



Inherited Seeds[®]
Obsessed With Heirlooms!!



**GROW YOUR OWN
VEGETABLE PLANTS**



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Obsessed With Heirlooms!!



When the flowers bloom, bees come uninvited!
-Ramakrishna

About Us:

Inherited seeds® was established in 2015 with an intent to inspire others to grow their own vegetable garden, live healthier lives, and have fun doing it!

We strive to preserve heirloom variety strains that our forefathers left us to remind the importance of true taste and healthy living. Such a great inheritance, we attempt to educate our current and future generations to understand the importance of heirlooms and help grow your own food more efficiently. We have over 150 variety strains well preserved till date with a goal to reach over 1000 strains in the years to come.

We are not commercial growers but a tiny farmer and you might be pleasantly surprised to know that all our seed packets are hand filled to ensure you receive the highest quality seeds that can be preserved. We do not use any automated machines and do our best to maintain consistency in our packaging.

We promise to never knowingly offer to sell genetically modified seeds. All our seeds are harvested from organically grown open pollinated plants. Our seeds are sold fresh, untreated and viable to a percentage of at least 75%. We do our best to maintain a positive buying experience with each and every customer.

We are a small family owned located in Illinois and your satisfaction is our #1 priority! If you are not satisfied, have any questions with the product or about gardening, please reach us out directly and let us know so we can make it right by you and assist you to the best of our ability.

You will find the "Grow your Own Vegetable Plants" guide handy providing you with the instructions on growing, troubleshooting and harvesting vegetable in your very own home garden. Whether new to gardening or a seasoned gardener we believe this guide provides tips for maintaining your best vegetable garden.

Sincerely,

Team Inherited seeds

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Contents

Gardening Basics	5
Know your Seed: Heirloom Vs Open-Pollinated Vs Hybrids Vs GMOs	5
Introduction to Open Pollination	5
Introduction to Heirlooms:	5
Introduction to Hybrids:	6
Introduction to GMO seeds	6
Plants Lifecycle	7
Site Selection.....	7
Types of Soil	8
Improving Soil with Organic Matter.....	9
The Importance Top Six Inches of Soil in Your Garden Bed.....	9
Companion Planting.....	10
Companion Planting Chart.....	11
Harvesting	12
Amaranth	14
Anise.....	15
Artichoke	16
Arugula	17
Basil	18
Beans	19
Beets	20
Bell Peppers.....	21
Borage	22
Broccoli.....	23
Brussels sprouts	24
Cabbage	25
Carrot.....	26
Carom.....	27
Catnip.....	28
Cauliflower	29
Celery	30



Chives31

Cilantro32

Collards.....33

Cress.....34

Cucumber.....35

Dill36

Echinacea.....37

Eggplant38

Fennel39

Fenugreek40

Gourds41

Ash Gourd42

Bitter Gourd / Melon43

Bottle Gourd.....44

Gongura / Sorrel45

Kale46

Kohlrabi.....47

Lavender48

Lettuce.....49

Marjoram50

Moringa51

Okra52

Orach.....53

Oregano54

Peppers (HOT)55

Purslane56

Radish57

Radicchio58

Spinach (Red / Green Malabar)59

Thyme60

Spinach.....61

Tomato.....62

Turnip.....63



Gardening Basics

Know your Seed: Heirloom Vs Open-Pollinated Vs Hybrids Vs GMOs

In this Article let us discuss about:

- 1: The difference between Heirlooms, Open-Pollinated, Hybrids that everyone needs to know
- 2: Buying organic vegetables from store mean it is Heirloom? Can I use these seeds for growing?
- 3: GMO Seeds

So many varieties are available in the market, what they really mean? Which variety do I need to choose for my garden?? Or what best fits my lifestyle???

These are very common questions we encounter from beginners and experienced gardeners alike, let's give a try to walk you through this situation and guide you to make your best judgment.

1. Let's start with the basic step:

The main difference between Heirloom, Open-Pollinated, and Hybrids: Techniques used to breed parent plant and how their parent characteristics (genes) are carried through offspring plant.

Introduction to Open Pollination

Open Pollination means how plants reproduce naturally and without any human intervention. Bees, insects and birds distribute pollen to plants of the same species to breed naturally. The "true type" offspring represent the characteristics and traits of parent plants. Don't be surprised, open pollination sometimes creates a new variety of a species when two species is close enough to breed are kept in the close proximity.

