relative humidity of the air should be about 65-70 percent. Proper curing should take a few weeks in order to have good quality. Tobacco that cures too fast will be green and not have good aroma and flavor, while mold or rot may develop if curing is slow. A building that can be opened and closed as needed to control the relative humidity and drying rate is desirable. Curing procedures need to be developed for individual situations.

The 'color-cure' process, conversion and loss of the chlorophyll, is first seen at the bottom of the plant when the leaves are ready for picking. The lower leaves of the plant, the sand leaf, are beautifully thin and aromatic, which makes them extremely suitable as a cover for cigars. With warm temperatures in summer this yellowing process before the final drying is easy, the colder it gets the slower this yellowing process is. Once the leaves are strung on hemp string they should not be dried too quickly, during a hot day with lots of wind your tobacco can be green and glassy dried between the leaf veins (lamina) within 2 days. Green tobacco tastes very hard to bitter, doesn't smell very good and is not what you are aiming for. On very hot days with lots of wind and low humidity you can hang open plastic bags over the tobacco with clothespins on the underside of the bags. This allows the tobacco to break down its leafy greens nicely without drying up too quickly. But also the plant sprayer with clean water can help on very dry days to keep everything moist.

Processing.
When the middle grain is dry and crisp, it is easily removed by first hanging the tobacco in a damp room or under a roof outside (or spray it with water). The tobacco becomes supple and alive again as it absorbs moisture back into the air making it easy to strip the main grain from the tip of the leaf. Cigars can now be made from it. Dry tobacco can be kept in a dry and cool place in e.g. banana boxes. Check the tobacco a few times a year to see if it is not too damp, because mold is on the lookout for. They say that tobacco has a lifelong shelf life, but there are producers who first let the tobacco lie for 6 years before processing it. During storage and maturation the quality improves, it becomes fuller in flavor, less sharp on the tongue, while the aromas are more fragrant.

Aging: All commercial tobacco is aged for a year or more before it is used. Unaged tobacco is harsh and does not have good flavor. For the home gardener, aging will probably be as difficult or even more so than proper curing. Aging may require as long as 5-6 years and does not occur unless temperature and moisture conditions are favorable. If the tobacco is too dry, there is no aging and if it is too moist, there will be decay of the leaves. Unfortunately the proper temperature and moisture content vary widely. The home producer would need the knowledge and skill to properly age the tobacco.

Fermenting: also called sweating, This is the process by which ammonia is released from the leaf to make it sociable. It can be done by heaping the tobacco into large piles called pylons that raise the temperature and humidity or by use of a kiln with a heater and humidifier. Under the raised temperature and humidity enzymes in the leaf cause it to ferment. It is not necessary to spray a fermenting solution on the leaf as some suggest the enzymes will do it naturally. Sometimes this is also referred to as curing. This system of maturing leaf came from the days when tobacco was shipped by sail. The ship would sit in port for a few weeks, very humid and bails stacked tight together. When the tobacco reached it's destination it was found to smell and taste sweeter.

For more information: Tobacco Leaf Harvesting, Curing, and Fermenting:
https://www.leafonly.com/tobacco-harvesting-curing-fermenting.php
wooden kiln instruction guide: https://www.seedman.com/wkiln.htm
Tobacco Fermentation / Curing Chamber for Cigars:
https://www.instructables.com/Tobacco-fermentation-curing-chamber-for-cigars/

Seed Saving:

If its only 1 type plant you have then just leave 1 or 2 plants to set seed and wait for the flowers to pollinate themselves and produce seed pods, after the seed pods turn brown and become a dry and brittle, you can take the seeds off by breaking off the top of the seed pod .If you have different types of plants that you will want to save seeds from, then you can bag the flowers before they bloom with a fine mesh or veil that you can buy at any fabric store, this will prevent insects/bees from cross pollinating the plants and keep them from becoming hybrids and it will also allow airflow to the flowers.

Notes:

Blood Lice in Poultry - Parts of the dried log can help control blood lice in the poultry brooder house. Cut or saw the bare dry logs to a length of 50-80 cm and distribute 1 per square meter. Check for mold with moisture and replace if necessary. The main veins can also be used for this purpose. Blood lice are very difficult to recognize on the chicken itself, best seen on the eggs as small red dots.

Lice in plants - Dried tobacco (waste) can be incorporated into the root area of the plant to better resist aphids and whiteflies.
This is done with cacti like plants but then again against mealy bugs that sit on the roots.
A tobacco tea can be made by adding 50 to 80 grams in a liter of cold water and bring gently to the boil. When it boils take it off the heat and let it cool, then strain it through a cloth and put in the syringe. Spray the top and bottom of the leaves of the plant to be treated. After a few days repeat again or if the weather is desirable.

Links:
https://ufdcimages.uflib.ufl.edu/IR/00/00/14/90/00001/AA26000.pdf
https://www.elenasgarden.ca/Growing-tobacco-Curing-tobacco
http://www.tobaccoseed.ca/
http://www.heirloom-organics.com/guide/va/guidetogrowingtobacco.html

Tumeric

Description: This herbaceous perennial is a member of the Zingiberaceae family (ginger) and is also considered a spice. The bloom is from July to August and range with burgundy, green, pink, white, yellow, or bicoloring. This showy part is actually a bract, not the true flower, which means an additional use as an ornamental. The canna-like leaves make it an attractive foliage plant even when flowers are absent. The plant grows 3 to 4 feet tall and wide. Tumeric's rhizomes have been used in food preparation and in traditional medicine. Other names are common turmeric and turmeric root.

Growing Instructions

Optimal Time/Temperature for Germination:
Hardiness zones are 8 to 11. This is not a plant to prune. Your main jobs are to keep it well watered and to shelter the rhizome from cold temperatures. To grow a turmeric plant in a climate colder than zone 8, you have three options: Treat it as an annual. / Grow it in the garden during the summer, then dig the rhizomes up in autumn to store them away for the winter indoors. In this case, you would cut off the top growth, then store them in a cool, dry location. Gardeners typically use peat moss, sawdust, or vermiculite as a storage medium. Keep the storage medium slightly moist throughout winter by occasionally misting it. / Grow it in a pot that can be placed outdoors during the summer then moved indoors in fall, until warm weather returns.

Turmeric takes a long time to sprout, but luckily, it can be done indoors during the winter. It also won't require light until it begins to sprout, so you don't need to worry about taking up a big space near a window for the 5-6 months required to sprout the stalks. Turmeric rhizomes grow when the temperature is 70–95 °F (21–35 °C). If the temperature drops below 50 °F (10 °C), your plant may die before it has had a chance to sprout. Your turmeric will begin to sprout after 6-10 months of watering in a warm climate. Once you see a stalk start to stick out of the planter or pot, it has started to grow into a mature plant. Leave your turmeric plants where they are until the stalks grow to 4–8 inches (10–20 cm) in length. If you live in a warmer climate and want to plant your turmeric outside, you can plant the rhizomes in your garden. Do it in the winter after the last frost passes so that they sprout in the summer months. You can't do this if it gets colder than 50 °F (10 °C) outside in winter though.

Optimal Soil Conditions: In the far North, the plant needs full sun and the further south you are, the more it is advisable to afford it some afternoon shade.
Turmeric likes a rich soil. Adding compost and/or manure helps achieve this. Being well-drained and consistently moist is important for its soil too. If you're planting turmeric outside, do it in a greenhouse with a planter's box if you can. Turmeric requires a lot of space for the roots and needs a lot of humidity to grow early on. If you're moving the plants into a planter's box, dig your hole so that the plant has at least 1.5 feet (0.46 m) of space around it in every direction. Maintain pH between 6.0 to 8.0 - slightly acidic to slightly alkaline.

Seed Planting Depth, Spacing and Procedure: Since turmeric is a fairly large plant, choose large pots (roughly 18 inches across and at least 12 inches deep).
Buy a couple of rhizomes of it in you local grocery store. (more likely available online than at your local garden center). Inspect the rhizomes for buds (think of the "eyes" on a potato). A small rhizome will have two or three buds on it, which is fine. Larger ones may have more, in which case you should divide them. So let's say that each rhizome that you bought has 6 buds on it. You would break each rhizome in half and plant two halves in one of your pots, the other two halves in another pot. Plant these rhizomes two inches deep in the pot, in early spring. The buds need to be facing up. Keep the pot indoors until nighttime temperatures no longer dip below the 50s (F). At that point, bring the pot outdoors and put it in a sunny spot that is sheltered from high winds.

Best Companion Plants and Plants that Hinder: You can plant crops that can help provide shade where Tumeric can grow best. It will even act as an insect deterrent due to the allelochemicals that it emits. This can be beneficial to other crops that are especially susceptible to harmful pests. Good companions are Beans, Cilantro, Eggplant, Fruit Trees, Ginger, Lemongrass, Onions, Peas, Peppers, and Tomatoes.
What not to grow
together with Tumeric is corn. When planted with corn, it has been shown to not yield as much at harvest time when compared to being planted with other crops besides corn.

Crop Maintenance

Moisture Requirements & Solutions: Make sure the soil in the pot never dries out. This can be a challenge because the soil in containers dries out more quickly than soil in the ground. Since turmeric likes humid conditions, increase humidity further by misting the plant's leaves during periods of hot, dry weather. Turmeric is a plant that tolerates wet soil. At the very least, watch out that its soil never dries out. Turmeric's water needs are considered to be above-average.

Weeding Needs & Solutions: Weeds can become a constant menace to all cultivated crops including turmeric. High temperature and humidity pave way for luxuriant growth of weeds. Weeds compete with crop plants for soil moisture, nutrients, light and space. Weed competition in early stage of crop growth virtually affects the yield of rhizome. Weeds cause greater losses of crops than either insect pests and plant diseases. They often suppress the growth of turmeric plants and at the same time encourage the growth of many pathogens and pests.

Feeding Needs/Optimal Natural Fertilizers: Because turmeric needs a lot of nutrients, feed it every month. Natural liquid fertilizers are best, such as kelp powder mixed with water.

Pests, Diseases & Solutions: If you find lots of physical damage to your leaves, it could be a sign that you have a thrips infestation or a caterpillar feeding on your plant. Use an organic pesticide like neem oil. When you remove or inspect a rhizome, if it looks gray or pale, it could be a sign of scale damage. Throw your rhizome out to prevent the infestation from spreading and then you need to treat the soil. Turmeric plants are often unappealing to many insects in temperate regions of the world. Turmeric powder can even be used as a pesticide with some crops.

Harvest and Storage

When to Harvest/Number of days to maturity: At some point in the next 2-3 months, the turmeric plant will begin to brown and dry out. This is the best time to harvest your turmeric. If you continue to let the plant grow, it will slowly rot over time and ruin any potential turmeric that you could extract. You can tell if your turmeric is almost ready for harvesting if it seems like it’s struggling to retain water and dries out quickly.
Harvest it in fall after the first frost, which will produce yellowing in the leaves. It is the rhizome that you are harvesting because that is the plant part most often used in food preparation and medicinally.

How to Harvest : Cut the stems of your plant 1–3 inches (2.5–7.6 cm) from the soil. To harvest the turmeric, you need to access the adult rhizomes underneath the soil. To start, use garden shears or a cutting knife to remove the stalks near the soil. Discard the leaves by composting them. If the plant is dry enough, you should be able to simply snap the stalk near the bottom.
If you are growing turmeric as a spice or as a medicine, you will want to remove at least a portion of the rhizome each year at the end of the growing season. The rest can be brought indoors as you would when growing turmeric as an ornamental. This way, you have an annual source of turmeric for use in cooking.

Optimal Storage temperature and conditions : Once you've cut the stem, pull the remainder of the plant out of the soil by hand. Cut or snap off the remaining sections of stalk and take the mature rhizome to a sink to wash it. Run it under warm water and rub it softly by hand to remove the dirt and soil off of the rhizome. Don't forcibly scrub the rhizome. You just need to remove the outer layers of dirt and soil before grinding, using, or storing it. Place any rhizomes that you don't plan on using in an airtight plastic bag or storage container in the fridge for up to 6 months without inflicting any damage on the flavor of the turmeric.

To prepare a rhizome for grinding, boil a clean rhizome in a pot with water. Once the water reaches a rolling boil, turn it down to a simmer. After 45-60 minutes, drain the pot in a colander or strainer. You can rub the skin off of the rhizome after boiling it, although it's perfectly fine to leave it on. You can tell if the rhizome is ready for grinding if a fork easily pierces it after boiling. Grind your rhizome to make turmeric powder. Let your rhizome dry out in the sun for the day. Cut your rhizome into smaller pieces and then grind it with a spice mill, grinder, or with a mortar and pestle until you've got a fine powder. You can use a food dehydrator set to 140 °F (60 °C) to dry your rhizome more quickly if you'd like. It's ready to cut and grind once it's brittle and dry. This process usually takes 30-45 minutes. Store turmeric powder in an airtight container designed for food storage. Consider wearing a pair of gloves when you peel or cut the turmeric. It's also a good idea to wipe down your cutting board as soon as you've finished preparing the raw turmeric. If you don't want the raw turmeric to accidentally stain your clothes, put on an apron.
Sprinkle ground turmeric on top of cooked foods as an added spice. You can sprinkle it on casseroles, roasted vegetables, eggs, steamed vegetables, and soups. You can also blend it into a smoothie. To make turmeric tea, add 1 teaspoon of ground turmeric and a pinch of black pepper to a cup of water and boil for 3 minutes.

Seed Saving: To grow it, you'll need to plant a turmeric rhizome, which is an immature length of turmeric root. Growing turmeric is easy as long as you can consistently monitor and water your rhizome. This shouldn't be too tall of an order since most of the growing process can take place indoors and doesn't require sunlight so later transfer them outside.

Notes:
Tumeric leaves are also edible. They are added to curries and used as wrappers for steamed dishes.
You can replant rhizomes after they've been stored in your fridge. As long as the rhizome hasn't been boiled or cooked, you can replant with the above process.
Do not grind any rhizomes that have been treated with a nonorganic pesticide. Instead, wash and replant them for another cycle before using them. If your turmeric plants start to smell when they're being stored indoors, it may be a sign that the rhizomes are rotting.
Turmeric takes a long time to grow and requires a lot of water to stay healthy. If you know that you're going to be gone for a long period of time at some point in the next year, you may want to hold off on growing turmeric.
Tumeric makes an excellent natural dye for fabric, producing rich yellows and oranges.
Caution: If you're pregnant or nursing, ask your doctor before adding raw turmeric to your diet.

Wormwood

Description: This herbaceous perennial evergreen is of the genus Artemisia in the family Asteraceae. It can grow to reach heights between 1- 3ft. and it can live up to 10 years if provided with the proper growing environment. In the wild, wormwood can be found growing plentifully near cliffs, roads, and riverbanks. The flowering beauty blooms during the summer and autumn months, and wormwood is pollinated by the wind. This unique plant is actually known as much for its one-of-a-kind foliage as it is for its flowers. Wormwood plants produce three different types of leaves on the bottom, middle and top of the plant. The leaves at the bottom of the stem are bipinnate or tripinnate leaves with long petioles. On the middle of the stem are smaller, less divided leaves with much shorter petioles, and at the top, the plant produces very simple leaves without petioles at all. Wormwood boasts a wide variety of greenish-gray foliage and stunningly-bright yellow tubular flowers, and the plant comes equipped with both male and female reproductive organs. The pale silvery-white foliage of the wormwood plant also makes an excellent contrast to the darker and greener leaves in the garden with its characteristic feathery fan shapes. The leaves are covered in glands that release a substance that repels insects. Other common names: artemisia absinthium, absinth sage, absinth sagewort, (Artemisia vulgaris) mugwort, , Artimisia Alaskana, Stinkweed, felon herb, sailor's tobacco, and chrysanthemum weed. There's an ecological threat since it does invade coniferous and hardwood forests, prairies, meadows, grasslands, fields, and disturbed areas.

Growing Instructions

Optimal Time/Temperature for Germination: Since most lawn and garden centers won't be selling Wormwood starter plants, it's best to start with seeds. Wormwood plants grow best in Hardiness Zones 4 to 9. They will develop a deep and complex root system. This is where nourishment is derived, keeping the plant thriving year after year. Seeds are incredibly tiny and best germination temperature is about 55-65 degrees F. Time to sow seeds in starter pots is about 6-8 weeks before last expected frost.

Time to sow seeds directly on the surface of the soil is when weather has warmed and all danger of frost has passed.

Optimal Soil Conditions: The plant requires a sunny location with quickly draining soil. It does best in a fertile soil that is rich in lime and a pH level around 5.5. It is a very hardy plant and famously adaptable to poor growing conditions.

Seed Planting Depth, Spacing and Procedure: Sow seeds in flats. For annuals, plant seeds at a depth of an eighth of an inch beneath the soil in spring or autumn. For perennials, sow in autumn on the surface of the soil. Provide 55- to 65-degree F temperatures, and allow the seeds two to nine weeks for germination. Perennials will require around 12 hours of light per day!

Transplant seedlings from flats to their outdoor homes after the last frost has come and gone, allowing 12 to 24 inches of space between each plant.

Because Wormwood seeds require light in order to germinate, they are sown on soil's surface or scatter about 3-5 seeds on soil surface of starter pots left uncovered and placed so they will receive direct lighting. (Make sure that the area does not receive excessive shade.)

Divide and transplant your wormwood plants every two to three years during autumn by following these steps. Remove the entire root ball from the ground. Cut the outer parts into sections, made up of equal parts root and stems, then discard the center of the plant. Replant divisions one to two feet apart in a sunny well-draining location. (the reputation for consistently meeting the need of this specific seed by quality is seedneeds.com)

Best Companion Plants and Plants that Hinder: Chemical compounds may inhibit the growth of some surrounding plant species while stimulating the growth of others. Wormwood is a poor companion around edible plants in vegetable and herb gardens. The natural chemical substance contained within the leaves is also water soluble and washes into the soil with heavy rains. This chemical inhibits the growth of garden plants, especially fennel, sage, caraway and anise. Wormwood is also a poor companion of young plants and seedlings. If you want to make wormwood a part of your garden landscape, plant this perennial with established ornamental plants. The only plant that is considered a good companion for wormwood is carrots, as wormwood discourages attacks by the carrot fly. However, due to its toxic nature, it is better to use other companions that achieve the same effect, without the toxicity.

Crop Maintenance: Deadhead your wormwood plants during the summer to prevent self-seeding and to keep them looking their best. Snip faded flowers at the base of the stems, and carefully rake up any seeds that may have fallen during the pruning, then discard all seeds and scraps. Cut the entire plant back by half during midsummer if it starts to look leggy or droops. Using a sharp pair of shears, snip the top half of stems just above a pair of leaves.

Prune wormwood in autumn to encourage a more compact, bushier plant, cutting the entire plant down to a height of two inches. If you start to notice drooping stems or discolored foliage, cut off watering for a week, and check the plant's drainage conditions.

Moisture Requirements & Solutions: it can still benefit greatly from occasional watering, especially during droughts or in areas with especially hot climates. Water frequently during your plant's first summer, providing 1 in. of water every 7 to 10 days and allowing the soil to dry completely before watering again. Once wormwood is established in your garden, you can cut back on watering drastically, only providing hydration every two to three weeks during the summer and then cutting your wormwood plants off from extra moisture completely during especially rainy weather.

Weeding Needs & Solutions: Prune back any overhanging tree branches or shrubbery that blocks the wormwood plants from getting plenty of exposure to sunlight. A small input of natural compost will not hurt in early winter, to keep soil around the plant /shrub.

Feeding Needs/Optimal Natural Fertilizers: since it does not like rich soil, no supplemental fertilizer should be necessary.

Pests, Diseases & Solutions: The wormwood plant is a useful plant for discouraging harmful insects. Its aromatic qualities make it a natural deterrent to common garden pests such as ants, slugs, snails, cabbage loopers, cabbage maggots, flea beetles, codling moths, tomato hornworms and other larger pests like mice. Never use wormwood tea on edible garden plants.

Wormwood is also rarely troubled by any typical garden diseases. However, it is susceptible to root rot when exposed to overly wet soil conditions. In fact, you can make your own potent and all-natural pesticide by mixing apple cider vinegar with fresh wormwood leaves.

Harvest and Storage

When to Harvest/Number of days to maturity: Patience is key when it comes to harvesting from wormwood plants. Experts advise gardeners to wait until wormwood plants are at least two years old before harvesting, as the herb's strength and potency will increase as the plant matures. You can use the upper stalks as a potpourri ingredient or harvest the oil to make a powerful antiseptic or an all-natural pest spray. Eventually, Wormwood, if left to its natural behavior, will grow into a bush about 3-4 feet tall and a diameter of about 2 feet. Wormwood matures in late July and early August when it has the right maturity for the best essential oils. There is usually only around a week to week and a half of time frame that is just right to harvest wormwood to harvest it at its peek

How to Harvest: Ideally wormwood should be harvested once the claws have opened and are just turning yellow, and are not very big. This will provide the best essential oil quality. If the pods are: closed, has its 4 little arms, and are green, then it is too early to harvest. However, if the blooms have turned yellow, become large and turned to pollen (that you can rub off on your fingers), then it is too late to harvest.