Introduction to Heirlooms:

Heirloom varieties come from open-pollination whose heredities / genes have been preserved over generations through seed saving. Heirloom plants are the only ones that breed true, exhibiting the same characteristics and traits of parent plant passed on from generation to generation. Gardeners and enthusiasts usually select the healthiest and best of the best growing plant in that year's crop, collect seeds to regrow for the next season. Heirlooms are gifted by Mother Nature and through open-pollination. Check our heirloom collections.

The [Heirlooms](#) are usually dated (pre-1800s); the selection characteristics include fruit size, overall color, flavor, and resistance to diseases.

Is heirloom plant an organic or non-organic? In most cases, heirloom plants are organic since they are generally used by small-scale gardeners who do not use pesticide or other harmful chemicals.

[Check our heirloom collections.](#)



Why should I grow Heirlooms?

If hybrid plants grow with useful traits, why should I grow heirlooms instead? First and foremost, heirlooms are generally known to produce better taste and flavor! Heirlooms are healthier and more nutritious compared to hybrids. Finally, they are economical over the long haul.

Heirloom plants may require a bit more care than hybrids but the effort you put in will be worth it! One thing to keep in mind, you are playing an important role in preserving the genetic diversity of plants by growing heirloom seeds. [Check our heirloom collections.](#)

Introduction to Hybrids:

Hybrids are produced by crossing two different species within the same genus. The resulting offspring exhibit characteristics of both parents. The offspring plants “do not” reproduce true-type or identical traits as the parent plant.

Besides natural cross-pollination, hybrids are created by manually removing pollen from one plant and fertilizing to another, and then saving the resulting seeds. They are usually created in a controlled environment to produce desired results. Again, it is “not guaranteed” that the offspring of hybrid plants produces identical traits as the parent plant.

2: Buying organic vegetables from store mean it is Heirloom? Can I use these seeds for growing?

Let us throw some light on this topic.

Buying organic means how the “plant is grown and soil is treated (or amended)” and has nothing to do with the variety of fruit or vegetable that you grow.

Plants need nutrients to grow and, in most cases, need more nutrients. Organic means amending soil with natural ingredients (without chemicals, growth hormones, etc.). Usually store-bought fruits and vegetables are Hybrids unless specifically mentioned! Stores need to keep up with their supply demand and heirlooms cannot justify it. Like I mentioned earlier, ***Hybrids are kitchen's delight but Heirlooms are gardener's delight!*** [Check our heirloom collections.](#)