Optimal Storage temperature and conditions: Cut the wormwood with scissors just above the last dead leaf. Then bundles, washes and dries it one time. The next step is the trimming. It is then trimmed just leaving the best of flowers. The bundles are hung upside down to dry for 2 to 3 weeks, then cut into smaller pieces. The pieces are then bagged to sweat for a week. After this step the wormwood is dried again to ensure there is no further mild growth.

Seed Saving: When collecting seed, cut the foliage to the ground (leave some plants remaining for self-seeding) and place in a paper bag. Allow to dry and then gently shake the seeds loose. / Propagation is most often done by simple division of the root clumps, which offers the fastest, most trouble-free method.

Divide plants every two to three years, or when you start to notice the center beginning to die out. This is a simple matter of digging up the entire plant, dividing the root ball, and replanting. / You can also grow by cuttings with a cut 4 to 6 in. section from the tip of 2 or 3 healthy, semi-ripe shoots, using hand pruners, and place them in a container of water. Take the cuttings in autumn after the humidity drops. Make the cuts below a pair of leaf nodes from shoots of recent growth.

Notes: `Absinthe' is now banned in many countries. Thujone is a potentially poisonous chemical found in wormwood. Distilling wormwood in alcohol increases the thujone concentration. Always exercise caution when planting, handling or coming in contact with the wormwood plant, as all parts of the plant are toxic. Because this bitter-tasting plant is poisonous, resulting in symptoms that range from headaches, convulsions and nerve damage, wormwood is a poor plant choice in homes with small children and pets. The aroma of the wormwood plant attracts dogs.

Yucca

Description: The yucca plant is a tough perennial succulent that can grow as a shrub or a tree, depending on the species. While the many species of yucca vary in size and color, they are all able to thrive in hot, dry climates and can be cared for in the same way. The plants often are started from cuttings, although growing yucca from seeds is possible. The easiest propagation method involves division of an already mature plant. Once started, yucca plants can be grown in pots or planted in the ground outdoors, either directly in your garden or in a specially-prepared raised bed.

Growing Instructions

Optimal Time/Temperature for Germination: Yucca seeds are slow to germinate, and many species have a low success rate sprouting at all. The seed may even take a full year after planting to sprout. Yucca seeds planted indoors should be started in winter, to give them as long as possible to germinate before the *next* winter begins. Planting directly in garden soil is not as effective. If planting directly in garden soil, plant in early spring.

Optimal Soil Conditions: The yucca plant should be placed in a soil mix that is 50% sand or gravel and 50% soil. You should make sure that there is neither too much gravel nor too much soil. Yucca needs a fast-draining soil to prevent root rot.

Yucca plants need a hot, dry environment, so give your plant access to direct sunlight. Certain yucca species can thrive in colder or shadier locations, but these are in the minority, and typically still do well in full sunlight.

The acceptable USDA Hardiness Zones for yucca range depending on species, from zones 4 through 11 (minimum winter temperatures of -30 to +25°F or -34 to -4°C), depending on your species. Zones 9 through 11 (17 to 25°F, -7 to -4°C) are typically safe even if you do not know your exact yucca species. If you live in a lower or higher zone, it's best to consult an experienced gardener or garden nursery employee to identify your yucca species and find out what zones it will thrive in.

Seed Planting Depth, Spacing and Procedure:

Place the seeds on a moist paper towel in a plastic container. Fill a container with approximately 1/4 inch (6 mm) of water. Place a paper towel on top of the water, then place your seeds on top of the paper towel. Keep the seeds moist at 65–75°F (18–24°C). Keep the container at room temperature, adding a small amount of water periodically to prevent the seeds from drying out and going dormant again.
Some of the seeds should eventually sprout, but this can take anywhere from one month to a full year. Once the seeds have opened up and begun to sprout, prepare individual, small pots with a mixture of equal parts sand and compost. If these materials are not available, use any well-draining soil mixture, typically with 30% or more sand or small gravel.

Plant the sprouted seeds, sprouting side up, 1/2 inch (1.25 cm) under the soil's surface. Cover it with soil and water the soil thoroughly.
Keep the sprouts in indirect sunlight and water occasionally. Let the first thorough watering almost dry out, then water regularly to keep the soil damp, but not soaked. You should see the sprouts emerge from the soil within a week.

For a quicker process, take a cutting from an existing adult yucca plant. After a couple years of growth or more, yucca plants may produce offshoots near the base that grow on their own stem. During the dormant colder season, select a stem with dark brown bark, not a young, cream-colored stem. Cut a section off of this stem. The length and thickness of the cutting do not matter much. A cutting 3–4 in. (7.5–10 cm) long should be sufficient.
Strip the lower leaves from the stem. Use a clean knife or scissors to remove the leaves nearest the base, leaving the leaves on the top. With fewer leaves, the cutting will go through less severe moisture changes, which increases the odds of it surviving the transplant until its roots can grow. Place the cutting in a cool, shaded area. This dries the plant out slightly to encourage root growth for seeking moisture. After 4–7 days, the cutting should be ready to plant.

Select a pot with drainage holes. Fill it with a cactus or yucca potting mix, or make your own quickly draining soil. Two parts seed-starting mix and one part sand will provide nutrients for the young plant without keeping it too wet. Push the stem far enough into the soil to keep it steady and upright. Often, you'll need to use a gentle rope or other soft line material to anchor the stem upright to another object.

Keep indoors at least two years, transferring to larger pots successively. The yucca plant may not be sturdy enough to thrive outdoors for at least two or three years. Keep near a sunny window, but not in direct sunlight while roots and leaves are still developing. Transplant the yuccas to a larger pot if its roots begin to wrap around the outside of its current pot. Once the yucca plant is two or three years old, you may plant it outside in the springtime.

When transplanting, be careful to dig deep enough to expose its entire taproot. This central, long root can be quite long in some yucca species.
To plant potted yucca outdoors - Gently pry the yucca out of its pot. Turn the pot on its side. Grab the yucca at the base of the stem and slowly "wiggle" it out, soil, roots, and all. Place the yucca into the newly dug hole. Fill the rest of the hole with your soil mix and pack the soil around the base of the stem to hold the plant in place. The roots should not show above ground. Top the soil with 2 inches (5 cm) of granite chippings. The chippings keep the root dry at the neck by preventing water from splashing onto it accidentally

Crop Maintenance

Some yucca grow in a rosette shape, and produce a long, central flower stalk. After it dies, this stalk should be cut back all the way to the base to prevent rot. Other yucca varieties are tall and tree-like. These may be pruned to direct growth, but always wear gloves and safety goggles, as yucca can send sharp splinters flying when cut In either type, cut off dead or withered leaves from the base of the plant whenever you see them.

If the Yucca grows too thick and dense after a few years, you can take a shoot from it to plant elsewhere. Choose an offshoot you would like to remove, dig a perimeter around it, and lift the shoot from below with a shovel. You can cut any roots to the mother plant. Transplant this shoot to a new sunny area. This is best done during the dormant season.

Yucca plants can be damaged if exposed directly to frost. Spreading a thick layer of mulch can go a long way in keeping the plant warm and dry. However, keep mulch away from the lowest leaves to prevent rot.

Moisture Requirements & Solutions: Many yucca plants can get by without any supplementary watering, relying solely on rainwater to survive. Once foliage starts to develop in the warm months, however, you can water it weekly, giving the plant just enough water to slightly moisten the soil without making it wet to the touch.

Reduce the frequency of watering if your yucca plant develops brown tips with yellow rings around them. This is a sign of over-watering.

Weeding Needs & Solutions: Once established, Yucca will out compete most weeds.

Feeding Needs/Optimal Natural Fertilizers: Some recommend only fertilizing yucca once a year. This is because yucca can survive well in areas with low nutrients. Yucca likes potassium in the summer when it is growing.

Pests, Diseases & Solutions: Not many pests are drawn to yucca, but snails and slugs will attack new growth. Use slug traps to get rid of them. Small, green aphids can be washed off with soapy water.

Rust and mildew are the most common diseases. Food grade hydrogen peroxide, also known as oxygen bleach helps to cure mildew and fungus with out harming the plant or using toxic chemical fungicides. 12 tablespoons of 3 percent hydrogen peroxide mixed with a gallon of water and sprayed on the foliage is recommended. Repeated spraying for several days usually solves the problem and perks up the plant.

Notes:

The Joshua Tree of Southwestern US belongs to the genius Yucca.
Banana yucca (Yucca baccata) – Banana yucca is a Southwestern native plant that needs very little water and no maintenance. The spiky leaves can reach heights of 2 to 3 feet (61-91 cm.). It can take several years for a banana yucca to bloom, and it often dies soon after the flowers fade. Soapweed yucca (Y. glauca) – This is another Southwestern type. Soapweed yucca produces 3 to 4 foot (1 m.) flower spikes, loaded with large white flowers. It thrives when left to its own devices in a sunny location. Beargrass yucca (Y. smalliana) – The leaves of this Southeastern native are softer than those of most yuccas, so they are safe to plant around people. Beargrass yucca is spectacular when in bloom and flowers produce a strong fragrance in the evening. Spanish Bayonet (Y. aloifolia) – Keep this Southeastern yucca away from walkways and places where children play. Spanish bayonet yucca produces three stems of varying heights, each filled with densely packed, rigid, sharply pointed spikes. It's easy to see where this plant got its name. Expect dense flower clusters up to 2 feet (61 cm.) long in summer. The Spanish dagger (Y. gloriosa) is a closely related and equally dangerous plant. Adam's Needle (Y. filamentosa) – The 2 1/2 foot (76 cm.) long, pointed leaves of this Southeastern native arise directly from the ground. The drama begins when the plant sends up a 6 foot (2 m.) flower stalk that holds an abundance of pleasantly fragrant, bell-shaped flowers. Like the Spanish bayonet, Adam's Needle shouldn't be planted in areas where it may come in contact with people.

Yucca plants have a number of uses depending on the types you have. Yucca plants are not only grown outdoors in the landscape but they make lovely additions in the home when grown as houseplants. Several types of yucca plants have edible flowers and fruit, including the banana yucca and soapweed yucca. Yucca roots and leaves contain steroidal saponins, an anti-inflammatory agent used to relieve arthritis symptoms. It is also thought to purify and cleanse the blood, kidneys, and heart. Always consult a healthcare practitioner before preparing your own herbal remedies. Soapweed yucca is used to make shampoo and soap, and the leaves are woven into baskets. Historically, yucca was used primarily for its fiber, which was woven into fabric and twisted into rope.

Making your own yucca shampoo is easy. It takes one medium sized plant to make enough for 12 shampoos. Dig up the plant, rinse off the roots, and cut off the top. Peel the roots and cut them into pieces about the size of ice cubes. Beat the pieces with a hammer or process them with a blender. When it turns from white to amber, the shampoo is ready to use.

Red Clover

Description: is a short-lived perennial or biennial plant grown widespread and cultivated as a forage grass in many countries. Red clover prefers grasslands and wet meadows where it grows up to 50 centimeters in height, producing purple-red color shaped tops like a puffball with hairy stems and trifoliate leaves. It is a legume in the family Fabaceae and has been used as a cover crop like white clover. Red clover has a thick tap root that grows to a length of 24- 36 inches. Lateral roots arising from the tap root are concentrated mainly in the upper 5 inches of the soil.

More common names are cow clover, meadow clover, wild clover. Due to its lightly sweet, floral flavor, it is very suited to desserts and sweet entrees. Bumble bees love this plant too. To take red clover medicinally, dry the leaves and use them to make tea, or infuse the leaves with oil to make a salve.

Growing Instructions

Optimal Time/Temperature for Germination: While red clover can grow during almost every season, it typically does the best when the weather is still warm out. Plan to start your red clover late summer or early autumn before the temperatures get cold for the best results. Hardiness zones are 3 to 8.

Optimal Soil Conditions: Most varieties of clover do best in soil with a pH between 6.0 and 7.0, although some do well in soil with a pH as high as 8.5. Red clover isn't super picky, so the location doesn't matter too much. Before you plant, hand pull all the weeds and make sure the soil is well-draining. You can check on the soil by looking at it after rainfall—if there are standing puddles of water, choose a different location. If you've never planted something in the location before, tilling the soil is a good idea. Red clover will grow in most light conditions, so you don't have to worry too much about sunlight.

You need to inoculate red clover seeds 24 hours before you plant them in a container to mix peat moss inoculant with the Rhizobium bacteria in with your red clover. The bacteria will allow the seeds to use nitrogen from the air and actually grow instead of dying in the soil.

Seed Planting Depth, Spacing and Procedure: Mix your red clover seeds with grass seed. Grass seeds help prevent weeds, so you'll get more red clover if you mix them together. Pick orchardgrass, reed canary grass, perennial ryegrass, smooth bromegrass, or tall fescue, then mix it with your red clover seeds at a 1:1 ratio.

Sprinkle 10 to 12 lb (4.5 to 5.4 kg) of seeds per acre. If you spread too few seeds, your red clover won't grow. Weigh out your seeds and compare it with your space to make sure you have enough before you start planting. You can water the area after you've spread the seeds.

Best Companion Plants: Red clover is an unbeatable companion plant itself. It fixes atmospheric nitrogen in root nodules and acts as a living mulch. Single forage grasses to mix with are Orchardgrass, Perennial ryegrass, Reed canarygrass, Smooth bromegrass, Tall fescue, and Timothy. It is very well suited for use as the forage legume in short rotations with corn and even oats. Consequently, where erosion is not a
problem, clover planted for seed should be sown without a companion grass or the grass should be sown at a low rate.

Crop Maintenance

Moisture Requirements & Solutions: Red clover doesn't need a ton of maintenance, and usually, you can let nature take care of it for you. If your climate is going through a dry spell, you can water the clover about once a week to help it grow. Make sure rain has been somewhat regular before harvesting.

Weeding Needs & Solutions: Before you plant clover, you will need to get rid of any unwanted plant growth. Clover seeds will do best if they don't have to compete with weeds while they're getting established. To remove all vegetation, rocks, and debris from the area, till or rake the soil to a depth of about eight inches (20 cm). Tilling a month in advance will give any weeds time to regrow so you can remove them before planting. Tilling now will also make it easier to change the soil if the pH needs to be adjusted.

Feeding Needs/Optimal Natural Fertilizers: Clover can produce nitrogen all on its own, as long as it forms the proper relationship with the soil (which you encourage by adding a clover inoculant when planting). Adding in fertilizer will usually encourage grasses and weeds to grow instead of the clover.

Pests, Diseases & Solutions: root rots and the foliar disease northern anthracnose are the most serious diseases of red clover. Root rots are the worst of the two, resulting in plant death and stand thinning. Maintaining plant vigor by maintaining adequate soil fertility and proper cutting management are the most practical means of minimizing losses to root rots. Northern anthracnose causes severe foliage loss during the first growth of the season. With reduced percentage of leaf material, forage quality and yield decline seriously. Varieties resistant to northern anthracnose are available and provide the only practical control action. Other diseases of red clover include powdery mildew, viruses, sclerotinia crown and stem rot (aka `white mold') and other fungal diseases.

Selection of disease-resistant varieties is the primary control option in red clover. Soil fertility and proper harvest management (for example: cutting early if disease problems become severe) are also important in limiting red clover diseases.

If clover mites are or have previously been a problem for you, select plants that they dislike and stay away from: annuals such as marigolds, petunias, and zinnias; perennials such as salvia and roses; and shrubs and trees such as barberry, juniper, spruce, arborvitae, and yew.

Harvest and Storage- Keeping the clover at the same height is important for next year's bloom season. After your last harvest of the growing season (usually in late summer), use a lawn mower to mow the clover down short and get it ready for autumn.

It will come back for 2 to 3 years after you plant it. While clover can come back every year, its natural predators usually prevent that from happening. Disease and pests will most likely kill your crop after a couple years, so be prepared to till and reseed the area.

When to Harvest/Number of days to maturity: Harvest it 2 to 3 times per season. Do your first harvest 60 to 70 days after planting. After that, wait 30 to 35 days in between each subsequent harvest. (If you don't want to harvest your red clover, release cows or goats into the field and allow them to graze instead of harvesting.) Harvesting when environmental conditions are poor could harm red clover plants and negatively impact production. As a result, don't harvest during drought and don't harvest if it is unseasonably warm.

How to Harvest: Conduct your first cutting before the plant's first mid-bloom. Mid-bloom (typically be in the spring) is when half of the red clover plants in a given location (a field, your garden, or yard) have at least one flower. Harvesting at this point should yield sweet red clover flowers and leaves. This should not hurt yields for later harvest.

The best time to cut red clover is early in the morning, right after the dew has dried. This way, it'll still be somewhat cool out and the plant will have some time to recover before the hottest point of the day. If you cut late in the day, you might weaken and hurt the plant. Take a look at an individual clover, then find the leaf growth just beneath it. Hold your pruners at an angle and clip the stem above the leaf growth. After cutting the stem from the plant, you'll want to remove any remaining stem from the flower itself. Leaves may be cut from the stem in clumps of three. When cutting the leaves (or the flower), avoid cutting the entire plant at its base. While the plant can regrow more leaves and stems, you'll hurt its ability to produce if you cut it too low. Remember, don't waste any part of the plant you won't use. Only cut the leaves you plan on using. Collect the flowers and dry them out in the sun before using them.

Cut at the second mid-bloom. Depending on your region, you'll likely be able to get another harvest in about six weeks (typically in the summer). To do this, wait until the plant blooms fully and then gets to another mid-bloom.

Full bloom is when the vast majority of plants in a given location (a field, your garden, or your yard) have flowers that are blooming. Cutting at or after full bloom could harm the plant and potentially lower yield for the following season. As a result, if you plan to continually harvest a particular red clover patch, you should not harvest late into a bloom.

Optimal Storage temperature and conditions: Place your harvest on trays or racks to dry. Unless you choose to eat the leaves or flowers when they are fresh, you need to dry out your harvest so you can store it properly. To do this, place wire racks or trays with leaves and flowers in a shaded area. Then, allow them to turn crisp. Make sure wherever you lay your harvest is not too moist or humid. Your harvest could mold or mildew. If you want to speed up the drying process, consider placing your harvest in a food dehydrator. After you've dried your clover leaves or flowers, you need to store them appropriately. Gently place them into some sort of airtight container. When you're done, close the container as tight as you can. Use mason jars, Tupperware, or

other similar containers. Place them in a part of your house that is cool and dry. This is important, as the cooler and dryer the location, the higher the chances that you'll be able to store your clover for a substantial period of time. Store your red clover in a place with temperatures lower than 70 degrees Fahrenheit (21 Celsius) and 60% humidity.

Red clover is edible, and you can use them as a garnish or in a summer soup. Use red clover as the base of food dishes or substitute it for other ingredients. The seed makes a favored seed sprouting food too.

Seed Saving: It will spread by seed, if you let it go to seed. The individual plants don't live more than 2-3 years. In the year you want to produce seed, the first crop should be harvested for hay because it will have too much vegetative growth for good seed yield and spring conditions are usually too wet for producing good quality seed. Seed production in red clover is highly dependent on insect pollination, which occurs primarily through bumblebees. It might pay to set a couple hives of bumblebees near the field during flowering. It is critical that seed be dry enough to prevent heating. (Heating will dramatically reduce the germination of the seed.) Be sure to store seeds in a cool, dark place.

Notes: Avoid plants with discolored flowers or leaves**.** Plants with discolored flowers or leaves could be sickly. Harvesting sick or weak plants could not only hurt the plant (and make it so the plant can't recover from the harvest), but it could impact the flavor and quality of whatever you produce with it. Allow plants with discolored flowers or leaves to grow until the next season. If they still appear discolored, uproot them.

Different seeds than above but fyi, the most popular types of clovers for lawns are Dutch White (a perennial that grows to 8 inches, or 20 centimeters) and Microclover (a durable clover that has small leaves and short stems). To encourage fuller patches of clover already growing in your yard, mow your lawn to 1.5 to 2 inches (3.8-5 cm). This height is more favorable to
clover than to grasses.

Inoculate them yourself. Inoculation is the process of coating the seeds with a nitrogen- fixing bacterium that allows the clover to produce its own nitrogen.

Though generally recognized as safe, red clover has minor estrogenic properties and should be avoided by those who are pregnant or breastfeeding.

Red clover sprouts' nutritional value is said to be comparable to that of alfalfa sprouts.

Avoid eating unsprouted seeds. The seeds contain a compound which can interfere with your body's ability to digest protein. This compound will only be destroyed after the seeds have sprouted.

Rosemary

Description: is an edible perennial evergreen shrub from the Lamiaceae Family. This woody shrub will thrive for years. Standard rosemary grows to about 2 meters (6 feet) in height. It is very slow to reach this height, however, the dwarf variety will reach about 45cm (18") in height and is suitable for container growing. Rosemary has different forms, including different colors, leaf shapes and sizes. Flower colors also vary, usually from pale blue to white.

Growing Instructions

Optimal Time/Temperature for Germination: Once roots have formed, you can plant the rosemary either in pots or outdoors in your garden. Rosemary will adapt to most growing conditions and is quite hardy. It's happy with snow, limestone, high temperatures, by the seaside, and all sorts of soils. It will grow its best however, in a warm to hot, fairly dry climate. Though rosemary is hardy, it can suffer in very cold weather (lows of 0 degrees Fahrenheit or less) and its branches can get damaged when laden with heavy snow. To ensure the plant survives the winter, it's best to bring the pot indoors. If your winter lows do not get down to 0 degrees F, then you do not have to do this. Hardiness zones are 6 to 10. Transplant outdoors 2 weeks after the last frost date.