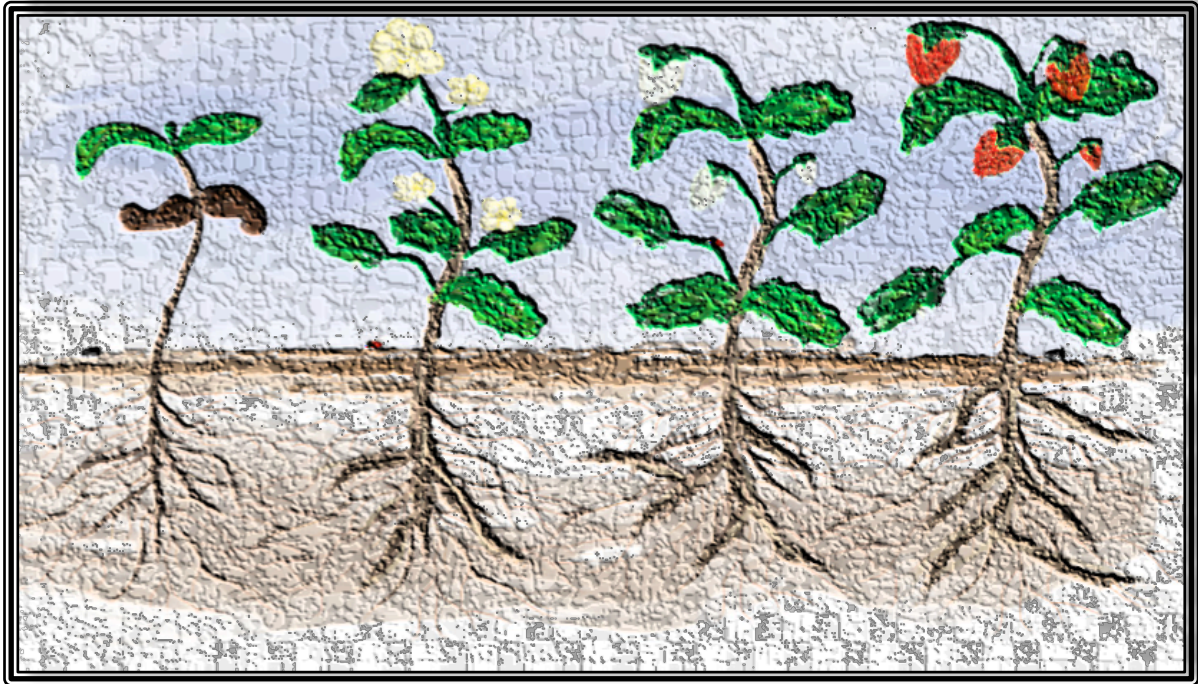
Introduction to GMO seeds

A plant produced by genetically modifying its DNA under laboratory setting which can never be achieved in the natural environment. They are created to quickly adapt to the extreme environmental conditions and produce enormous yields at a shorter cycle.

Now you know the difference between heirlooms, open-pollinated, hybrids and GMO plants. You can make your best cognizant decision for your own food. Please [contact us](#) if you have any questions, or you want to share your thoughts about growing techniques. We'd love to hear from you!



Plants Lifecycle



Annuals - Plants go through a full life cycle over the course of one season, during this season the seed grows into a plant and produces seed then die off. Annual plants growth characteristics vary depending on the region and climate.

Biennial – As the name suggests, plants falling in this category requires two years to complete their life cycle. Biennials require one season of dormancy period (usually the winter) to preserve energy for producing fruits or seed in the second season to complete their life cycle. Usually the first year, the plants produce a root system, stems, and leaves. The second year is when the plant flowers to produce fruits or seeding.

Perennial – Plants under this category live for 5+ years (depending on the plant life term). During cold season perennials goes to dormancy and the top foliage will die while the root system is still active. New leaves start to re-grow in spring from the left behind stem / branches.

Site Selection

A good garden site is essential to produce optimum yield from a given plant. Poor sites not only produce low yields, but may also be extremely difficult to grow a garden on at all.

Choose a garden site with deep, medium-textured, well-drained, nearly level soil. Fine-textured, clay soils stay wet late into the spring, are difficult to work and tend to crust badly. Sandy soils dry



out very quickly and require frequent nutrient applications. Excessive slopes tend to erode. A slight slope, however, is desirable to prevent cool air from collecting and forming a frost pocket.

Most garden vegetables require six hours of sunlight or more per day to produce well. The more the garden is shaded, the slower the vegetables will grow and the lower their yields will be. Trees and large shrubs not only shade gardens, but also use nutrients and water needed for proper vegetable growth.

A site near the house makes it more convenient to care for the garden and to harvest vegetables. Water is available for transplanting and irrigation. Children or animals in the garden can be observed, and the garden may be protected from these and other potential problems.

Types of Soil

Proper soil conditions are essential for all stages of crop and plant development. Thus, an understanding of soil and how to manage it is the key to a productive garden and landscape. Although it is possible to grow most plants in most soils, a grower benefits from learning about the interrelationship of a plant and the soil in which it is rooted.

The plants you choose to grow will have varying needs and will respond differently to particular types of soil. In addition, the soil may vary in depth, texture, and quality, even from one location to another on the same property. For example, a soil that differs from the native soil may have been brought to a building site for grading and backfilling around the new foundation. Thus, understanding the elements that make up each soil type will help you to know what to add to your soil to accommodate each plant.

Let's briefly review the soil types and their properties:

Clay Soil: The soil is lumpy and sticky under wet conditions. When dry, soil is rocky and hard. Poor drainage and low oxygen levels. Lack of drainage usually needs to be remedied, using sand and/or small pebbles. Suitable for perennial shrubs, early vegetable crops, aster and bergamot flower plants.

Silty Soil: A soft and fluffy texture that holds moisture very well. Nutrient content is plentiful as well. Less than adequate drainage, but otherwise a healthy soil. Manure and organic biomass can help with drainage. Suitable for most vegetable and fruit crops, grasses, and trees.

Sandy Soil: A gritty, sandy texture that dries out fast and drains quickly. Holds fewer nutrients than other soils. Requires soil amendments to bolster nutrient content. Suitable for vegetable root crops, such as carrot, parsnip, beet, pepper, corn, squash, and salad crops.