Rosemary seeds can be difficult to germinate, and they often do not grow true to their parent plant. If you wish to try growing from seed, plant several more seeds than plants you hope to grow. Start seeds around three months prior to your area's projected last frost date in the spring. Scatter them in a tray filled with moist seed-starting mix, just lightly covering them with the mix. Cover the tray with plastic wrap to trap in moisture, and make sure the mix doesn't dry out. Place the tray on a heat mat to keep the soil between 80 degrees and 90 degrees. As soon as seedlings appear, remove the plastic wrap, and place the tray in bright light. Once seedings are around 3 inches high, they can be moved to individual pots or outdoors if the weather is warm.

Optimal Soil Conditions: Choose a full sun aspect that is fairly dry. Decide whether you want to keep growing it in pots or as a shrub in the garden. It can also be trained as a delightfully scented hedge. For cooler climates, containers may be best so that you can move them if needed. If planting in the garden, pot the cutting up once so it can establish more roots and gain strength before planting it outside. Then, choose soil that drains well. Rosemary can suffer from root rot in waterlogged soil. Better soil pH preferred 6.0 to 7.0. The more alkaline the soil, the more fragrant the rosemary will be. Dig in some lime if the soil is too acid.

Seed Planting Depth, Spacing and Procedure: Rosemary is easiest to grow from a cutting, rather than planting seeds. Visit a community garden and ask for a cutting, or ask a friend for a cutting of their plant. After you find a rosemary plant, clip off a few 4 in. pieces to propagate. The best time to do this is in the late spring, but if you live in a warmer climate, this can be done during early autumn as well. The plants you'll be able to grow from the cuttings will have the same qualities as the original bush. Before planting the rosemary, strip the leaves off of the lower section of the cutting (about an inch from the end of the stem). This part of the plant will go into the soil. It is important to strip these leaves because leaving these leaves on will cause the stem to rot instead of grow.

After you have stripped the leaves, put each cutting into a small pot of soil filled with two-thirds coarse sand and one-third peat moss. Set the pot in a sunny place, but not in

direct sunlight. Water the cuttings regularly and keep in a warm spot until the roots form, which should take about three weeks. To help the cuttings grow, you can place the entire pot inside a plastic bag with a few holes punctured in the top. This will help regulate the temperature and keep things warm and moist. You may also dip the tips of the rosemary cuttings in rooting powder to give them a head start.

Spacing: 4 to 6 in. between plants and 12 to 15 in. between rows at a depth of 1 to 2 in.

Rosemary can tolerate salt and wind, making it an ideal seaside garden plant. However, it does grow best in a sheltered position, such as up against a wall, so try to provide this if possible.

Best Companion Plants and Plants that Hinder: Best Companions: cabbage, sage, carrot, beans, and broccoli. Worst Companions: tomato.

Crop Maintenance- Pruning isn't necessary for the health of the plant, but rosemary bushes tend to grow quite large and take up a lot of garden space. Cut the branches back by a few inches each spring to help them retain their shape. Don't prune off more than a third of the plant at a time, as this can stress the shrub and leave it vulnerable to diseases and pests. In a container, keep it clipped to maintain a suitable shape. Clip both the roots and leaves for a healthy potted plant.

Moisture Requirements & Solutions: Rosemary prefers a drier soil, so don't overdo the watering. It will be happy with the average garden watering. It likes to source most of its water from rain.

Weeding Needs & Solutions: Unfortunately, rosemary plants often suffer from weeds, which compete with plants in terms of space, access to sunlight, water and nutrients. The presence of weeds will have a negative effect in the quantity of fresh plant material harvested as well as in the quality of essential oil.

Feeding Needs/Optimal Natural Fertilizers: This is not an herb that needs it. However, make sure that there is some lime in the soil. Mixing compost into the soil at the time of planting can help to give the shrub a healthy start.

Pests, Diseases & Solutions: High humidity and poor air circulation can result in powdery mildew, a white, powdery fungus. Powdery mildew typically won't kill a plant, but the disease will weaken it. Downy mildew thrives in moist conditions, so water plants in the morning so they can dry out, water at the base of plants, and keep plants pruned and separated to improve air circulation. Powdery Mildew is often confused with downy mildew, but they're two different things. Powdery mildew is caused by a fungus and causes curling and blisters on leaves. Eventually, the plant will be covered in a white or gray powder-like growth. In addition to following the same moisture-control practices that you use with downy mildew, you can spray plants with neem oil or use a copper fungicide to control it.

Aphids and whiteflies literally suck the life out of your plants, and they can be particularly damaging to rosemary that is grown indoors or in greenhouses.
Dislodge the little pests by spraying them off plants with a blast of water and then use neem oil to keep them from coming back watch out for spider mites. Use an insecticidal soap as soon as you spot an infestation to prevent it from spreading

Harvest and Storage

When to Harvest: Harvest after new growth is generated, typically 6 weeks after planting. Since rosemary is evergreen, you can harvest it all year round.

How to Harvest: Pick sprigs of rosemary leaves as needed.

Optimal Storage temperature and conditions: Store the sprigs in a cool, dry

place. Rosemary can be frozen for up to six months. Simply place the sprigs into freezer bags and freeze. However, if you have your own bush, it's probably easiest to just pick as needed rather than take up extra freezer space. Alternatively, strip the leaves from the stems and store in airtight jars. Stored this way, rosemary will slowly dry and keep for several months.

Rosemary doesn't need to be dried to eat so put a fresh twig in a casserole, strip the leaves in, or just thread bits of lamb and veggies onto a rosemary skewer for the barbecue. It is a wonderful compliment to both sweet and savory dishes. Use it to add depth to meat and chicken, bread, butter, ice cream, herb bread, Rosemary syrup, lemon sorbet with rosemary. You can use either fresh or dried rosemary for tea- about a sprig per cup. The flavor and aroma are lovely, just bear in mind that the longer you steep the rosemary in hot water, the stronger and more bitter your tea will become.

Seed Saving: A rosemary plant will produce flowers in spring or summer. When the flowers die back, seed pods will grow in their place. After the seed pods form, wait for them to develop and eventually dry out and turn brown. That’s when they're ready to be harvested. / The seed pods are very small, and you can remove them from the plant by pinching them off with your fingers. As you collect the pods, place them in a cup or small bowl to keep them all together. / Bring the pods inside and transfer them to a paper bag. Leave the bag open to allow air flow. Place the bag in a warm, dry place away from direct sunlight for 1 to 2 weeks. This will give the pods and seeds time to finish drying out. The pods are dry when they're completely brown and all the moisture is gone. / Place the seed pods onto a clean tea towel. Fold the towel over the pods and rub the towel between your hands to separate the seeds from the pods, and to remove any husks or flower matter. Open the towel and pick out the seeds, which are small, brown, and egg-shaped. Discard the pods and other plant matter. / Transfer the seeds to a paper bag and seal the bag to keep the seeds inside. You can store the seeds for up to a year, as long as they stay cool and dry. A root cellar or basement is an ideal location for seed storage. / The trick with growing rosemary from seed is patience, because this plant is a slow grower when propagated from seed.

Notes:

Rosemary can be dried and made into drawer sachets, used as in ingredient in homemade soap, turned into a fragranced water that makes your hair shiny and soft, Plant a rosemary bush near the clothesline. Clothes that brush against it will smell gorgeous. It's also a nice herb to brush against on a raised walkway.

It doesn't have seasonal changes like deciduous plants. When it looks dead, it's probably dead, especially since rosemary hates having wet feet or too much water.

Rue

Description: is a shrubby perennial on a woody base in the Rutaceae family. It features aromatic, blue-green foliage with a fern-like appearance. And in the summertime, it sports clusters of small yellow flowers that attract butterflies and other pollinators to the garden, as well as parasitic wasps. Rue grows from 2 to 3 ft. tall and wide. It has very aromatic leaves and is an attractive herb whose dried leaves can be strewn about your home to repel insects.

Growing Instructions

Optimal Time/Temperature for Germination: Rue grows best in cool and warm climates, but it doesn't like humidity during summer. If you're in a cool climate, ensure that it has a position with full sun. In a warmer climate, a little shade is fine but not too much. The ornamental herb has a moderate growth rate and should be planted in the spring after danger of frost has passed. Hardiness zones are 4 to 10.

Optimal Soil Conditions: If using seeds, plant them in small seed-raising trays or punnets using seed-raising mix. During germination, keep the soil moist and in a warm, bright but shady position. In April. When the sprouts are about 2 in (5 cm) high, you can transplant them to their final place. Increase the sun exposure gradually prior to planting in the garden. / If you prefer to use cuttings, take these towards the end of summer. Avoid woody growth; look for mature green growth and take cuttings of about 10 centimeter
(4 in) in length. Place in sandy soil to strike, keeping the soil moist. As with the seeds, bright shade is the best positioning while the roots develop. / Rooted layers can be dug up and replanted. You'll see roots developing where stems touch the ground.

Rue likes poor soil but it must be well drained and deep. Sandy or graveled soils are the best choices. If the soil is too rich for the rue, its growth will be excessive. Acidic, neutral, or alkaline soil is workable with pH ranges 6.5 to 8.5.

Seed Planting Depth, Spacing and Procedure: You only have to drop the seeds on the soil and cover them by using a rake.
If you don't have garden space or have heavy soil, container growth is a good option for rue. Choose a pot that's around 12 to 16 inches wide and deep, and make sure it has drainage holes. An unglazed clay container is ideal because it will allow excess soil moisture to escape through its walls.

Best Companion Plants and Plants that Hinder: Rue is a good companion plant itself as it tends to repel pests as well as a variety of animals, including dogs and cats. The bluish foliage of rue plants marries well with plants that have golden foliage, such as the gold cultivars of oregano, sage, or thyme. These herbs all like the same sunny, dry conditions and well-drained soil that rue thrives in, so they blend well in mixed containers.

Rue is not compatible with basil or broccoli; don't plant it near these plants.

Crop Maintenance- Prune if it looks untidy. Cut back to the main plant shape in early spring. You can cut some leaves for aesthetic reasons in the summer. If you want to reinvigorate the plant, you must cut it half of its height after blooming.

Moisture Requirements & Solutions: A deep watering every two weeks is best from mid-autumn to mid-spring. During summer, water only if it gets very dry; let rain do most of the watering.

Weeding Needs & Solutions: interesting**-** the strong aromas of fennel, caraway seed, and wild garlic come from chemicals that can also keep weeds at bay.

In the northern portion of rue's growing zones, add a layer of mulch around the plants to protect them over the winter. Aim to do this before frost hits in the fall.

Feeding Needs/Optimal Natural Fertilizers: Rue doesn't need it. Do not fertilize rue plants because excess nutrients will cause the plants to produce more foliage at the expense of the flowers.

Pests, Diseases & Solutions: Rue doesn't have any major pest or disease issues. In fact, if you see caterpillars feeding on your rue plants, don't spray them. It's likely they are swallowtail butterfly caterpillars, which use rue as a host plant and benefit your entire garden! The primary disease issue that can affect rue is root rot from wet soils. So ensure that your plants are never waterlogged. Rue can be prone to fungal rot if there is too much summer humidity.

Harvest and Storage

When to Harvest/Number of days to maturity: Rue is often harvested to use as dried flowers. And some people make sachets out of rue and use them to deter pests, including fleas and ants. Cut a mature plant at ground level with pruners. Then, hang it in a dark, dry place to dry until the leaves become brittle. Keep the fully dried rue in an airtight container until you're ready to use it.

How to Harvest: Be careful when handling rue plants: Its sap sometimes causes photodermatitis. The sap can sometimes irritate skin or leave rashes or even burn it. It is best to wear gloves when handling rue and plan your harvest for a cloudy day or late evening.

Optimal Storage temperature and conditions:
Fresh rue leaves can be added in salads in small amounts. They're typically used as a condiment to flavor various food You can also gather some leaves before the autumn and dry them for usage during the winter.

Seed Saving: It's easy to make new rue plants via stem cuttings. This is a quick and inexpensive way to replace mature plants that are nearing the end of their life cycle, as rue plants only live around five years.
The best time to take cuttings is in the late summer from new growth, but be sure to wear protective clothing during the process. Here's how: a) Cut roughly a 6-inch piece of stem from new growth.
b) Remove any foliage on the lower half of the cutting. c) Plant the cutting in a container of moistened soilless potting mix. d) Place in a clear bag to maintain moisture. e) Keep the mix moist but not soggy.
f) Once you feel resistance when you gently tug on the stem, you'll know roots have developed.

Notes:

There are several varieties: Blue Beauty- has especially vivid blue- green leaves. Jackman's Blue- a strong blue color and a potent aroma. Variegata- leaves on this variety have some white in them.

The dried leaves are also effective when used in a sachet.

As another bitter herb that bears small yellow flowers, it's easy to confuse fenugreek with rue. However, that is an annual legume.

When mixed as a decoction, rue can be used topically to kill lice and fly larvae. Rue plant oils have a distinct, strong odor. These oils are extracted from the leaves, and are used in a range of cosmetics, fragrance products and soaps. Rue plants are also used to make a red dye.

CAUTION: Be aware that despite their past as a traditional use as a medicinal herb, rue leaves are toxic both to people and pets (by modern horticulturists to be mildly toxic if ingested). Large doses of rue can cause mild poisoning. Contact with the fresh plant may cause dermatitis in sensitive persons. The juice is a local irritant. Rue is **not to be used by pregnant women.**

Sage

Description: The plant is an herb in the genus Salvia which encompasses all the sages. Some look like a low shrub with pale, velvet-soft greyish green leaves and is a member of the Mint family. It is a hardy perennial that tastes aromatic and slightly bitter. (Sage is one of the few herbs that develops a stronger flavor when dried.) Sage can grows to a height of 24-36 inches (60-90 cm) and will be about 24 inches wide displaying pretty purple, pink, blue or white flowers on spikes in the summer that produce nutlet fruits.

Other Common Names are Amaro, Clarry, Clary, Clary Sage, Clear Eye, Cleareye, Cleere Eye, Common Clary, Europe Sage, Eyebright, Garden Clary, Orvale, See Bright, Tuylu Ada-cayi.

Both the leaves and flowers are used in flavoring and teas as well as aromatherapy applications. The plant also yields an essential oil called clary oil or muscatel sage, which is used for topical afflictions and in aromatherapy applications. Growing clary sage for home use provides all these benefits and is safe for human consumption.

Growing Instructions

Optimal Time/Temperature for Germination: it can survive in temperatures as low as zero degrees Fahrenheit so hardiness zones are 5 to 9. If you live in planting zones 5 to 8, your sage will be a perennial, growing back year after year each spring. If you're in zones 9 and further south, your sage will likely be an annual, or one-year plant. You can begin growing sage using several methods. If you've never had sage before, you can either plant fresh sage seeds (which can be temperamental) or purchase a small plant from the garden center and transplant it into your garden or a clay pot. However, if you already have an established sage plant, you can use cuttings or layering techniques to grow a new plant.

Optimal Soil Conditions: It is easy to grow, only having three major requirements - plenty of sunshine, good drainage and good air circulation. Sage grows well in rich clay loam that drains well and is rich in nitrogen. It prefers soil with a pH of 6.0 to 6.5. If you're using clay soil, try mixing in some sand and organic matter. This lightens the soil and helps with drainage. Seed Planting Depth, Spacing and Procedure: If you are transferring a sage plant into the ground, then make sure to plant it at the same level as it was in the pot. If you decide to plant seeds, they should be planted in late spring (in a bed or in a container) about 1/8 inch deep and 24 to 30 inches apart. They will take 10 to 21 days to germinate. If you do plant it in a large outdoor garden, it will spread and become large and bushy.

Best Companion Plants and Plants that Hinder: Sage grows best when it is planted with other perennial herbs, such as thyme, oregano, marjoram, and parsley. Sage attracts bees and repels cabbage butterflies.
It also grows well with carrots, strawberries, rosemary,nasturtium, and tomatoes. Do not grow Sage with : fennel, cucumber, rue, wormwood, and allium.

Crop Maintenance : Prune the older, woodier stems in early spring, after the danger of freezing is past but before new growth has really begun but only prune each stem by about a third.
Cut back the sage stems at the end of each season. While sage plants are evergreen and grow for longer than other plants, it's still best to adhere to a seasonal harvesting schedule. At the end of harvesting season (typically late September or early October), give your sage one more pruning, trimming away the older growths on the top thirds of the stems and removing no more than half of the shrub altogether. Stop harvesting the shrub during mid-fall so that it has a chance to prepare for the winter months. Begin harvesting from the plant again in the spring, once leaf production has started again.

Moisture Requirements & Solutions: Go easy with watering. When the sage plants are small, you should mist them with water to keep the soil moist. But when they reach maturity, you should only water sage when the soil surrounding the plant is dry to the touch. In fact, in some climates you won't need to water your sage at all - they'll get all the moisture they need from rainfall. Sage is a tough little plant and is very drought-tolerant.

Weeding Needs & Solutions: For Clary Sage, you do not want weed competition because studies show essential oil content is higher by removal of weeds.

Feeding Needs/Optimal Natural Fertilizers: Sage plants don't really need much fertilizer. Over-fertilizing makes them grow faster but they have a weaker flavor, defeating the purpose of growing it. Once or twice per year is enough for mature plants. Plant it with other compatible herbs and vegetables.

Pests, Diseases & Solutions: Mildew, root rot, and wilt are some diseases that are more common in sage. Avoid by watching the plants carefully during hot, humid weather and by thinning the plants regularly to increase air circulation. You can also try mulching the earth around the plant with pebbles, as this helps any moisture to evaporate more quickly. If mildew does develop on you plant, try spritzing it with a horticultural oil or sulfur spray. Sage is usually not a target for pests, but sometimes it will be affected by spider mites, thrips, and Spittlebugs. If you notice any pests, try using an insecticidal soap to keep them under control.

Harvest and Storage

When to Harvest/Number of days to maturity: Harvest the sage lightly during the first year, picking off leaves as you need them. In subsequent years, you can harvest the sage year round by cutting entire stems from the plant. Sage is considered to be at its best just before the flowers bloom, usually in mid-summer. Do your last full harvest approximately two months before the first major frost of the year. This gives any newly formed foliage enough time to mature before winter sets in. Another way to show your sage plant some extra care (and guarantee it a long life) is to limit what you harvest for the first year of the plant's life. Take as little as you can during this time, and give your sage plant the time it needs to grow fully and give you a more plentiful harvest in the coming years.

How to Harvest: Harvest in the morning, after the dew dries. To get the best harvest you can, wait until the initial moisture on the sage plant is gone - but do it before the midday sun! This is when the oils on the plant's leaves are most potent, and you'll get the best flavor out of your harvest. Sage is best harvested before the shrub starts to flower. To give your plant some extra attention, deadhead the flowers as they bloom; this clears the way for more healthy leaves. Similarly, while sage is typically an evergreen plant that can be harvested for the majority of the year, you'll get the best flavor from fresh growths in the summer months.

Pinch the sage leaves off with your fingers to harvest smaller amounts. Gathering sage in smaller amounts is an easy task: easily harvest individual leaves by pinching them off between your thumb and forefinger, right above the spot on the stem where two leaves meet. Handle your sage plant gently as you harvest to avoid bruising it. If just a few leaves won't cut it and you need a larger helping of sage, then gather up big bunches by cutting the top 6 inches (15 cm) of stem off of young shoots. To do this, use either a clean pair of scissors or pruners. By pinching off a few leaves at the stem, you're actually encouraging the sage plant to branch, which will give you a fuller shrub in the future.

Since the flavor and scent of an herb begins to deteriorate immediately after it is harvested, you'll find it easier to pick individual leaves of sage on an as-needed basis. However, when you need a bigger harvest, your sage can be preserved and stored in several ways, including hang- drying and freezing: Before you begin to dry out the sage, make sure that your leaves are clean by rinsing them under running water and removing any dead or damaged parts that you see in the process. Then, dry them with paper towels to remove excess moisture.

This is the first of a couple commonly used sage-drying techniques for you to choose from. Tie up the stems of your sage in bunches using twine or a rubber band, placing the tie closer to the cut ends of the stems, and hang them with the leafy ends down until they are fully dried. Make sure the space you hang them in is well-ventilated and warm, but out of the sun. Depending on their condition, a shed, garage, or attic could be the ideal spot to do this.

Before you hang your sage bundles, place each one inside a small paper bag leafy-ends first, and cut out the bottom of the bag or cut holes in the sides to keep the sage ventilated. This keeps your sage from collecting dust or getting contaminated while it hangs. Avoid hanging it above a stove, as odors coming from it can damage the integrity of your sage. While effective, this method of drying normally takes 2-3 weeks, up to a month, to complete.

Dry your sage in the oven. This is a good method to use if you have individual leaves instead of bundles. Place the sage leaves on a cookie sheet, arranging them so that they don't overlap, and slide the tray into the oven. Set your oven at its lowest heat possible, and leave the door to the oven open slightly so that the interior temperature stays around 90–110 °F (32–43 °C). Donot leave the oven door open if you have a gas oven; open every 5 minutes to vent the heat instead.

Check up on your sage frequently, and expect the drying process to take roughly 3-4 hours. Only do this if you can keep a close eye on the sage and the temperature within the oven, as too much heat will cause the sage leaves to lose their flavor. Once your sage is fully dried, it will easily crumble for storage. Place your dried herbs in an airtight and vapor-proof container, and store them somewhere cool, dark, and dry. Cupboards and pantries are ideal storage spots for this.

Appropriate containers for storing dried sage include jars, ziplock bags, or tupperware containers. Fully dried sage can be stored in this way for up to a year. While crushed sage can be easier to store, whole dried leaves can keep their flavor for even longer.

If you need to save pantry space or don't want to dry your sage, store it in the freezer instead. Chop up all of the sage leaves and place them in an ice cube tray filled with water, before putting the tray back in the freezer. When the sage-filled ice cubes have fully frozen, remove them from the trays and each one in plastic bags, which should also be stored in the freezer. From there, grab sage cubes for use in the kitchen as you need them.

Optimal Storage temperature and conditions: It is possible to harvest both young and mature sage leaves, but keep in mind that the younger leaves will have a better flavor and aroma when used in cooking. When harvested and dried, it can be used as a stuffing for poultry, rabbit, pork, and baked fish, and can also be used in sausage or meat loaves. In addition to being used as an aromatic herb in cooking, sage can also be used in potpourri and soap. Here are some things you can do with sage: make Parmesan and Sage Biscuits, make a Violet and Sage Cold Sore Cream, make Oatmeal and Sage Soap, make Sage and Ginger Tea.

Seed Saving: Replace the plant every three to five years because it will become woody and straggly. You can either start again with a new plant or seed, or use the old plant for cuttings or layering: To layer the plant, bend a branch of the existing sage towards the soil. Use some wire to pin the branch to the ground, about 4 inches from the tip. After about four weeks, roots will begin to form. Then you can cut the branch and transplant the newly formed sage plant to another location.

To use cuttings, cut the top 3 inches from the branch of an existing sage plant. Strip the lower leaves from the stem, or use a scissors to cut them off. Dip the ends in rooting hormone, then place in sterile sand. Wait 4 to 6 weeks for roots to form, then move to a pot and later the garden. It is best to take cuttings of plants in early spring, just after you notice some new growth.

Growing your sage from seed, will likely take a couple years to fully mature.

Notes:
Ideally, sage plants should grow in full sun, but they will also survive in light shade in hotter areas.
If it's exposed to too much shade, it will grow leggy and flop over. If indoors without much sunlight, you can use fluorescent lights. Standard fluorescent lamps should be 2 - 4 in. above the plants. However, high output fluorescent, compact fluorescent, or high intensity discharge (metal halide or high pressure sodium) plant growing lights work better and should be placed 2–4 feet (0.6–1.2 m) about the plants.

Sassafras Tree

Description: A native deciduous tree with all parts of the plant fragrant. It blooms in early spring, with clusters of yellow flowers about 1–2" long and up to ½" in diameter. Leaves are 3"–7" long, bright to medium green in summer changing to enchanting colors of yellow, deep orange, scarlet and purple in the fall. The species are unusual in having three distinct leaf patterns on the same plant: unlobed oval, bilobed (mitten-shaped), and trilobed (three-pronged). Sassafras leaves are polymorphic, meaning that a single tree can have leaves in different shapes. The three lobed leaves are the most common leaf shape however, some sassafras trees have five or seven lobed leaves. The 1/2" fruit is a drupe that's blue-black when ripe with each containing a single seed. In winter landscapes, sassafras trees are identified by their attractive reddish-gray bark that is smooth in immature trees and gradually develops interlacing furrows and ridges as it matures.

The sassafras grows to a height of 30–60' and a spread of 25–40' at maturity. This tree grows at a medium to fast rate, with height increases of anywhere from 13" to more than 24" per year. Though it grows in a rounded shape, it can be grown as a single-trunk tree or a dense, bushy thicket. Throughout its natural range, the roots and bark were once used as a regular spring tonic. Family classification is from the Lauraceae family (the laurels). Sassafras albidum and Sassafras hesperia are dioecious with male and female flowers on separate trees, while Sassafras tzumu and Sassafras randaiense have male and female flowers occurring on the same trees. Sassafras Hesperia is extinct (known only from fossils).

Growing Instructions

Optimal Time/Temperature for Germination: Sassafras is commonly found in open woods, along fences, or in fields. It grows well in moist, well-drained, or sandy loam soils and tolerates a variety of soil types, attaining a maximum in southern and wetter areas of distribution. Be sure to remove any shoots that develop for a single-trunk tree. Growing zones are 4 to 9. The tree is also vulnerable to ice storm damage. Sassafras has a disproportionally slender trunk that can be as thin as six to eight inches in diameter when growing as an understory tree, so it may be susceptible to wind breakage.

Optimal Soil Conditions: Full sun and partial shade are best for this tree, meaning it prefers a minimum of four hours of direct, unfiltered sunlight each day. It grows well in moist, well-drained, or sandy loam soils and tolerates a variety of soil types, attaining a maximum in southern and wetter areas of distribution It has some tolerance to drought and salt. Preferred soil pH is 6.0 to 7.0. Since Sassafras prefers neutral to slightly acidic soil, if the leaves turn chlorotic, the soil might be too alkaline.

Seed Planting Depth, Spacing and Procedure: The only regular care it requires is when you grow it as a specimen tree. In that case you need to keep removing the root suckers by cutting them at ground level, or else it will have a shrubby appearance or grow into a thicket. Sassafras stands can be pruned to give the thickets a neater appearance but it's not essential for tree health.

Best Companion Plants and Plants that Hinder: You will often find sassafras trees growing near flowering dogwoods, eastern red cedars, beech, and sugar maple trees. The Black Walnut tree would most likely challenge a resisting Sassafras tree.

Crop Maintenance

Moisture Requirements & Solutions: Young trees need to be watered until they are established. During the first growing season, if it doesn't rain, water the tree once or twice a week. Make sure to water it deeply so that the water reaches all the way down to the tree's deep tap root.

Weeding Needs & Solutions: It is a tree that colonizes an area, sending up small sassafras in the surroundings. This is not a big deal if you mow or weed regularly, but if you want a low-maintenance tree, this may not be the one for you.

Feeding Needs/Optimal Natural Fertilizers: Do not fertilize a newly planted tree during the first year, which can stunt its growth. In averagely fertile soil, established trees usually do not need fertilizer, but if your soil lacks nutrients, feed it at the beginning of the growing season.

Pests, Diseases & Solutions: As a tree that is native to North America, sassafras is generally not affected by many pests and diseases. Two invasive pests from Asia, however, can be a problem: Japanese beetles and the redbay ambrosia beetle, which is not directly damaging the tree, but transmits laurel wilt disease, a deadly fungus, into the sapwood of the tree. When you notice that your sassafras tree is wilting and dying from the fungus, it is unfortunately already too late.

The other serious pest is the sassafras borer. The larvae bore holes in the bark of the terminal ("head" of a tree branch) and the tips of small branches, resulting in wilting of the foliage. Young trees are especially susceptible and might die if the infestation is major. Woodpeckers might come to your rescue by eating small numbers of the larvae and pupae. For a non-chemical control measure, remove infested terminals and branches, in which the female beetles have laid their eggs. Safely dispose of the branches in the trash or destroy them to break the two- year life cycle of the borer.

Harvest and Storage

When to Harvest/Number of days to maturity: Sassafras trees rarely live longer than 30 years. For more potent roots, harvest in mid to late February or early March. This way the sap is still concentrated in the roots of the sassafras tree, providing you with a more potent root.

How to Harvest: Keep in mind that should do this on a day when it is warm enough that the ground is not frozen. If the ground is frozen you will not manage much of a harvest, as the ground will be rock-solid hard and fight your shovel. Have a cutting tool and gloves for collecting the sassafras roots (even small ones) from the dirt, plus a bucket of water. Shoving the tree over will more than likely cause some breakage at the roots.
Bear in mind to only harvest what you need and to leave a good number of roots in tact so the tree will continue to grow. The sassafras roots maybe different colors; some may be red, some may be white. The water can be very handy in pre-rinsing the roots before getting home. You will know you have the right tree for sure once you have broken a root, and sniff. It will smell much like black licorice; remember it was once used to flavor candies.

Optimal Storage temperature and conditions: How much you want to harvest really depends on your needs and plans for the use of your sassafras. Now that you have harvested your Sassafras, it is time to clean and sanitize your sink. / Shake the Sassafras roots over a compost bin - preferably - or over a trash can to shake out as much loose dirt as you can. / Then, put the roots in the sink and fill the sink with lukewarm water just enough to cover the roots; no need to waste water. / Scrub brush the roots to remove as much dirt as possible. / Place your clean Sassafras roots into a large bowl or container. / If you choose to remove the bark, you can, although there is as much flavor in the bark as well as the roots. / Cut 1 inch lengths for making tea with pruning shears.

You need to ensure that it is thoroughly dried in order to store for long term use. A dehydrator works great for drying sassafras. If you do not have a dehydrator, there is no need to purchase one. You can set your oven to 120°F, place a cookie sheet with your roots in the oven, and dry them this way. Watch them closely to be sure you don't burn them, but also be sure the root is completely dried. Sassafras is susceptible to mold, and drying thoroughly is one way to prevent it.

Another alternative drying method is screen drying. This will come in handy if you are living off the grid and do not want to use gas or electricity. Simple screens like the ones in your window are all that you need. You can prop these up on blocks, though only at the edges, as it is important for the air to flow all around the screens. Place these in a cool dark place; a barn or cellar will work. Watch your sassafras roots closely. It could be days or weeks until they are completely dry. In general, depending on the type of roots, the size of roots, and their moisture content, it takes about 3 to 15 days for them to thoroughly dry with the screen method. Dried roots will store for a year. They are best kept in an airtight container. An oxygen absorbent packet will prolong the life of dry goods as well. It is always best to store these in a cool dry place. Light can contribute to the spoilage of any stored foods if you are not careful.

Sassafras roots are available online if you can’t harvest so you can enjoy making your tea (known as spring tonic).

Seed Saving: Because of their large taproot, sassafras is difficult to transplant. Container-grown nursery trees have the best chances of survival. Birds usually distribute the seeds. Sassafras seeds typically germinate the following spring after being planted in soil or landing on the ground.

Notes- It is the main ingredient in traditional root beer and a gumbo from Louisana. The leaves and flowers have also been used in salads and to flavor fats or cure meats.

The wood of sassafras trees has been used as a material for building ships and furniture in China, Europe, and the United States, and sassafras played an important role in the history of the European colonization of the American continent in the 16th and 17th centuries. Sassafras twigs have been used as toothbrushes and fire starters.

The leaves, bark, twigs, stems, and fruits are eaten by birds and mammals in small quantities. For most animals, sassafras is not consumed in large enough quantities to be important, although it is an important deer food in some areas. Sassafras leaves and twigs are consumed by white-tailed
deer and porcupines. Other sassafras leaf browsers include groundhogs, marsh rabbits, and American black bears. American beavers will cut sassafras stems. Sassafras fruits are eaten by `many species' of birds and small mammals also.

Notice: Sassafras is no longer used in commercially produced root beer since sassafras oil was banned for use in commercially mass-produced foods and drugs by the FDA in 1960 due to health concerns about the carcinogenicity of safrole, a major constituent of sassafras oil, in animal studies.

Steam distillation of dried root bark produces an essential oil which has a high safrole content, as well as significant amounts of varying other chemicals such as camphor eugenol (including 5- methoxyeugenol), asarone, and various sesquiterpenes. (Many other trees contain similarly high percentages and their extracted oils are sometimes referred to as sassafras oil, which once was extensively used as a fragrance in perfumes and soaps, food and for aromatherapy.) Safrole is a precursor for the clandestine manufacture of the drugs MDA and MDMA, and as such, sales and import of sassafras oil (as a safrole-containing mixture of above-threshold concentration) are heavily restricted in the US).

In 1997, a NIH report stated Filé powder, also known as gumbo filé, is an herbal powder made from the dried and ground leaves of the sassafras tree (Sassafras albidum) that herbal products derived from sassafras don't contain any detectable amounts of safrole.

Extra entry- `Filé powder' is an herbal powder made from the dried and ground springtime leaves of the sassafras tree (Sassafras albidum). The leaves do not contain enough safrole to even be detected by normal testing, and filé powder has been declared safe for human consumption. A true "filé gumbo" should have both filé powder and okra. It should be added to the gumbo off the heat just before serving, or serve it at the table for guests to sprinkle over their gumbo. You can find it in most supermarkets and many specialty food stores or online food retailers.

Savory

Description: This herb is highly aromatic and of the Lamiaceae, mint family. It is also related to rosemary and thyme. It's woody at the base and forms a compact bush about 1 to 1½ feet in height. The leaves are long, soft, linear, and green at about 1 in.
Savory flowers in mid-July, with white or pale pink has ¼ inch blooms grouped in terminal spikes. With its many antioxidants and intense essential oils, Savory has had medicinal uses for a long time.

Growing Instructions

Optimal Time/Temperature for Germination: Plant savory in growing zones 6 to 9. If you grow the annual variety you can plant in the garden. Some gardeners grow the perennial in pots so they can move them to warmer areas when the temperature drops. Whether you plant the annual or perennial variety, plant in spring after the last frost. Savory seed germinates quickly. Plant in flats at a

depth of 1/8 inch and then transplant the seedlings after all danger of frost works best. Harden off for a week and then put in the garden when seedlings are 4-6 weeks old. Seeds require some light for germination, so be sure not to cover them deeply with soil.

Optimal Soil Conditions: Choose a spot in full sun, though savory can survive in part sun. Savory doesn't like wet feet, so give it well-drained soil that's rich in organic matter. Soil pH should be around 6.7 and 7.3. You can plant savory 12 to 18 inches apart to ensure proper airflow but one plant per year to harvest can be sufficient for one household. That includes the harvest into a food dryer to store and use in cooking throughout the year.

Seed Planting Depth, Spacing and Procedure: There are three ways to propagate savory: Sow seeds in autumn or spring in pots. Plant seeds 1/8 inch deep and thin later to stand 8" apart, in rows 18" apart. Keep young seedlings well watered. If potted, have one plant per pot and transfer into the garden or a bigger pot when ready. / Divide existing plants in the spring or autumn. / Take cuttings in the summer and bring on in a pot.

Best Companion Plants and Plants that Hinder: Try growing savory with the following plants: Beans, Melons, Onions, Garlic, and Tomato. Don't grow savory with cucumber.

Crop Maintenance

Moisture Requirements & Solutions: Water young plants well. Once savory is well established, it will tolerate a little dry soil.

Weeding Needs & Solutions: Many of the weeding problems faced by gardeners result from overworking the soil. And the biggest culprit when it comes to that issue is the rototiller. Mulching a garden correctly is one of the easiest and most effective methods for creating a weedless and healthy garden. The simple truth is this: bare soil = weeds. In the growing rows, use a 2 to 4 in. combination of compost, straw and shredded leaves. From late fall to early spring, use cover crops to keep the soil protected and replenish the nutrients as well. A simple 5 to 10 minute a day stroll through your garden is the best line of defense for weed control.

Feeding Needs/Optimal Natural Fertilizers: Dig in well-rotted manure or general fertilizer before sowing seed or planting seedlings. Savory doesn't need further feeding except for a side feed of well-rotted manure mid-season.

Pests, Diseases & Solutions: Savory doesn't have many pests and even fewer diseases. The secret is to practice good garden hygiene. If any of your plants get infested and you can't save it, pull the plant and throw it in the garbage or burn it. Don't place it in the compost heap.

Leafhoppers are little insects everywhere and it's often a matter of control rather than avoiding them. Try to identify leafhoppers early because they suck the sap from the plants, leaving them yellow and stunted. I use diatomaceous earth or insecticidal soap to remedy. / Spider mites live in clusters on the undersides of growing savory leaves. They suck the plant's fluids and can wreak havoc on your garden. Cut any leaves that are infested and throw in the garbage. Neem oil can keep them away. / Aphids can destroy a plant if you let their population grow. They literally suck the life from your plant. Neem oil applied three times with three weeks in between each application may take a while, so be vigilant and check for aphids throughout the season. / Leaf roller caterpillars will roll leaves up and feed on the inner surface. They eat through the leaf as they mature. Use a good organic insecticide or if you see one on a leaf, pull the it off and throw it in the garbage.

Harvest and Storage

When to Harvest/Number of days to maturity: Pick the leaves right before flowering when plants are at least 6 inches tall. Pick savory leaves in the afternoon when the essential oils are strongest.

How to Harvest: Keeping the plant pruned back ensures a continued harvest. When they insist on flowering, cut the whole plant and put it on a screen or paper in a warm shady place. To speed the drying time, try chopping into small pieces. When dry, strip the leaves and store them in airtight jars or tins.

Optimal Storage temperature and conditions: Keep fresh leaves in a clean plastic bag in the refrigerator or chop finely, add a little water and freeze in ice cubes.
Some people's favorite method is to dry and use in a herb mixture or on its own to flavor cooking right through the year.

Savory is popular in teas, herbed butters, and flavored vinegars. It complements beef soup and stews, chicken soup, eggs, green beans, peas, rutabagas, asparagus, onions, cabbage, and lentils. Many use savory when cooking liver, fish, and game. Winter savory, which has a stronger presence, works well with game that has a notable flavor. (use summer savory for fresh beans and winter savory for dried beans.) Add finely chopped leaves to horseradish sauce or make a summer jelly from grape juice and a little finely chopped savory.

Seed Saving: When the seed begins to turn brown, harvest them for next year's planting. Some think it's best to start seeds in a controlled environment. Others will choose, since Savory readily self-seeds and can come back year after year, to allow a few flowers to go to seed in the garden.

Notes-

Summer savory is an annual variety that has a pleasing aroma that reminds me of mint combined with thyme. It's the most common variety available and indispensable in the kitchen. Winter savory is a perennial. It has a less pleasing texture than the annual variety and needs protection in winter if you live in a cold area. It grows to about 12 inches and needs regular pruning because it can get a bit leggy.

Winter savory is better for thick stews and meat dishes – perfect for a homey meal on a cold night.

If you like lemony herbs, then this is one for you. Lemon savory is a tender perennial, so if you live in an area that gets cold, it's best to grow it in a pot so you can move it to warm areas when necessary. You can dry the leaves and they will retain their beautiful lemon flavor and aroma. Creeping savory is a hardy perennial that can tolerate cold as well as humidity and heat. It needs good drainage and oodles of sunshine.

Rubbing a sprig of savory on an insect bite will bring instant relief.

The poet Virgil recommended planting near beehives to flavor honey.

Spicebush Shrub

Description:
Native to the low woods, stream banks, and wetlands of the eastern United States and Canada, spicebush is an easy-to-grow, deciduous shrub in the Lauraceae family. It is adaptable to a wide range of growing conditions and is low-maintenance once it is established.

Spicebush is an aromatic deciduous shrub. The little yellowish flowers have clusters of 2-5 flowers and bloom in the spring, As its name suggests, spicebush leaves and twigs give off a spicy fragrance and flavor when crushed. There is a species of laurel known as hairy spicebush, that has hairy leaves. But if the leaves are smooth, then you have northern spicebush. The leaves grow up to 5" long and nearly 3" wide. Leaves also have smooth edges.
With autumn, the leaves turn a striking golden yellow. The berrylike 1 cm long drupes are oblong and have a mild allspice flavor. When dried and crushed its bark can pass for a mild cinnamon substitute. Spicebush trunks, branches, and branchlets are also unique. The bark ranges in color from a shiny brown to an olive green. The trunk and branches are also distinguishable because they are covered in small white lenticels. From a distance, these little lenticels along the branches look like salt sprinkled on a pretzel. These lenticels also act as pores, allowing for the exchange of gases.
Not only do the lenticels look cool, but they also help the plant breathe.
Known as northern spicebush, wild allspice, and Benjamin bush, the shrub is not only beneficial to humans, but insects and woodland mammals as well.

Growing Instructions
Spicebush is dioecious, meaning male and female flowers are present on separate plants. Male spicebush grows clusters of yellow-green flowers in the spring, whereas the female spicebush can be identified by the bright red berries that adorn the bush in the late summer months. The Hardiness zones are 4 to 9 . It is accustomed to cold winters, warm springs, and mild to hot summers - although thanks to its adaptable nature it can tolerate a wide range of Optimal Time/Temperature for Germination:conditions. It grows rapidly in wet conditions and tolerates humid conditions more readily than overly dry conditions.
Although it can be grown from seed with relative ease, Spicebush is not as easily propagated otherwise. It can be successfully propagated by softwood cuttings, although a successful propagation can be difficult. The best time to take softwood cuttings for spicebush propagation is in the late summer or autumn. Use a rooting hormone for best results, and plant the cutting in a moistened mixture of perlite and soilless mix. Softwood cuttings need high humidity in order to sprout roots, so keep the newly potted softwood cutting in a plastic bag to create a humid environment until roots develop.

Fortunately, the berries that adorn the female plants contain its seeds, so if you have a female spicebush (or know someone that does!) it is easy to grow new plants.
If by seed, place fresh seed from harvest buried in a pot with a silty soil, and allow the soil microbes to break down the flesh of the fruit over the fall and winter. Leave this pot outdoors buried halfway underground so it is not subjected to the coldest winter temperatures. In early spring, strain the silty soil from the seeds by using a hose on a jet setting and a strainer; washing the silty soil away leaving only the seeds and sow in early spring.

Optimal Soil Conditions:
Spicebush grows best in full sun to partial shade conditions. If you're trying to find a place in your yard for them in the Deep South, try the Northside, Eastside, or Westside of your home where they will receive shade for part of the day.
As a 'facultative wetland plant' (which means that it mostly occurs in wetlands) spicebush thrives in moist- well draining soils. The shrub doesn't do as well near salt or brackish water. The shrub often grows in bottomlands and on slopes, where there is plenty of runoff. It tolerates both alkaline and acidic (5.0 to 8.0) soils well.

Seed Planting Depth, Spacing and Procedure:
The shrubs either produce male - pollen bearing flowers or female – nectar producing flowers. Most nurseries will not have the sex of the shrub identified, so be sure to plant at least 3 to 5 to heighten the probability you get a mix of male and female flowering trees. Spicebush can grow 6 to 12 ft. tall. A good rule of thumb is to leave 8-12 feet between seeds. Spicebush can get wide, but rarely eclipses 12 feet, and very rarely reaches 15 feet. You also want to plant the seeds pretty shallow. Just ¼" deep in the soil is deep enough for spicebush to grow. Remember, in nature, seeds grow after dropping to the ground, so they don't need to be buried deep to thrive.

Best Companion Plants: Bunnies may eat seedlings so you can repel rabbits since they don't like: marigolds, lavender, sage, columbine, delphinium, bee balm, lemon balm, and catnip.
You're likely to find Spicebush in an edge habitat among fellow swamp dwellers such as Jewelweed, Joe-Pye-Weed, some ferns and sedges and of course, the not-so-picky Poison Ivy. Even as natural undergrowth, you may find the shrub beneath Hemlock and Maple trees.

Crop Maintenance:
Spicebush does not require heavy pruning and it is usually only for aesthetic reasons and to help it maintain its shape. The best time to prune spicebush is after the shrub has finished flowering in the spring.

Moisture Requirements & Solutions:
During the first growing season, spicebush should be watered regularly to help it establish a strong root system. Once established, spicebush usually does not require extra watering outside of the regular rainfall in its growing zones. It is widely considered to be an adaptable shrub and can tolerate a wide range of moisture conditions including short periods of dry soil or very wet soil.

In historically bad or severe droughts, simply set your sprinkler up on the spicebush and give 2 inches of water every 14 days in which there isn't 1" of rain fall. (This is just watering twice a month during exceptional dry spells.) While they should survive without this watering, the watering will increase growth rate and increase the size of the fruits for wildlife as well as the density of flowers for the following spring.

Weeding Needs & Solutions: Taking steps to reduce future weed growth, near young trees means to pull the weeds out and mulch covering nearby to keep them down.

Feeding Needs/Optimal Natural Fertilizers: Spicebush should be fertilized twice during each growing season. Fertilize in the early spring and then again in midsummer.

Pests, Diseases & Solutions: They are supremely resistant to deer grazing and tolerate Black Walnut as well. However, it is susceptible to `laurel wilt' which is caused by a deadly fungus that is introduced to the shrub via redbay ambrosia beetle. Symptoms of laurel wilt include brown leaves and spikes of ambrosia beetle sawdust sticking out of the trunk of the laurel family related trees. (meaning browning from the vascular tissue being infected is not being

able to get water to the leaves from the roots.) Infected trees generally die within months, often showing a full crown of dead, brown leaves. the best way to prevent the spread of laurel wilt is to avoid transporting any firewood.
Current management involves sanitation (chipping, burning) of infested materials.

Harvest and Storage

When to Harvest/Number of days to maturity: Harvest the berries mid August to mid October once they have turned very red.

How to Harvest: Once berries are bright red, pick individually by hand.
Commercial berry containers are great for storing fruit because the rigid plastic keeps fruit from getting crushed and they also have small holes in them which control the humidity in the container. This slows the fruit from drying out too quickly, but allows air circulation to reduce molding and keep well in re-used commercial berry containers in the refrigerator for one to two weeks. It is ideal to use this fruit fresh, so if at all possible, use them fresh

Optimal Storage temperature and conditions:
In the modern kitchen, the edible seed can be used to make tea, in baking Gingerbread for example, ice cream, rice pudding, and flavoring of meat. Its twigs, buds, flowers, leaves, unripe and ripe fruit are all edible, and intensely aromatic. Some folks have found that spicebush leaves dry well without using a dehydrator or bags. Placing them on trays in an open environment will dry them, but the succulence and oils of the leaves never quite depart, resulting in a dried leaf that will spoil if stored in jars. You can try the berries in an oven on the lowest setting. Dry them until they are dark red to black, feel completely dry all the way through, and you can bite through them easily. Frozen fruits just come out dark and mushy, but if you really need to freeze them you can, knowing that the texture will be greatly compromised upon thawing.

Nutrients will be preserved. Spread berries in a single layer on a cookie sheet and place in freezer for 1 day. Once frozen, repackage them into zipping freezer baggies (3 mils or thicker) or glass jars to keep them from drying out, remove as much air as possible from the baggie, label and store in freezer until needed—no more than 1 year. Avoid freezing, thawing and refreezing as might happen in a door of a freezer.

Seed Saving:
Fresh seeds are best when it comes to growing spicebush from seed. At harvest time, remove the seed from inside by squeezing or cutting open. Sow the seeds immediately after harvesting in a pot or directly in the garden bed. Germination will occur in the spring of the following year.

Notes:
There are at least three cultivators of spicebush that have been developed, although they are not widely available for purchase: Lindera benzoin 'Rubra' is a male cultivator that is characterized by red flowers. Lindera benzoin 'Xandthocarpa' is a female cultivator that is characterized by yellow-orange berries. Lindera benzoin 'Green Gold' is a male cultivator that is characterized by large ornamental flowers.

In foraging, be sure about Spiceberry because the Flowering dogwood and Pondberry are similar look-a-likes.

Spicebush is also a host plant for the caterpillars of the spicebush swallowtail butterfly, the promethea moth also known as the spicebush moth, and the eastern tiger swallowtail. A spicebush in your pollinator garden is an excellent way to attract these three pollinators.

Stevia

Description: Growing stevia is a fun and easy process. Watch your stevia transform from a seedling into an 18 in (46 cm) bush. This tender white flowering plant is in the Asteraceae (Aster) family and is a perennial herb/shrub. However, the leaves stop producing quite as much after year two. This is why many recommend that you replant every two years. Medium-green sage-like leaves are serrated and ovate and grow opposite one another on a rangy stem. You've probably heard about the health benefits of the stevia plant (stevia rebaudiana). Also known as sweet leaf, the plant's leaves can be used as a natural sweetener and as a sugar substitute.

Growing Instructions

Optimal Time/Temperature for Germination: Stevia is very difficult to grow from seeds. Contact your local nursery to purchase a seedling. If you have trouble finding stevia plants in your local area, search online for stevia growers who are willing to ship their seedlings. Purchase 3- 5 stevia plants if you want a full year's supply of stevia. Small stevia seedlings are easily damaged by frosts and low temperatures. Leave the stevia seedlings in their small pots until the nighttime temperatures are consistently above 50 °F (10 °C) for a week. If the temperatures in your area fall below 32 °F (0 °C) at any point during the year, plant each stevia seedling in a pot that is 18 inches (46 cm) wide and 18 inches (46 cm) long rather than outdoors and carry your pots inside and place them by a sunny window. Once the temperatures are consistently above 32 °F (0 °C), shift the pots back outside. In hardiness zones 8 to 11, stevia is considered a winter hardy plant, and can grow with a winter mulch. If you don't live in one of these warmer zones, you can grow and prepare healthy parent plants to overwinter indoors and plant outside in the spring.

Optimal Soil Conditions: Purchase seedlings from a nursery and plant them in a warm and well- drained area. The plants are fairly low maintenance. Stevia grows best in areas that have good drainage and receive full sun. Choose a place that doesn't have puddles of water after rain as this indicates that there isn't good drainage. Avoid choosing an area that is mostly shaded. If you live in a hot climate, it is fine to plant the stevia in an area that receives slight afternoon shade. Stevia does well in loose, loamy soil. You should add compost to the soil to increase the drainage as well as to increase the nutrient content before planting. It's best to add compost 2-3 weeks before planting. Preferred soil pH is 6.2 to 7.2

Seed Planting Depth, Spacing and Procedure: Turn the pot upside down to remove the stevia plant**.** Place one hand over the soil and around the stevia to support the plant. Tip the pot over and gently use your other hand to pull the pot away from the soil and roots. If the stevia plant isn't coming out, try gently tapping on the base of the pot to release the soil. Use a trowel to dig a hole into your soil that is slightly bigger than the roots of your plant. Place the stevia in the hole and push soil around the roots so that it sits upright. Leave about 18 inches (46 cm) between your plants to give the seedlings room to grow. If you are planting rows of stevia, leave about 22 inches (56 cm) between each row to give room for the plants to grow to their full size.

Best Companion Plants: Plants that stevia works the best with are marjoram, sweet woodruff, lemon verbena, and thyme.

Crop Maintenance Whenever pruning any plant in your garden, first ensure the blades of your scissors or shears are sterile enough to prevent spreading diseases. Wipe the blades regularly with a little alcohol. Alternatively, wash them with soap or disinfectant and hot water. Trim the top 6 inches (15 cm) of the bush in spring. Pruning your stevia will encourage it to grow more branches and leaves. Use secateurs to cut off the top 6 inches (15 cm) of the bush. Leave the sides of the bush to continue growing.

Trick early frosts by covering your stevia plants. The goal of extending your harvest time out as far as possible is to achieve maximum sweetness. Stevia leaves become sweeter into autumn as temperatures drop and daylight hours decrease. You can help your plants gain sweetness by shielding them from too much cold during early frosts. There are a variety of ways to shield plants from the cold: Use mulch and insulating straw built up around the bases of the plants; Use a lightweight blanketing material (available from most gardening stores) over the tops of the plants; Use a polyurethane or glass cold frame; If you planted your stevia in containers, simply move your plants indoors during colder spells or greenhouse.

Moisture Requirements & Solutions: It is really important not to over water the stevia plant as this can kill it. Touch the soil around the roots of the plant and if it feels dry, lightly water it. Avoid creating puddles of water in the soil. If you live in a hot climate, you will need to dampen the soil every few days. You do need to water your plants regularly. The plant perks up fast once you give it a drink of water. However, wilting does apply stress to the plant, so avoid it as much as possible.

Weeding Needs & Solutions: Don't forget that mulch also suppresses weeds. It's always a smart idea to mulch around stevia plants. Mulching helps to prevent the soil from drying out on hot summer days. Another benefit of mulching is that it helps to regulate the soil temperature. In the hot days, it keeps the soil cooler but keeps the soil warmer during the cooler days.

Feeding Needs/Optimal Natural Fertilizers: Add organic fertilizer or compost to the soil once per year. Stevia plants grow best when they are given plenty of nutrients. Follow the instructions on the packet and add the amount of fertilizer or compost suggested around the base of your plants. It is important not to add more fertilizer to the soil than the instructions suggest as this can harm the stevia.

Pests, Diseases & Solutions: Stevia doesn't suffer from too many diseases or pests, but there are a few that you should remember. Alternaria Leaf Spot- causes reddish, round, small spots with white or grey centers on the leaves and midrib. Sometimes, the lesions encircle the stems, causing the plant to wilt. It gets worse in warm or humid weather. Make sure that you don't get water on the foliage and always remove infected plant parts. Keep the plants apart for air circulation.

Botrytis- a nasty fungus that leads to grey mold forming on the stems, leaves, flowers, and all parts of the plant. It loves cool, wet weather conditions. If you notice this fungus developing, remove all affected parts of the plant and don't water at night.

Damping off- common problems when you start the plants from seeds. At first, the seedlings look healthy, but then they wilt all of a sudden. Damping-off is a fungus that typically appears when the soil is to wet or you have too much nitrogen in your soil. It's vital that you keep seedlings moist but avoid overwatering. Never over-fertilize your seedlings and quickly thin the seedlings to avoid overcrowding. Also, wash containers before you reuse them.

Aphids- tiny little insects that can be red, black, green, yellow, brown, gray, or peach scored. They suck on the leaves, typically clinging to the underside of the leaves. Then, they leave a sticky residue that attracts ants. You can knock aphids off of the leaves with a jet of water from your hose. Another option is to use insecticidal soap on the leaves.

Slugs- leave big holes in the foliage or eat the entire leaf. You'll find slime trails in the morning; slugs are more active, eating at night. At night, go into your garden and try to hand-pick them off of your plant. Try attracting them to traps made of either cornmeal.

Harvest and Storage

When to Harvest/Number of days to maturity: The stevia leaves are usually at their sweetest just before the plant blossoms. This is usually at the end of summer or in early fall. Each time you check your plants through the main growing season (summer), look for buds at the tips of this flowering plant and pinch them off with the nails of your index finger and thumb before they can bloom. While this prevents flavor being diverted from the leaves, it also stops your plants becoming 'leggy', so they end up bushier with more leaves to harvest. Extending out the time of your harvest will increase the sweetness of your crop but it's also a gamble. Don't leave it too long, because your stevia plants won't tolerate a severe frost. Be sure to harvest before the first killer frost hits your plants.

How to Harvest: Pick off the leaves and use them as desired or harvest leaves with a snip or garden scissors. If you want the plant to continue growing, don't pick more than one-third of the leaves at one time. If you are cutting branches, apply the same principle. Only cut off ⅓ of the branches. The best time is to harvest is in the morning because the plant has a high sugar content.

Optimal Storage temperature and conditions: Use leaves fresh; leaves will keep a couple of days wrapped in a damp paper towel placed in a perforated plastic bag in the crisper of a refrigerator. / You can also dry it. Cut the whole stems, wash them, and hang them to dry. Another option is to put them on a non- metal screening outside to dry on a sunny day. Typically, they dry in one day. If you have a food dehydrator, you can use one of those as well. Once dried and crisp, you can crush the leaves by hand or use a food processor to grind into a powder form. Homegrown stevia powder should be stored in an airtight container.

Leaves can be used fresh or dry to sweeten beverages, cereals, fruits, salad dressing, yogurt, teas, smoothies, as a sweet snack, and in most creamy desserts. One-eighth teaspoon of dried stevia leaves equals 1 teaspoon of sugar.

Seed Saving: Seeds germinate in 14 to 21 days when kept moist and warm. It's generally easier to start plants from 4 to 6-inch tip cuttings. Dip cut ends in a liquid rooting hormone and place in organic potting soil. Keep the air temperature 70°F at night and warmer during the day.

Notes-

Stevia leaves are 30 to 40 times sweeter than granulated sugar and have almost no calories.

Sweet Mace

Description: The genus Tagetes is classified in the sunflower family of Asteraceae. Pleasant to the eyes and wafts of licorice-anise from the blossoms of Sweet Mace are a great addition to our gardens. In fall, if the growing season is long enough, the tips of the stems bear clusters of 3/8-inch golden yellow-orange flowers. The flowers are hermaphroditic (have both male and female organs) and are pollinated by insects. The deciduous foliage (though there is an evergreen species) has greenish bronzy stems that the small, lance-shaped, glossy, green leaves attach to the plant's upright growth habit.
These this tender perennial bushy plants can grow 12-36 in. high. Sweet Mace still has medicinal uses in many countries. It is not related to French tarragon at all.

This ancient herb has many common names: Tagetes lucida, Spanish Tarragon, Mexican Mint Marigold, Winter tarragon, Mint-scented marigold, Root beer plant, Mexican marigold mint, Yerba Anise, Pericon, Texas tarragon, Mexican' tarragon, Cloud plant, Coronilla, Sweet marigold, and Spanish tarragon. "Mexican mint marigold" is the most common.

Growing Instructions

Optimal Time/Temperature for Germination: Sweet Mace is not frost hardy. If going by seed, start indoors in late winter 6 to 8 weeks before the last frost date as germination takes up to 10 days. Later, transplant outside once temperatures have warmed to an ideal 75-80 F. Better growing zones are 8 to 11. North of hardiness Zone 8, it is often raised as an annual. Especially in the North, you may prefer to purchase young plants instead of raising them from seed. The plants are grown much as garden marigolds are, but from seed, they take much longer to flower–6 months compared to as little as 6 weeks for garden marigolds. It will grow easily in Zones 6 and 7, if mulched well in the fall. The plant expands into a small clump in the second year and can withstand temperatures as low as 5 degrees Fahrenheit, provided it has 6 to 12 inches of straw mulch piled on after the first frost in the fall.

Optimal Soil Conditions: These easy to grow plants thrive in areas with well- drained soil including sand. For a full, well-formed plant with many blossoms, place it in full sun as it likes summer heat. In a shady garden, it will grow leggy and bear few flowers. In warm regions, such as the Gulf Coast, the Mexican mint marigold is evergreen. In cooler climates, you may be able to bring them through the winter outdoors under a heavy mulch. Where winters are really severe, pot them up before the first frost and bring them inside until warm weather returns. Soil pH Preference is slightly acidic to neutral which is 6.1 to 7.5

Seed Planting Depth, Spacing and Procedure: If sowing seeds outdoors, can place two weeks before last frost at 1/8" Deep. Later, thin 8-12 in. apart. Space 2 to 3 ft. apart in prepared garden beds and mulch well. Grows well in containers too. Another method of propagation is by division in early spring, just when it begins to send up new growth. Keep the young divisions moist until they are established. Other gardeners will take 6 to 8 in. semi-hard cuttings from established plants in fall or early spring- strip off the lower leaves and stick the cuttings in the sand in semishade.

Keep the soil moist and warm and mist cuttings occasionally. In two weeks, gently pull on a cutting. If you feel resistance, it is rooted and can be transplanted to a pot or to a protected spot in the garden. Lastly, if stems fall over and touch the ground, they will take root, causing plants to spread.

Best Companion Plants: Other vegetables that benefit from companion planting together are basil, broad, runner, and bush beans, citrus, eggplant, peas, and tomatoes. Flowers that benefit from being close are roses, zinnia, and sage.

Crop Maintenance

Moisture Requirements & Solutions: Although this plant appreciates regular watering, it can withstand short droughts. Basically, 1" of water per week is appropriate.

Weeding Needs & Solutions: mulch well to discourage weeds and maintain moisture levels. Weeds are naturally strong competitors and those weeds that can best compete always tend to dominate is why you need to keep them away from young plants. Defining a weed is that they are plants that need to be controlled - a plant out of place and not intentionally sown, a plant growing where it is not wanted**,** a plant whose virtues have not yet been discovered.

Feeding Needs/Optimal Natural Fertilizers: Sweet Mace is relatively easy to grow. It has no special fertilization needs. Scratch in about an inch or two of compost upon planting.

Pests, Diseases & Solution: The plant has no persistent insect pests (an occasional grasshopper will taste a leaf) and when in flower, butterflies visit. Otherwise,
it's mostly trouble-free of disease tendencies indoor or outdoor as well. Be sure to space properly to avoid fungal issues such as botrytis. If insects such as spider mites, aphids, thrips, whiteflies, slugs, or snails are an issue, treat with an insecticidal soap.

Harvest and Storage

When to Harvest/Number of days to maturity: Begin harvesting leaves 6 to 8
weeks after transplanting outside. For best flavor, harvest in the morning when aromatic oils are at their flavorful peak.

How to Harvest: Remove spent flowers to prolong blooming period. Mature leaves are not significantly tougher or more bitter or less fragrant than the young, tender ones. The leaves may cause skin irritation so wear gloves and other protective covering when handling. Harvest the leaves before the plant blooms in the fall. You can harvest small amounts of the leaves throughout the growing season. New leaves will grow back to replace them. In the fall, you can uproot the entire plant and hang it to dry for use during the winter.

Optimal Storage temperature and conditions: Leaves are best when used fresh but may be dried and stored. To dry, tie cuttings in small bundles and hang upside down in a well-ventilated, dark room. When completely dry, remove the leaves from all stems and keep whole for storage. Crush or grind just before use.

Seed Saving: Allow seedheads to dry on plants; remove and collect the seeds; properly clean; then seed can be successfully stored.

Notes:

Sweet Mace is a darling of many renowned Southwestern chefs, some even make a pesto from it. Mexican tarragon is more delicate and should be added at the end of the cooking time. Its best flavor is from the fresh leaves, chopped and used in dishes such as chicken salad or tossed green salads. More variety of uses are as tea or a chocolate alternative.

Plant it along sidewalks and walkways as a fragrant low hedge. Mix it with other herbs and flowers in a sunny niche in a cottage garden or plant it in among rocks around a shallow pool, where its bright blooms will be reflected in the water. The flowers will attract bees and butterflies to the oasis.

The dried leaves are often used in crafts like making potpourris and sachets. Harvest the long stems just before frost when they are tipped with yellow- gold flowers. While they're still green and pliable, weave them together in groups of six or nine as you would braid hair, then tie the two ends of each group together to form a circle. Dried leaves can be removed as needed for cooking. If the wreaths are made small and interwoven with other herbs, they can be tossed whole into a soup or stew as a bouquet garni.

The flowers add long-lasting color to dried arrangements and bouquets. They are attractive combined with sweet Annie, broom, and goldenrod in harvest centerpieces, or bundle the stems with natural-colored raffia for fragrant hang-ups that add a warm ambiance to any room.

For a change of pace and scale, clip the stems short and make miniature bouquets in tiny vases. As with other marigolds, Mexican mint marigold looks good and lasts well in fresh small flower arrangements as well.

In the humid South, where French tarragon is difficult to grow, Sweet Mace is a fine culinary substitute instead of Tarragon.

Try your favorite brownie recipe and add 3 tablespoons of freshly chopped Mexican Mint Marigold leaves. You may be surprised how well the herb blends with chocolate.

Yellow dye can also be obtained from the flowers, and when the plant is dried and burnt, it is used as an incense and can repel insects.

Tarragon

Description: A perennial herb, with a growing season from late spring to early fall. Called Artemisia dracunculus, it's part of the Asteraceae family (whichincludes lettuce, sunflowers, and artichokes). Tarragon has an anise-licorice flavor that is indispensable to many French and English recipes. It can grow to a height of about 2 - I/2 feet. The plant produces a drooping head at the end of the stem which contains up to 40 yellow-green florets. French leaves are smoother, glossier, darker and more pungent and aromatic than those of the Russian plants. It requires delicate care throughout the planting and growing process. Another name is called Estragon and since Tarragon root resembles a dragon, it's also called dragon plant. Be careful not to confuse tarragon with another plant called mugwort (Artemisia vulgaris).

Growing Instructions

Optimal Time/Temperature for Germination: French Tarragon produces sterile flowers, so it can't be sown from seed in your garden. You'll need to buy a young plant or obtain a cutting from a friend or neighbor. For best results, select a young stem and cut a length of around five or six inches. Remove the leaves from the bottom third. The stem can then be placed in moist potting soil after being dipped in rooting hormone.
You can also use root division techniques. This is best done in late fall or early spring. You could cut the root ball in half and plant the division in fresh soil in containers or directly into the ground. Because tarragon is a short-lived perennial, root division every three years helps continue your tarragon production in the garden.
Hardiness Zones are 4 and up. If you live somewhere that experiences fro s t and snow each year, consider planting the tarragon in a pot that you can bring indoors during the winter. Maintain your tarragon in winter. If you live in a more temperate climate, you may be able to winter your tarragon plant with a little mulch in the fall. Simply cover the roots with about one inch (2 ½ cm) of mulch. If you live in a colder climate, your plant will die back after the first frost. To protect the roots and ensure that the plant grows back in the spring, you will want to cover the roots with mulch and trim off brown stems in late fall.

Optimal Soil Conditions: It's a drought-resistant herb and needs a well-drained, sandy, light soil for best growth. A rich, acidic, or moist soil will result in poor growth, rotting roots and a reduced flavor. Tarragon grows best in a deep, loamy soil that holds moisture, but drains well. Tarragon prefers a soil pH of 6.5, but will grow in a range between 6.5 and 7.5, (neutral). If you are growing the plant in a pot or window planter, cover a layer of gravel with ordinary potting soil mixed with some garden soil. In a garden, use a bagged garden soil that is not too high in nitrates to avoid burning out the plant's delicate roots. Avoid using peat, which is too acidic. You can also use soilless potting mixes, perlite, vermiculite, rockwool, coco peat, and Oasis Rootcubes.
Due to its temperamental nature, you will want to plant tarragon in a place where you can easily manipulate the soil and somewhat control the temperature and amount of water it receives. A raised garden or herb bed is ideal. Be sure to plant it somewhere where it can get at least 8 hours of sunlight a day.

Seed Planting Depth, Spacing and Procedure: Because its roots are delicate and do not like to be disturbed, you will need to dig a hole big enough to accommodate the size of the pot the tarragon plant is in. Ideally, when placed in the hole, the top of the soil in the pot should line up with the top of the hole. Tarragon will grow to cover about one foot (30cm) of soil in your garden or window box. Therefore, you will want to make sure that there is at least 2 to 3 feet (60-90cm) of space between it and other plants. These dimensions apply to both Russian and French tarragon.
Russian tarragon seeds should be planted about one inch (2.5cm) in the soil. (because it is so delicate, you may want to avoid planting tarragon with other herbs, such as oregano, which can spread quickly and choke it out.)
Once you have planted the French tarragon plant or Russian tarragon seeds, you will want to cover its roots with soil and gently pack it down with your hands. This will ensure that the roots make contact with the new soil. You will then want to water the plant and cover the roots with a bit of mulch to keep the sun from damaging them.
This step does not apply to Russian tarragon. Simply plant the seeds approximately one inch (2.5cm) deep and let them grow. Russian tarragon seeds will germinate about 10 to 14 days.

Best Companion Plants and Plants that Hinder: You may want to consider planting your tarragon near an eggplant. It is believed to be particularly beneficial to the vegetable's growth. More companions are chives, cilantro, basil, and garlic. Plants to not plant with tarragon are oregano, thyme, and rosemary.

Crop Maintenance: After about seven weeks, you should have a fully developed tarragon plant. At this point, you will need to begin pruning it regularly to prevent flowering. This will help keep the plant from getting too large. It will also help more leaves grow. If you are growing your plant indoors or in a window planter, you will want to be particularly diligent about maintaining your plant. Make sure that it stays around two feet (60cm) tall; otherwise, it may get too heavy and fall over. You can use a pair of pruning clippers or scissors to maintain your plant. You can also cook or dry whatever leaves you prune.

Moisture Requirements & Solutions: The right amount of water is essential to maintaining your plant's health. If it is outside in the summer months, you will want to water your tarragon plant daily. Ideally, you will want the soil to go almost dry between watering, followed by a thorough soaking. This is true of indoor tarragon plants as well. Avoid over-watering your plant and letting the soil get soggy. This will kill your tarragon. Mature Tarragon, however, should be fine with a light watering every few days. Check the top inch of soil before watering. If it's moist, no need to water, If it's dry, give it a drink.

Weeding Needs & Solutions: Weed when needed. Regularly check for weeds growing underneath and around your tarragon plant and be sure to remove them early. The weeds need to be removed before they are able to grow large and get entangled with your tarragon plant's roots. The less you have to bother your plant's roots, the better. You can also put a ½-1 inch (2-3cm) layer of mulch over the roots to prevent weed growth.
Weeding should not be an issue if you grow your plant indoors.

Feeding Needs/Optimal Natural Fertilizers: Tarragon doesn't need fertilizer to do well. The best flavor is achieved when it's planted in low-nutrient soil.
If you're going to use some, an all-purpose variety should only be applied in the initial planting stage.

Pests, Diseases & Solutions: Tarragon isn't vulnerable to most pests, but to prevent diseases like mildew and rot, pick a location that has good air and water circulation. Tarragon is a popular plant that is considered a nurse plant, as it drives away most pests.
Tarragon rust is a fungus that travels long distances via wind-borne spores.
Reddish, rust-like spores appear on the bottoms of leaves after an initial period of white or yellow spots on the leaf tops. Severe cases stunt plant growth and cause leaves to yellow and die. To treat, remove and destroy infected leaves. For prevention, increase air circulation among your tarragon stems and plants and keep leaves dry. Try drip-irrigation or water plants early enough so that the leaves dry completely before sundown. As for pests, you might notice wire worms that destroy the root and above-ground parts of the plant. They can be controlled by inspecting the soil and applying neem oil.

Harvest and Storage

When to Harvest/Number of days to maturity: You can harvest fresh tarragon until around September. As a perennial, after this point, the herb will be dormant for the winter. Gather your tarragon leaves. Although you can harvest tarragon throughout its growing season, the best time to harvest is in the late summer. This is when the plant's aroma and flavor are at their fullest. At this point, you should pick a large quantity and preserve some leaves for later use. Do not cut off the entire stock. Just remove the fresh lighter green leaves. Be sure not to harvest more than one-third of the leaves from your plant. Harvesting too many leaves may weaken or kill it.

How to Harvest: All herbs, including tarragon, are best harvested around sunrise, before the morning dew evaporates. It's at this time of the day that their aroma and taste are at their best. Cut the branch away at its base. Use scissors for you could damage the plant by pulling too hard. The regrowth process will take around 4 to 6 weeks. After you have harvested the leaves, tie the tarragon into loose bundles and hang them out to dry in a warm, arid, airy, dark place. There needs to be enough air circulation to ensure that the leaves properly dry. It is also important that the leaves dry quickly. Otherwise, they may mold and get discolored, which will ruin them. Perhaps hang for one to two weeks. Hold the stalk by its tip, and run your fingers along it in the opposite direction of the leaves' growth to remove them. Tarragon has a tender stalk, and the leaves should come off quite easily. You can keep the stalks if you'd like for they are edible, although the texture can be a bit rough. Take the herbs down, and crumble them into airtight containers. Store the containers in a dark place. Dried herbs tend to have less flavor than fresh ones, but can last for a much longer time. You can also dry tarragon in a vegetable dehydrator or in an oven on its lowest heat setting. If stored in a cool, dark cupboard, your dried tarragon should last one to three years.

Optimal Storage temperature and conditions: Another method is to freeze the harvested leaves. Once they are thawed out, the herbs can be used as a seasoning. It's better to chop the tarragon into larger, courser pieces before freezing, and you can always chop them again if a recipe calls for smaller sizes. If you don't have a cookie sheet, you can use any hard surface, so long as the tarragon has a place to rest. Tupperware or even a cutting board could work. Then, place the tarragon in the freezer overnight. Transfer the tarragon into a freezer bag. The herb can remain edible indefinitely while frozen, so long as they remain cold throughout that time and aren't refrozen.

Fresh tarragon can be refrigerated for about a week. If it's rinsed and wet, pat it dry before placing it in a plastic bag for refrigeration. Most recipes will call for it to be rinsed and chopped. You can add it to vegetables, poultry, or fish for subtle flavor and aroma.

Rinse the tarragon branches in cold water. You'll want to make sure you get as much dirt off of it as possible, and the cold water will preserve the herb's crispness and aroma. Shake off any excess water, and let the tarragon sit on a paper towel for a few minutes. Remove and chop the tarragon leaves. Once again, you'll want to hold the tarragon by the tip of its stalk, before running your fingers along it. To chop the tarragon, collect the leaves in a small pile, and cut them into coarse pieces.

If you want to make certain dishes, such as tarragon butter, you will want to chop the tarragon into extremely fine and small pieces. While adding tarragon to poultry or fish dishes, you won't need to use such small pieces. Herbs are always best when fresh, but frozen tarragon can be suitable for a number of dishes. Freezing herbs changes their texture and makes them rough, so it's best to use fresh herbs for garnishes. You can use frozen tarragon in dishes that use tarragon in the cooking process itself, and not just as a garnish.

Seed Saving: If you decide to plant French tarragon, you will need to find a whole plant at a store or take a plant from a friend's garden. It is very difficult to grow French tarragon from seeds, and they are very rarely available for purchase. However, you can grow Russian tarragon from seeds. Tarragon is usually grown from cuttings rather than seed. The roots of French tarragon are very sensitive, so try not to damage them when transplanting a plant.

Notes:
In manufacturing, tarragon is used as a fragrance in soaps and cosmetics.

There are two types of tarragon, each with different characteristics. French tarragon is considered to be the best variety for cooking. However, it can be more difficult to plant and care for. On the other hand, Russian tarragon is a hardier plant but it has a less flavor. Depending on your growing situation, and what you intend to use the tarragon for, each plant has its own pros and cons. If you are concerned about having an authentic tarragon flavor, it is recommended that you go with the French variety. This is the type grown in most gardens and is used by chefs. Russian tarragon might be a good choice if you want a nice widow herb and are less concerned about the flavor. It tends to not be good for cooking, but makes an attractive plant.

Essential oil can be extracted from leaves and flowers.

The plant's thujone is toxic for pets.

To preserve Tarragon in Vinegar: If you don't have a canning jar, any jar made of tempered glass will work just as well. Fill a pot with water, and bring it to a boil. Then, place the jar into the water for 10 minutes. Remove it, and let it cool. It's important to sterilize jars before using them to preserve food. Without proper sterilization, the food could spoil quickly. Distilled white vinegar works best for this method. In small pot or pan, heat it to just below boiling temperature. The heat of the vinegar will allow it to absorb the flavors of the tarragon more easily. Place sprigs of tarragon into the jar. A good ratio for tarragon vinegar is three sprigs of tarragon, or 1 cup of fresh leaves and stems, per pint. For added flavor, lightly crush the tarragon before placing it in the jar. Seal the glass jar tightly, and let it rest in a dark, cool place for 3 to 4 weeks before using. Placing it in a pantry or cupboard would be the perfect environment, but be sure to label the jar with date you prepared the vinegar, so you know when it's ready to be used. Tarragon flavored vinegar won't work as a replacement for many dishes that call for tarragon as a garnish, but it's a great way to be able to add the taste of tarragon to all kinds of food.

Thyme

Photo by Rebecca McCarthy

Description: Thyme is a dwarf, woody, evergreen herb and is a member of the Lamiaceae or Mint Family. It has culinary, medicinal, and ornamental uses, and the species most commonly cultivated and used for culinary purposes is Thymus vulgaris. This herb produces attractive, aromatic foliage and can thrive in almost any climate. In colder climates, thyme is a hardy perennial, so it will survive the winter and live for several years. In warmer areas, it is usually grown as an annual, since it does not survive well in the hot summer. Aside from culinary purposes, many gardeners use this herb as a ground cover or border plant. It blooms with tiny flowers that are usually white, pink or lavender, and their fragrance can attract bees to your garden. Most thyme plants will eventually grow to be 6 to 12 inches (15 to 30 centimeters) in height. Different varieties of thyme have different growing habits - some send up flower stalks, others form mats, and others will cascade.

Growing Instructions

Optimal Time/Temperature for Germination: Thyme is easy to plant, simple to care for and can be harvested year-round. Thyme can be grown from seeds, plant divisions, or seedlings. However, growing thyme from seeds can be difficult because their germination is often sluggish, uneven, and grows very slowly as germination can take up to 28 days. Most gardeners suggest buying young thyme seedlings, which you can obtain at any nursery, or take cuttings from someone else's thyme. Hardiness Zones are 5 to 9.

Optimal Soil Conditions: Thyme thrives in full sun, so plant them in a very sunny area. Thyme likes dry, sandy soil with good drainage. Never plant this herb in soggy or heavy soil. This can result in root rot. If your soil does not appear to drain well, add some compost, sand, or organic material to help improve drainage. Maintain a soil pH between 6.5 and 7.0. Thyme likes somewhat alkaline conditions and its nutrient requirements are minimal. If you need to raise the pH of your soil, add lime to it. You can fertilize the young plants in spring with compost, diluted fish emulsion or some other organic matter, but otherwise you won't need to do much else to the soil.

Seed Planting Depth, Spacing and Procedure: Plant your thyme seedlings in spring about two to three weeks before the last frost. For best results, plant them in soil that is about 70°F (21°C). Space the seedlings 8 to 12 inches (20 to 30 centimeters) apart. Thyme can be planted as a ground cover, around paving stones, or near a wall, as long as the drainage is good. You can also plant it in containers.

Best Companion Plants and Plants that Hinder: Best companion plants are shallots, potatoes, strawberries, blueberries, tomatoes, eggplant, salad burnet, cabbage, lavender, and roses. Whatever research you do, do not plant Chives, Basil, or Cilantro close to thyme for they are very harmful to thyme in different ways.

Crop Maintenance: If you want your plants to continue being bushy and producing tender stems, you will need to prune your thyme back to half its previous height every spring. Do this after the last frost. If you do this, the next spring it will flourish again. After three to four years of growth with the same plants, their stalks will become woody and the plant will produce fewer leaves. At this point you may want to start a new batch of seedlings, especially if you cultivate thyme for culinary purposes. Use an almanac to check when the last frost usually occurs. After this date, it may be safe to cut back the thyme.

Moisture Requirements & Solutions: Thyme is a hardy, drought-resistant herb. You need to water the plants on a regular schedule, but not often. Give the plants a good watering when you see the soil around them has gone completely dry. Soak the ground thoroughly and wait until the soil dries completely before watering your plants again.

Weeding Needs & Solutions: Weeds will compete for the soil's nutrients and slow the development of young thyme plants. Control the weeds around seedlings either through weeding or mulching.

Feeding Needs/Optimal Natural Fertilizers: Once your seedlings take off, the plants will need very little attention to thrive. Thyme doesn't need a lot of nutrients to survive and too much fertilizer will cause it to lose its flavor and become gangly. Mulch your plants in autumn with organic matter like leaf mold, well-rotted animal manure or compost. This will deliver the minimal nutrients thyme requires all year long, as well as protect the plants from frost once winter arrives.

Pests, Diseases & Solutions: Mulching with limestone gravel or builder's sand can improve drainage around the plants and prevent root rot. You can try other mulches made of organic matter like leaf mold or straw, as well. Some potential pests are spider mites and whiteflies.

Harvest and Storage

When to Harvest/Number of days to maturity: If you grow your thyme for culinary purposes, harvest thyme just before the plant flowers for the best flavor. As for the flowers themselves, feel free to pinch them off if you like. This will stimulate the production of more leaves, however, the flavor of thyme won't be negatively affected if you allow your plants to bloom. If you enjoy the way the flowers look, allow them to grow freely.

How to Harvest: You can harvest thyme at any point in the year, although the flavor is usually the best in June or July. This is when the flavor is most concentrated. Cut off fresh green sprigs in the morning. Leave behind the woody parts of the stalk. Strip the tiny leaves off the stems before using them. When trimming off sprigs, always try to leave behind at least five inches of growth on the plant. This will help it continue to flourish. The more you trim and prune your thyme, the more it will grow. Regular trimming will also make your plants grow in a more rounded shape. Check an almanac or online to see when the first frost usually occurs in your area. Stop cutting thyme about two weeks before this date.

Optimal Storage temperature and conditions: Rinse and dry the sprigs. Dry the harvested thyme sprigs somewhere warm and shady. You can hang your thyme to dry in any dark corner of your kitchen, living room, or dining room, as long as it has good air flow and a warm temperature. It usually takes 1 or 2 weeks for thyme to dry out completely. Place the bundle on a clean sheet pan or a piece of wax paper and open it up. An easy way to do this is to hold the stem in one hand and run your fingers down the stem with your other hand. Keeping it in an air-tight container and keeping it out of sunlight can keep it fresh and tasty for several years after drying.

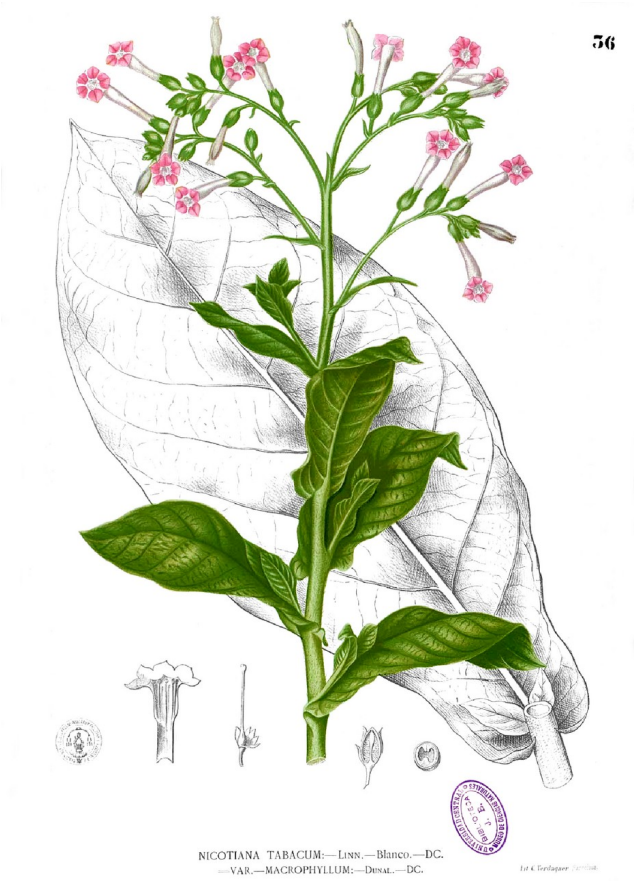
You can also dry them by laying them out on a tray and putting them in a food dehydrator. Once the pieces dry out completely, the leaves will easily fall off the stems. After you've removed the dried leaves, store them in an airtight container until you're ready to use them. You can also store your dried thyme in the freezer or preserved in oil or vinegar.

Either fresh or dried, thyme leaves are used for flavoring soups, gravies, stews, sauces, sausages, dressings and many other dishes. All parts of the thyme plant are fragrant because of the fairly high concentration of volatile oil.

Seed Saving: While cutting the ripening tops is one way to obtain seeds, use of cloths, sheets, or paper bags may prove more productive. Around noon and again in late afternoon, gently shake the plants to encourage the ripe seeds to fall onto the sheets or into the bags. (keep in mind if the plants are wet or damp the tiny seeds may stick to the leaves and flower heads.)

Notes: The most popular varieties of thyme are: Common Thyme, Golden King Thyme, Mother of Thyme, Lemon Thyme, Garden Thyme, and German Thyme.

Tobacco



Nicotiana Tabacum

Description:

Tobacco is a member of the Solanaceae or nightshade family. This family includes tomato, pepper, eggplant, Irish potato, and a number of other plants. The Nicotiana rustica species was commonly used by American Indians and may still be used for ceremonial purposes in some areas.

This growing instruction is mainly about the use as an ornamental plant or for producing rolling tobacco.

Growing Instructions

Tobacco should be grown in a sunny location on well-drained soils. Poorly drained soils could result in poor growth and even death of the plants. Tobacco can be grown on poorly-drained soils if the rows or hills are bedded and ditches or furrows are used to remove excess water. Drought stress could limit growth on excessively drained soils unless irrigation is provided. Lack of sun will result in spindly plants, poor growth and thin leaves. Some types of tobacco such as that used for cigar wrappers are grown under some shade to promote desirable leaf characteristics.

Do not plant tobacco on the same soil more than once every four to five years. Instead, rotate the tobacco with plants that are not susceptible to common soil-borne pests of tobacco. Grasses would be excellent rotations for tobacco, while tomato, pepper, and similar plants would not be suitable. In addition to soil-borne pests, several virus diseases and insects that attack tomato and pepper also attack tobacco, so try to keep these plants in different areas of the garden.

Optimal Time/Temperature for Germination:

Pre-sow indoors beginning in February on seedling soil in a small greenhouse at 21 to 25 degrees inside the house. Make sure the soil is moist enough, but not too wet either. To make it easier to pre-sow and spread the seed, the seed can be mixed with some sharp sand and scattered by means of a can or lid with some holes. Or spread the seeds directly and carefully in the soil, with the fingers 'like salt' over the surface, but do not squeeze the seed too hard.

Spread the seed well and spatially on the surface and do not cover with soil, mist lightly with water again. Sow on evenly distributed and levelled seed-covering soil, keep moist with spray mist.
Sowing too close together gives problems later on, in transplanting to individual pots. It can take up to 10 days for the seed to emerge, but under good conditions you can already see green dots after a few days. Keep the soil lightly moist with mist, not too wet and not too dry, check regularly.

Tobacco is light-sensitive seed, in the wild the tobacco seed rises best after a wildfire, so it has a chance to emerge and not be overgrown by fast-growing plants and grasses. Tobacco is rightfully a fire element plant. The seed-bearing buds that come into contact with the fire will burst open, causing the countless seeds to fall to the ground. One of those seeds will grow into a full-fledged plant thanks to the help of the fire. Store a small portion of the seeds in case something happens in a cool, dry place and dark place.

Direct sunlight quickly makes it too hot in a seed/breeding box on the windowsill, they will fall over from the heat in such a box with a plastic cover.
From sowing onwards, preferably place them in as light a place as possible but protect them from direct sunlight by using white limed glass or very thin paper such as patterned paper which they have in a fabric store. Do not use patterned paper or whitewashed glass on cloudy, gray days, as they will stretch by looking for sunlight and is not desirable.

When the seedlings in the propagator/greenhouse get leaves as big as a thumbnail then prick out/transfer to each a separate pot of e.g. 7x7cm.
Be careful not to damage the roots, now they can grow up for a few weeks.
Scoop out a corner of the container with a spoon or flat cheese slicer, place it in front of you on a newspaper and now the young plants are fairly easy to pick up and pot them up. Now you notice the advantage of a fine seedling soil with no lumps in it, the roots are now not in a lump and without damage transferred to a pot.

Seed should be sown about 50-60 days prior to the desired date of transplanting. Transplanting should be after there is no further danger of freezing temperatures. Normally the best transplant is about 6-8 inches in length.

If the plants have grown during a few weeks and the leaves are clearly out of the rim of the pot, transplant to the garden or repot into large pots or tubs. Do not transplant to the garden until after the last chance of night frost.
If the small seedlings/plants lose the leaf green it is a sign of nitrogen deficiency, the plants get a yellow glow or yellow spots. This is easily remedied by adding a low/half dose of liquid organic tomato fertilizer to the water.

Optimal Soil Conditions:

Ph value of the soil is ideal if it is around 5.8 to 6.5 (PH test kit garden center). If lime is needed to raise the pH, use dolomite in order to get the magnesium nutrient which is important for plant growth. Fertilize the soil with well-digested cow, horse or sheep manure (sheep or llama manure is preferred), possibly add some extra lime and/or use e.g. a (bio) complete vegetable garden fertilizer. Compost can also be applied very generously. Some Lava meal (contains many minerals) may also always be worked into the soil. In sandy soil some Bentonite (rock flour, also called swelling clay) can be used in connection with the mineral housekeeping and better moisture retention. The soil needs to drain off excess water quickly, clay soil can be improved by adding natural lava clay granules or sand and humus to make it lighter and better draining. Tobacco does not like too wet soil, root damage can occur. Do not fertilize too heavily.

Seed Planting Depth, Spacing and Procedure:

Plant spacing in the open ground: space the plants about 24 inches apart. Rows should be 42-48 inches apart. .
With single rows, the plants have more space and light each. This results in larger plants, but it does not necessarily yield more than with double rows. Single rows does produce the largest leaves. With double rows, zigzagging in the row itself, the plants get less light at the bottom so that they themselves turn yellow faster and become ready for picking. The leaf will also yellow more quickly after picking before it dries. The double rows mean that proportionally more is placed on the same surface area than as with single rows, which in the end gives a slightly better result. Double (zigzag) rows are preferred.

Before planting, make a hole of about 20 cm deep and place the plant in the middle, this is in preparation for the next step:

Earthing up.
Once the plants get to knee height (at about 1/2 m) start earthing the plants up. To earth up is to push soil towards the stem in a big pile of at least 30cm high, so they are more resistant to falling in high winds. storm is bound to come. It doesn't matter if a small leaf disappears under the ground.
Water young plants when it is very dry but preferably let them search for water themselves so they develop a good root system. Repeat the earthing up process several times so that they are firmly planted in the ground when they reach full size.

In very windy areas, the crop should be protected by a hedge or e.g. pole beans, 2 to 3 rows of corn, or other crop that catches and flattens most of the wind. It is always advisable to place a windbreak around the tobacco.

Topping.
Nicotiana Tabacum intended as a smoking tobacco preferably to be topped, that is to say the flowers are removed as soon as they can be cut and preferably also the thieving shoots (as with tomatoes). There are also growers who just let the thieving shoots, called suckers, grow in the armpit of the leaf, however, the true tobacco specialist will tell you that the thief shoots are of inferior quality. It may be necessary to remove suckers several times.
Thieves and flowers draw strength from the growth and development of the main leaves that are directly attached to the stem. If the plants are thieved, the final quality of the tobacco will be much better. Thief leaf is often much lighter and less powerful in experience, which some people prefer. You can experiment with this yourself. if you wish.

Best Companion Plants and Plants that Hinder:

The same as for tomatoes and other plants from the nightshade family. The big leaves give a lot of shade so the companion plants need to like that.

Crop Maintenance

Moisture Requirements & Solutions:

The soil needs to drain off excess water quickly, clay soil can be improved by adding natural lava clay granules or sand and humus to make it lighter and better draining. Tobacco does not like too wet soil, root damage can occur.

Weeding Needs & Solutions:

As the big leaves produce a lot of shade, not many 'weeds' (or 'wild herbs' as we call them) will be growing around the plant. The best to do is, cut the little plants at the base and place them on the earth, so they can compost.

Feeding Needs/Optimal Natural Fertilizers:

Fertilizers for tobacco could be the same fertilizers used for tomato, pepper, or potato.

Fertilize the soil with well-digested cow, horse or sheep manure (sheep or llama manure is preferred), possibly add some extra lime and/or use e.g. a (bio) complete vegetable garden fertilizer. Compost can also be applied very generously. Some Lava meal (contains many minerals) may also always be worked into the soil. In sandy soil some Bentonite (rock flour, also called swelling clay) can be used in connection with the mineral housekeeping and better moisture retention. Do not fertilize too heavily.

Pests, Diseases & Solutions:

Aphids – They are usually harmless for your plants, but if you want to clear them off, then just wash your plants periodically with the garden hose.

caterpillars - those can eat the whole leaf in one day - that will definitely damage your harvest. Natural way to protect your plants from being eaten up by leaf-grinders is to pick them up by hand. Remember that you are not a commercial grower, maximum 30-40 tobacco plants is all you need for the year. This number of plants is pretty small - you can manage it by hand, just walk around your garden every morning with your first cigarette in hand and pick up all the caterpillars you can see - they are more visible in the morning before the mid-day heat, when they start hiding from sun.

Harvest and Storage

When to Harvest/Number of days to maturity:

Harvesting is done from about 2nd to 3rd week of July until the end of September.

How to Harvest:

Harvesting could be accomplished by either removing leaves from the stalk in the field and curing them or by cutting the stalk off at ground level and hanging the entire stalk in the curing facility for the leaves to cure. The leaves would then be removed from the stalk after they have cured. If the entire stalk is cut for curing, it should be about 3-4 weeks after topping. The lower leaves would be partially deteriorated at this time. If the leaves are removed in the field, there should be four or five harvests at intervals of 1-2 weeks. The first harvest would be at or soon after topping and when the leaves show a slight yellowing. Harvesting is done from the bottom up. Pick 3 to 5 leaves per plant per round with a sideways movement from the stem and repeat this every 7, 10 or 14 days. A ripe leaf no longer looks as smooth, is a bit thicker and firm and more likely to be a bit bulbous, curly and lumpy and can start to look yellow. You determine your own quantity and harvesting rhythm.

It is advised to rinse the leaves clean of sand or impurities in a tub of rainwater and a flat soft brush (bath brush) (note TO: I did this, but have my doubts now if this is neccessary and also valuable substances could be rinsed of) and thread them through the vein (or use a clothes-pin for each leaf). The harvesting and hanging is thus spread over several rounds of harvest over several weeks. Harvesting everything at once is also possible but not recommended if there is not enough space.

Thread the leaves onto a piece of string (hemp/flax) with a threading needle or hang them with a clothespin, a few cm from each other, preferably under a ventilating shelter because of rain and sun, If the leaves have yellowed and are limp with brown tips, they can be left to dry in a dry, airy place in the house, possibly with a fan to get some air movement. Check regularly for you can find the most fungus on the main vein of the leaf because it stays moist the longest. aerate and/or heat. The main vein can be zipped in at the bottom with a small pointed blade for faster drying.

Optimal Storage temperature and conditions: / Optimal Preserving Procedures:

Curing: the drying of the leaf. Tobacco may be cured with heat added or it may be air cured. There does not appear to be any practical means for the gardener to use heat to cure the tobacco because of the facilities that are required. Tobacco could be cured without heat if a building with good air circulation is available. Unheated garage or barn which gets all the weather elements except the rain (moisture, wind, cold, heat) is the best place for natural curing.

Temperatures for air curing may range from 60-65°F (15 C) up to 90-95°F (32 C), and the relative humidity of the air should be about 65-70 percent. Proper curing should take a few weeks in order to have good quality. Tobacco that cures too fast will be green and not have good aroma and flavor, while mold or rot may develop if curing is slow. A building that can be opened and closed as needed to control the relative humidity and drying rate is desirable. Curing procedures need to be developed for individual situations.

The 'color-cure' process, conversion and loss of the chlorophyll, is first seen at the bottom of the plant when the leaves are ready for picking. The lower leaves of the plant, the sand leaf, are beautifully thin and aromatic, which makes them extremely suitable as a cover for cigars. With warm temperatures in summer this yellowing process before the final drying is easy, the colder it gets the slower this yellowing process is. Once the leaves are strung on hemp string they should not be dried too quickly, during a hot day with lots of wind your tobacco can be green and glassy dried between the leaf veins (lamina) within 2 days. Green tobacco tastes very hard to bitter, doesn't smell very good and is not what you are aiming for. On very hot days with lots of wind and low humidity you can hang open plastic bags over the tobacco with clothespins on the underside of the bags. This allows the tobacco to break down its leafy greens nicely without drying up too quickly. But also the plant sprayer with clean water can help on very dry days to keep everything moist.

Processing.
When the middle grain is dry and crisp, it is easily removed by first hanging the tobacco in a damp room or under a roof outside (or spray it with water). The tobacco becomes supple and alive again as it absorbs moisture back into the air making it easy to strip the main grain from the tip of the leaf. Cigars can now be made from it. Dry tobacco can be kept in a dry and cool place in e.g. banana boxes. Check the tobacco a few times a year to see if it is not too damp, because mold is on the lookout for. They say that tobacco has a lifelong shelf life, but there are producers who first let the tobacco lie for 6 years before processing it. During storage and maturation the quality improves, it becomes fuller in flavor, less sharp on the tongue, while the aromas are more fragrant.

Aging: All commercial tobacco is aged for a year or more before it is used. Unaged tobacco is harsh and does not have good flavor. For the home gardener, aging will probably be as difficult or even more so than proper curing. Aging may require as long as 5-6 years and does not occur unless temperature and moisture conditions are favorable. If the tobacco is too dry, there is no aging and if it is too moist, there will be decay of the leaves. Unfortunately the proper temperature and moisture content vary widely. The home producer would need the knowledge and skill to properly age the tobacco.

Fermenting: also called sweating, This is the process by which ammonia is released from the leaf to make it sociable. It can be done by heaping the tobacco into large piles called pylons that raise the temperature and humidity or by use of a kiln with a heater and humidifier. Under the raised temperature and humidity enzymes in the leaf cause it to ferment. It is not necessary to spray a fermenting solution on the leaf as some suggest the enzymes will do it naturally. Sometimes this is also referred to as curing. This system of maturing leaf came from the days when tobacco was shipped by sail. The ship would sit in port for a few weeks, very humid and bails stacked tight together. When the tobacco reached it's destination it was found to smell and taste sweeter.

For more information: Tobacco Leaf Harvesting, Curing, and Fermenting:
https://www.leafonly.com/tobacco-harvesting-curing-fermenting.php
wooden kiln instruction guide: https://www.seedman.com/wkiln.htm
Tobacco Fermentation / Curing Chamber for Cigars:
https://www.instructables.com/Tobacco-fermentation-curing-chamber-for-cigars/

Seed Saving:

If its only 1 type plant you have then just leave 1 or 2 plants to set seed and wait for the flowers to pollinate themselves and produce seed pods, after the seed pods turn brown and become a dry and brittle, you can take the seeds off by breaking off the top of the seed pod .If you have different types of plants that you will want to save seeds from, then you can bag the flowers before they bloom with a fine mesh or veil that you can buy at any fabric store, this will prevent insects/bees from cross pollinating the plants and keep them from becoming hybrids and it will also allow airflow to the flowers.

Notes:

Blood Lice in Poultry - Parts of the dried log can help control blood lice in the poultry brooder house. Cut or saw the bare dry logs to a length of 50-80 cm and distribute 1 per square meter. Check for mold with moisture and replace if necessary. The main veins can also be used for this purpose. Blood lice are very difficult to recognize on the chicken itself, best seen on the eggs as small red dots.

Lice in plants - Dried tobacco (waste) can be incorporated into the root area of the plant to better resist aphids and whiteflies.
This is done with cacti like plants but then again against mealy bugs that sit on the roots.
A tobacco tea can be made by adding 50 to 80 grams in a liter of cold water and bring gently to the boil. When it boils take it off the heat and let it cool, then strain it through a cloth and put in the syringe. Spray the top and bottom of the leaves of the plant to be treated. After a few days repeat again or if the weather is desirable.

Links:
https://ufdcimages.uflib.ufl.edu/IR/00/00/14/90/00001/AA26000.pdf
https://www.elenasgarden.ca/Growing-tobacco-Curing-tobacco
http://www.tobaccoseed.ca/
http://www.heirloom-organics.com/guide/va/guidetogrowingtobacco.html

Tumeric

Description: This herbaceous perennial is a member of the Zingiberaceae family (ginger) and is also considered a spice. The bloom is from July to August and range with burgundy, green, pink, white, yellow, or bicoloring. This showy part is actually a bract, not the true flower, which means an additional use as an ornamental. The canna-like leaves make it an attractive foliage plant even when flowers are absent. The plant grows 3 to 4 feet tall and wide. Tumeric's rhizomes have been used in food preparation and in traditional medicine. Other names are common turmeric and turmeric root.

Growing Instructions

Optimal Time/Temperature for Germination:
Hardiness zones are 8 to 11. This is not a plant to prune. Your main jobs are to keep it well watered and to shelter the rhizome from cold temperatures. To grow a turmeric plant in a climate colder than zone 8, you have three options: Treat it as an annual. / Grow it in the garden during the summer, then dig the rhizomes up in autumn to store them away for the winter indoors. In this case, you would cut off the top growth, then store them in a cool, dry location. Gardeners typically use peat moss, sawdust, or vermiculite as a storage medium. Keep the storage medium slightly moist throughout winter by occasionally misting it. / Grow it in a pot that can be placed outdoors during the summer then moved indoors in fall, until warm weather returns.

Turmeric takes a long time to sprout, but luckily, it can be done indoors during the winter. It also won't require light until it begins to sprout, so you don't need to worry about taking up a big space near a window for the 5-6 months required to sprout the stalks. Turmeric rhizomes grow when the temperature is 70–95 °F (21–35 °C). If the temperature drops below 50 °F (10 °C), your plant may die before it has had a chance to sprout. Your turmeric will begin to sprout after 6-10 months of watering in a warm climate. Once you see a stalk start to stick out of the planter or pot, it has started to grow into a mature plant. Leave your turmeric plants where they are until the stalks grow to 4–8 inches (10–20 cm) in length. If you live in a warmer climate and want to plant your turmeric outside, you can plant the rhizomes in your garden. Do it in the winter after the last frost passes so that they sprout in the summer months. You can't do this if it gets colder than 50 °F (10 °C) outside in winter though.

Optimal Soil Conditions: In the far North, the plant needs full sun and the further south you are, the more it is advisable to afford it some afternoon shade.
Turmeric likes a rich soil. Adding compost and/or manure helps achieve this. Being well-drained and consistently moist is important for its soil too. If you're planting turmeric outside, do it in a greenhouse with a planter's box if you can. Turmeric requires a lot of space for the roots and needs a lot of humidity to grow early on. If you're moving the plants into a planter's box, dig your hole so that the plant has at least 1.5 feet (0.46 m) of space around it in every direction. Maintain pH between 6.0 to 8.0 - slightly acidic to slightly alkaline.

Seed Planting Depth, Spacing and Procedure: Since turmeric is a fairly large plant, choose large pots (roughly 18 inches across and at least 12 inches deep).
Buy a couple of rhizomes of it in you local grocery store. (more likely available online than at your local garden center). Inspect the rhizomes for buds (think of the "eyes" on a potato). A small rhizome will have two or three buds on it, which is fine. Larger ones may have more, in which case you should divide them. So let's say that each rhizome that you bought has 6 buds on it. You would break each rhizome in half and plant two halves in one of your pots, the other two halves in another pot. Plant these rhizomes two inches deep in the pot, in early spring. The buds need to be facing up. Keep the pot indoors until nighttime temperatures no longer dip below the 50s (F). At that point, bring the pot outdoors and put it in a sunny spot that is sheltered from high winds.

Best Companion Plants and Plants that Hinder: You can plant crops that can help provide shade where Tumeric can grow best. It will even act as an insect deterrent due to the allelochemicals that it emits. This can be beneficial to other crops that are especially susceptible to harmful pests. Good companions are Beans, Cilantro, Eggplant, Fruit Trees, Ginger, Lemongrass, Onions, Peas, Peppers, and Tomatoes.
What not to grow
together with Tumeric is corn. When planted with corn, it has been shown to not yield as much at harvest time when compared to being planted with other crops besides corn.

Crop Maintenance

Moisture Requirements & Solutions: Make sure the soil in the pot never dries out. This can be a challenge because the soil in containers dries out more quickly than soil in the ground. Since turmeric likes humid conditions, increase humidity further by misting the plant's leaves during periods of hot, dry weather. Turmeric is a plant that tolerates wet soil. At the very least, watch out that its soil never dries out. Turmeric's water needs are considered to be above-average.

Weeding Needs & Solutions: Weeds can become a constant menace to all cultivated crops including turmeric. High temperature and humidity pave way for luxuriant growth of weeds. Weeds compete with crop plants for soil moisture, nutrients, light and space. Weed competition in early stage of crop growth virtually affects the yield of rhizome. Weeds cause greater losses of crops than either insect pests and plant diseases. They often suppress the growth of turmeric plants and at the same time encourage the growth of many pathogens and pests.

Feeding Needs/Optimal Natural Fertilizers: Because turmeric needs a lot of nutrients, feed it every month. Natural liquid fertilizers are best, such as kelp powder mixed with water.

Pests, Diseases & Solutions: If you find lots of physical damage to your leaves, it could be a sign that you have a thrips infestation or a caterpillar feeding on your plant. Use an organic pesticide like neem oil. When you remove or inspect a rhizome, if it looks gray or pale, it could be a sign of scale damage. Throw your rhizome out to prevent the infestation from spreading and then you need to treat the soil. Turmeric plants are often unappealing to many insects in temperate regions of the world. Turmeric powder can even be used as a pesticide with some crops.

Harvest and Storage

When to Harvest/Number of days to maturity: At some point in the next 2-3 months, the turmeric plant will begin to brown and dry out. This is the best time to harvest your turmeric. If you continue to let the plant grow, it will slowly rot over time and ruin any potential turmeric that you could extract. You can tell if your turmeric is almost ready for harvesting if it seems like it’s struggling to retain water and dries out quickly.
Harvest it in fall after the first frost, which will produce yellowing in the leaves. It is the rhizome that you are harvesting because that is the plant part most often used in food preparation and medicinally.

How to Harvest : Cut the stems of your plant 1–3 inches (2.5–7.6 cm) from the soil. To harvest the turmeric, you need to access the adult rhizomes underneath the soil. To start, use garden shears or a cutting knife to remove the stalks near the soil. Discard the leaves by composting them. If the plant is dry enough, you should be able to simply snap the stalk near the bottom.
If you are growing turmeric as a spice or as a medicine, you will want to remove at least a portion of the rhizome each year at the end of the growing season. The rest can be brought indoors as you would when growing turmeric as an ornamental. This way, you have an annual source of turmeric for use in cooking.

Optimal Storage temperature and conditions : Once you've cut the stem, pull the remainder of the plant out of the soil by hand. Cut or snap off the remaining sections of stalk and take the mature rhizome to a sink to wash it. Run it under warm water and rub it softly by hand to remove the dirt and soil off of the rhizome. Don't forcibly scrub the rhizome. You just need to remove the outer layers of dirt and soil before grinding, using, or storing it. Place any rhizomes that you don't plan on using in an airtight plastic bag or storage container in the fridge for up to 6 months without inflicting any damage on the flavor of the turmeric.

To prepare a rhizome for grinding, boil a clean rhizome in a pot with water. Once the water reaches a rolling boil, turn it down to a simmer. After 45-60 minutes, drain the pot in a colander or strainer. You can rub the skin off of the rhizome after boiling it, although it's perfectly fine to leave it on. You can tell if the rhizome is ready for grinding if a fork easily pierces it after boiling. Grind your rhizome to make turmeric powder. Let your rhizome dry out in the sun for the day. Cut your rhizome into smaller pieces and then grind it with a spice mill, grinder, or with a mortar and pestle until you've got a fine powder. You can use a food dehydrator set to 140 °F (60 °C) to dry your rhizome more quickly if you'd like. It's ready to cut and grind once it's brittle and dry. This process usually takes 30-45 minutes. Store turmeric powder in an airtight container designed for food storage. Consider wearing a pair of gloves when you peel or cut the turmeric. It's also a good idea to wipe down your cutting board as soon as you've finished preparing the raw turmeric. If you don't want the raw turmeric to accidentally stain your clothes, put on an apron.
Sprinkle ground turmeric on top of cooked foods as an added spice. You can sprinkle it on casseroles, roasted vegetables, eggs, steamed vegetables, and soups. You can also blend it into a smoothie. To make turmeric tea, add 1 teaspoon of ground turmeric and a pinch of black pepper to a cup of water and boil for 3 minutes.

Seed Saving: To grow it, you'll need to plant a turmeric rhizome, which is an immature length of turmeric root. Growing turmeric is easy as long as you can consistently monitor and water your rhizome. This shouldn't be too tall of an order since most of the growing process can take place indoors and doesn't require sunlight so later transfer them outside.

Notes:
Tumeric leaves are also edible. They are added to curries and used as wrappers for steamed dishes.
You can replant rhizomes after they've been stored in your fridge. As long as the rhizome hasn't been boiled or cooked, you can replant with the above process.
Do not grind any rhizomes that have been treated with a nonorganic pesticide. Instead, wash and replant them for another cycle before using them. If your turmeric plants start to smell when they're being stored indoors, it may be a sign that the rhizomes are rotting.
Turmeric takes a long time to grow and requires a lot of water to stay healthy. If you know that you're going to be gone for a long period of time at some point in the next year, you may want to hold off on growing turmeric.
Tumeric makes an excellent natural dye for fabric, producing rich yellows and oranges.
Caution: If you're pregnant or nursing, ask your doctor before adding raw turmeric to your diet.

Wormwood

Description: This herbaceous perennial evergreen is of the genus Artemisia in the family Asteraceae. It can grow to reach heights between 1- 3ft. and it can live up to 10 years if provided with the proper growing environment. In the wild, wormwood can be found growing plentifully near cliffs, roads, and riverbanks. The flowering beauty blooms during the summer and autumn months, and wormwood is pollinated by the wind. This unique plant is actually known as much for its one-of-a-kind foliage as it is for its flowers. Wormwood plants produce three different types of leaves on the bottom, middle and top of the plant. The leaves at the bottom of the stem are bipinnate or tripinnate leaves with long petioles. On the middle of the stem are smaller, less divided leaves with much shorter petioles, and at the top, the plant produces very simple leaves without petioles at all. Wormwood boasts a wide variety of greenish-gray foliage and stunningly-bright yellow tubular flowers, and the plant comes equipped with both male and female reproductive organs. The pale silvery-white foliage of the wormwood plant also makes an excellent contrast to the darker and greener leaves in the garden with its characteristic feathery fan shapes. The leaves are covered in glands that release a substance that repels insects. Other common names: artemisia absinthium, absinth sage, absinth sagewort, (Artemisia vulgaris) mugwort, , Artimisia Alaskana, Stinkweed, felon herb, sailor's tobacco, and chrysanthemum weed. There's an ecological threat since it does invade coniferous and hardwood forests, prairies, meadows, grasslands, fields, and disturbed areas.

Growing Instructions

Optimal Time/Temperature for Germination: Since most lawn and garden centers won't be selling Wormwood starter plants, it's best to start with seeds. Wormwood plants grow best in Hardiness Zones 4 to 9. They will develop a deep and complex root system. This is where nourishment is derived, keeping the plant thriving year after year. Seeds are incredibly tiny and best germination temperature is about 55-65 degrees F. Time to sow seeds in starter pots is about 6-8 weeks before last expected frost.

Time to sow seeds directly on the surface of the soil is when weather has warmed and all danger of frost has passed.

Optimal Soil Conditions: The plant requires a sunny location with quickly draining soil. It does best in a fertile soil that is rich in lime and a pH level around 5.5. It is a very hardy plant and famously adaptable to poor growing conditions.

Seed Planting Depth, Spacing and Procedure: Sow seeds in flats. For annuals, plant seeds at a depth of an eighth of an inch beneath the soil in spring or autumn. For perennials, sow in autumn on the surface of the soil. Provide 55- to 65-degree F temperatures, and allow the seeds two to nine weeks for germination. Perennials will require around 12 hours of light per day!

Transplant seedlings from flats to their outdoor homes after the last frost has come and gone, allowing 12 to 24 inches of space between each plant.

Because Wormwood seeds require light in order to germinate, they are sown on soil's surface or scatter about 3-5 seeds on soil surface of starter pots left uncovered and placed so they will receive direct lighting. (Make sure that the area does not receive excessive shade.)

Divide and transplant your wormwood plants every two to three years during autumn by following these steps. Remove the entire root ball from the ground. Cut the outer parts into sections, made up of equal parts root and stems, then discard the center of the plant. Replant divisions one to two feet apart in a sunny well-draining location. (the reputation for consistently meeting the need of this specific seed by quality is seedneeds.com)

Best Companion Plants and Plants that Hinder: Chemical compounds may inhibit the growth of some surrounding plant species while stimulating the growth of others. Wormwood is a poor companion around edible plants in vegetable and herb gardens. The natural chemical substance contained within the leaves is also water soluble and washes into the soil with heavy rains. This chemical inhibits the growth of garden plants, especially fennel, sage, caraway and anise. Wormwood is also a poor companion of young plants and seedlings. If you want to make wormwood a part of your garden landscape, plant this perennial with established ornamental plants. The only plant that is considered a good companion for wormwood is carrots, as wormwood discourages attacks by the carrot fly. However, due to its toxic nature, it is better to use other companions that achieve the same effect, without the toxicity.

Crop Maintenance: Deadhead your wormwood plants during the summer to prevent self-seeding and to keep them looking their best. Snip faded flowers at the base of the stems, and carefully rake up any seeds that may have fallen during the pruning, then discard all seeds and scraps. Cut the entire plant back by half during midsummer if it starts to look leggy or droops. Using a sharp pair of shears, snip the top half of stems just above a pair of leaves.

Prune wormwood in autumn to encourage a more compact, bushier plant, cutting the entire plant down to a height of two inches. If you start to notice drooping stems or discolored foliage, cut off watering for a week, and check the plant's drainage conditions.

Moisture Requirements & Solutions: it can still benefit greatly from occasional watering, especially during droughts or in areas with especially hot climates. Water frequently during your plant's first summer, providing 1 in. of water every 7 to 10 days and allowing the soil to dry completely before watering again. Once wormwood is established in your garden, you can cut back on watering drastically, only providing hydration every two to three weeks during the summer and then cutting your wormwood plants off from extra moisture completely during especially rainy weather.

Weeding Needs & Solutions: Prune back any overhanging tree branches or shrubbery that blocks the wormwood plants from getting plenty of exposure to sunlight. A small input of natural compost will not hurt in early winter, to keep soil around the plant /shrub.

Feeding Needs/Optimal Natural Fertilizers: since it does not like rich soil, no supplemental fertilizer should be necessary.

Pests, Diseases & Solutions: The wormwood plant is a useful plant for discouraging harmful insects. Its aromatic qualities make it a natural deterrent to common garden pests such as ants, slugs, snails, cabbage loopers, cabbage maggots, flea beetles, codling moths, tomato hornworms and other larger pests like mice. Never use wormwood tea on edible garden plants.

Wormwood is also rarely troubled by any typical garden diseases. However, it is susceptible to root rot when exposed to overly wet soil conditions. In fact, you can make your own potent and all-natural pesticide by mixing apple cider vinegar with fresh wormwood leaves.

Harvest and Storage

When to Harvest/Number of days to maturity: Patience is key when it comes to harvesting from wormwood plants. Experts advise gardeners to wait until wormwood plants are at least two years old before harvesting, as the herb's strength and potency will increase as the plant matures. You can use the upper stalks as a potpourri ingredient or harvest the oil to make a powerful antiseptic or an all-natural pest spray. Eventually, Wormwood, if left to its natural behavior, will grow into a bush about 3-4 feet tall and a diameter of about 2 feet. Wormwood matures in late July and early August when it has the right maturity for the best essential oils. There is usually only around a week to week and a half of time frame that is just right to harvest wormwood to harvest it at its peek

How to Harvest: Ideally wormwood should be harvested once the claws have opened and are just turning yellow, and are not very big. This will provide the best essential oil quality. If the pods are: closed, has its 4 little arms, and are green, then it is too early to harvest. However, if the blooms have turned yellow, become large and turned to pollen (that you can rub off on your fingers), then it is too late to harvest.

Optimal Storage temperature and conditions: Cut the wormwood with scissors just above the last dead leaf. Then bundles, washes and dries it one time. The next step is the trimming. It is then trimmed just leaving the best of flowers. The bundles are hung upside down to dry for 2 to 3 weeks, then cut into smaller pieces. The pieces are then bagged to sweat for a week. After this step the wormwood is dried again to ensure there is no further mild growth.

Seed Saving: When collecting seed, cut the foliage to the ground (leave some plants remaining for self-seeding) and place in a paper bag. Allow to dry and then gently shake the seeds loose. / Propagation is most often done by simple division of the root clumps, which offers the fastest, most trouble-free method.

Divide plants every two to three years, or when you start to notice the center beginning to die out. This is a simple matter of digging up the entire plant, dividing the root ball, and replanting. / You can also grow by cuttings with a cut 4 to 6 in. section from the tip of 2 or 3 healthy, semi-ripe shoots, using hand pruners, and place them in a container of water. Take the cuttings in autumn after the humidity drops. Make the cuts below a pair of leaf nodes from shoots of recent growth.

Notes: `Absinthe' is now banned in many countries. Thujone is a potentially poisonous chemical found in wormwood. Distilling wormwood in alcohol increases the thujone concentration. Always exercise caution when planting, handling or coming in contact with the wormwood plant, as all parts of the plant are toxic. Because this bitter-tasting plant is poisonous, resulting in symptoms that range from headaches, convulsions and nerve damage, wormwood is a poor plant choice in homes with small children and pets. The aroma of the wormwood plant attracts dogs.

Yucca

Description: The yucca plant is a tough perennial succulent that can grow as a shrub or a tree, depending on the species. While the many species of yucca vary in size and color, they are all able to thrive in hot, dry climates and can be cared for in the same way. The plants often are started from cuttings, although growing yucca from seeds is possible. The easiest propagation method involves division of an already mature plant. Once started, yucca plants can be grown in pots or planted in the ground outdoors, either directly in your garden or in a specially-prepared raised bed.

Growing Instructions

Optimal Time/Temperature for Germination: Yucca seeds are slow to germinate, and many species have a low success rate sprouting at all. The seed may even take a full year after planting to sprout. Yucca seeds planted indoors should be started in winter, to give them as long as possible to germinate before the *next* winter begins. Planting directly in garden soil is not as effective. If planting directly in garden soil, plant in early spring.

Optimal Soil Conditions: The yucca plant should be placed in a soil mix that is 50% sand or gravel and 50% soil. You should make sure that there is neither too much gravel nor too much soil. Yucca needs a fast-draining soil to prevent root rot.

Yucca plants need a hot, dry environment, so give your plant access to direct sunlight. Certain yucca species can thrive in colder or shadier locations, but these are in the minority, and typically still do well in full sunlight.

The acceptable USDA Hardiness Zones for yucca range depending on species, from zones 4 through 11 (minimum winter temperatures of -30 to +25°F or -34 to -4°C), depending on your species. Zones 9 through 11 (17 to 25°F, -7 to -4°C) are typically safe even if you do not know your exact yucca species. If you live in a lower or higher zone, it's best to consult an experienced gardener or garden nursery employee to identify your yucca species and find out what zones it will thrive in.

Seed Planting Depth, Spacing and Procedure:

Place the seeds on a moist paper towel in a plastic container. Fill a container with approximately 1/4 inch (6 mm) of water. Place a paper towel on top of the water, then place your seeds on top of the paper towel. Keep the seeds moist at 65–75°F (18–24°C). Keep the container at room temperature, adding a small amount of water periodically to prevent the seeds from drying out and going dormant again.
Some of the seeds should eventually sprout, but this can take anywhere from one month to a full year. Once the seeds have opened up and begun to sprout, prepare individual, small pots with a mixture of equal parts sand and compost. If these materials are not available, use any well-draining soil mixture, typically with 30% or more sand or small gravel.

Plant the sprouted seeds, sprouting side up, 1/2 inch (1.25 cm) under the soil's surface. Cover it with soil and water the soil thoroughly.
Keep the sprouts in indirect sunlight and water occasionally. Let the first thorough watering almost dry out, then water regularly to keep the soil damp, but not soaked. You should see the sprouts emerge from the soil within a week.

For a quicker process, take a cutting from an existing adult yucca plant. After a couple years of growth or more, yucca plants may produce offshoots near the base that grow on their own stem. During the dormant colder season, select a stem with dark brown bark, not a young, cream-colored stem. Cut a section off of this stem. The length and thickness of the cutting do not matter much. A cutting 3–4 in. (7.5–10 cm) long should be sufficient.
Strip the lower leaves from the stem. Use a clean knife or scissors to remove the leaves nearest the base, leaving the leaves on the top. With fewer leaves, the cutting will go through less severe moisture changes, which increases the odds of it surviving the transplant until its roots can grow. Place the cutting in a cool, shaded area. This dries the plant out slightly to encourage root growth for seeking moisture. After 4–7 days, the cutting should be ready to plant.

Select a pot with drainage holes. Fill it with a cactus or yucca potting mix, or make your own quickly draining soil. Two parts seed-starting mix and one part sand will provide nutrients for the young plant without keeping it too wet. Push the stem far enough into the soil to keep it steady and upright. Often, you'll need to use a gentle rope or other soft line material to anchor the stem upright to another object.

Keep indoors at least two years, transferring to larger pots successively. The yucca plant may not be sturdy enough to thrive outdoors for at least two or three years. Keep near a sunny window, but not in direct sunlight while roots and leaves are still developing. Transplant the yuccas to a larger pot if its roots begin to wrap around the outside of its current pot. Once the yucca plant is two or three years old, you may plant it outside in the springtime.

When transplanting, be careful to dig deep enough to expose its entire taproot. This central, long root can be quite long in some yucca species.
To plant potted yucca outdoors - Gently pry the yucca out of its pot. Turn the pot on its side. Grab the yucca at the base of the stem and slowly "wiggle" it out, soil, roots, and all. Place the yucca into the newly dug hole. Fill the rest of the hole with your soil mix and pack the soil around the base of the stem to hold the plant in place. The roots should not show above ground. Top the soil with 2 inches (5 cm) of granite chippings. The chippings keep the root dry at the neck by preventing water from splashing onto it accidentally

Crop Maintenance

Some yucca grow in a rosette shape, and produce a long, central flower stalk. After it dies, this stalk should be cut back all the way to the base to prevent rot. Other yucca varieties are tall and tree-like. These may be pruned to direct growth, but always wear gloves and safety goggles, as yucca can send sharp splinters flying when cut In either type, cut off dead or withered leaves from the base of the plant whenever you see them.

If the Yucca grows too thick and dense after a few years, you can take a shoot from it to plant elsewhere. Choose an offshoot you would like to remove, dig a perimeter around it, and lift the shoot from below with a shovel. You can cut any roots to the mother plant. Transplant this shoot to a new sunny area. This is best done during the dormant season.

Yucca plants can be damaged if exposed directly to frost. Spreading a thick layer of mulch can go a long way in keeping the plant warm and dry. However, keep mulch away from the lowest leaves to prevent rot.

Moisture Requirements & Solutions: Many yucca plants can get by without any supplementary watering, relying solely on rainwater to survive. Once foliage starts to develop in the warm months, however, you can water it weekly, giving the plant just enough water to slightly moisten the soil without making it wet to the touch.

Reduce the frequency of watering if your yucca plant develops brown tips with yellow rings around them. This is a sign of over-watering.

Weeding Needs & Solutions: Once established, Yucca will out compete most weeds.

Feeding Needs/Optimal Natural Fertilizers: Some recommend only fertilizing yucca once a year. This is because yucca can survive well in areas with low nutrients. Yucca likes potassium in the summer when it is growing.

Pests, Diseases & Solutions: Not many pests are drawn to yucca, but snails and slugs will attack new growth. Use slug traps to get rid of them. Small, green aphids can be washed off with soapy water.

Rust and mildew are the most common diseases. Food grade hydrogen peroxide, also known as oxygen bleach helps to cure mildew and fungus with out harming the plant or using toxic chemical fungicides. 12 tablespoons of 3 percent hydrogen peroxide mixed with a gallon of water and sprayed on the foliage is recommended. Repeated spraying for several days usually solves the problem and perks up the plant.

Notes:

The Joshua Tree of Southwestern US belongs to the genius Yucca.
Banana yucca (Yucca baccata) – Banana yucca is a Southwestern native plant that needs very little water and no maintenance. The spiky leaves can reach heights of 2 to 3 feet (61-91 cm.). It can take several years for a banana yucca to bloom, and it often dies soon after the flowers fade. Soapweed yucca (Y. glauca) – This is another Southwestern type. Soapweed yucca produces 3 to 4 foot (1 m.) flower spikes, loaded with large white flowers. It thrives when left to its own devices in a sunny location. Beargrass yucca (Y. smalliana) – The leaves of this Southeastern native are softer than those of most yuccas, so they are safe to plant around people. Beargrass yucca is spectacular when in bloom and flowers produce a strong fragrance in the evening. Spanish Bayonet (Y. aloifolia) – Keep this Southeastern yucca away from walkways and places where children play. Spanish bayonet yucca produces three stems of varying heights, each filled with densely packed, rigid, sharply pointed spikes. It's easy to see where this plant got its name. Expect dense flower clusters up to 2 feet (61 cm.) long in summer. The Spanish dagger (Y. gloriosa) is a closely related and equally dangerous plant. Adam's Needle (Y. filamentosa) – The 2 1/2 foot (76 cm.) long, pointed leaves of this Southeastern native arise directly from the ground. The drama begins when the plant sends up a 6 foot (2 m.) flower stalk that holds an abundance of pleasantly fragrant, bell-shaped flowers. Like the Spanish bayonet, Adam's Needle shouldn't be planted in areas where it may come in contact with people.

Yucca plants have a number of uses depending on the types you have. Yucca plants are not only grown outdoors in the landscape but they make lovely additions in the home when grown as houseplants. Several types of yucca plants have edible flowers and fruit, including the banana yucca and soapweed yucca. Yucca roots and leaves contain steroidal saponins, an anti-inflammatory agent used to relieve arthritis symptoms. It is also thought to purify and cleanse the blood, kidneys, and heart. Always consult a healthcare practitioner before preparing your own herbal remedies. Soapweed yucca is used to make shampoo and soap, and the leaves are woven into baskets. Historically, yucca was used primarily for its fiber, which was woven into fabric and twisted into rope.

Making your own yucca shampoo is easy. It takes one medium sized plant to make enough for 12 shampoos. Dig up the plant, rinse off the roots, and cut off the top. Peel the roots and cut them into pieces about the size of ice cubes. Beat the pieces with a hammer or process them with a blender. When it turns from white to amber, the shampoo is ready to use.