Loamy Soil: The ideal garden soil texture with an even mixture of sand silt, and clay. A fine texture full of nutrients with good drainage. Requires nutrient replenishing after each grow season. Suitable for most garden crops.



Improving Soil with Organic Matter

Organic matter (or humus), is a valuable part of soil. It is the end product of decaying organic matter and the most effective material for improving tilth.

Organic matter may be added to soils in the form of manure, compost, saw dust, peat moss, etc. The finer the organic materials the quicker to decomposed and provides nutrients to the plant. Coarse particles such as shredded tree bark, wood chips takes good couple of years to breakdown while serving as mulch around then plant.

Organic materials used alone seldom supply a balanced source of plant nutrients. Most are low in phosphorus, and decaying straw, leaves, grass clippings, and sawdust can temporarily deplete the soil of available nitrogen. Reduced amounts of available nitrogen can damage some short-season vegetables and flowers.

Regular applications of organic matter and complete fertilizer are essential for garden soils used each year. For ornamental plants and turf areas, incorporating adequate organic matter is even more critical since there is only one opportunity to work it into the soil before planting or seeding. Once permanent crops are established, it is difficult to incorporate organic matter without injuring plant roots.

The Importance Top Six Inches of Soil in Your Garden Bed

It's the beginning of summer! Everyone gets excited to shop at Home Depot, Lowes, Walmart and Menards for garden soil, compost, etc., etc. When temperature favors the first thing we do is dump compost and start tilling the garden bed, STOP!

Know the importance of soil structure before you till your garden bed.

While it take several years to build a good soil structure it takes few seconds to destroy it!

The soil structure consists of several layers meant for each microbial thriving. The top six inches of a garden soil is Aerobic and contains at least 90% of aerobic colonies of microbial life. This layer is extremely important since it holds 100s of different species of bacteria, Fungi, yeasts, protozoa, nematodes, etc. Aerobic mean those need air to thrive. The bacteria that breaks down organic matter at the top of the soil bed need oxygen. Humus (life of the soil), as the end-line result of decayed organic matter is concentrated in the top three to six inches of soil. However it is quite opposite in the subsoil i.e., 6 inches below the top layer. Sub soil is called Anaerobic layer where air free life thrives. Anaerobic layer is a habitat for micro algae with very minimal activity. The bacteria and other microbes go inactive or often die when exposed to this layer.



The reasons gardeners may till are:

1. To get organic matter incorporated into the soil of a garden bed.
2. To make soil loose and fluffy
3. To improve water drainage

Remember, excessive / improper tilling puts aerobic life in airless chambers, and moves anaerobic life up to where there is air resulting in total loss of microbial life. You are actually doing more damage than better.

Whether to till, not to till, how much to till has been a debate for many years with no concrete result. Based on my experience I found no tilling or minimal tilling up to six inches is a best way. This is one of the main reasons to better use raised beds.

Always be cognizant of your garden bed, understand soil biology, chemical and biological relations of microbes that affect the plant and soil life. If you are using raised beds then tilling is absolutely unnecessary. You can just add some soil amendments and gently mix it in the top 3 inches. Always follows best practice. Reach us if you would like to learn more about the best practices. We will try our best to educate you with the small amount of knowledge we have.

Companion Planting

Companion planting / intercropping is an ancient belief that some plants may be mutually beneficial for each other. Planting of different crops within proximity for many reasons, including pollination, pest control, build habitat for beneficial insects and bacteria, maximize garden space, etc. A very good example for companion planting is Marigold, commonly used as intercrop in all gardens. Marigold emit a chemical known as limonene into soil which serves as a natural pesticide. In essence, companion planting aims to create diversity in the garden while fighting against disease and pests.

Advantages of Companion Planting

- 1: Maximize usage space in your garden, they look beautiful.
- 2: Provide support (like stake / trellis) to other plants that require a physical support
- 3: Provide shelter to other plants from direct sunlight and wind
- 4: Attract beneficial insects to aid in pollination
- 5: Soil conditioning, legume family crops draw nitrogen from the atmosphere and transfer it to the ground which serves as a natural fertilizer to other plants within proximity.
- 6: Certain plants act as natural insect repellents to drive away undesired pests.



Companion Planting Chart

Vegetable	Companions	Incompatible
Asparagus	Calendula, Petunias, Tomatoes	
Basil	Lettuce, Peppers, Purslane, Tomatoes	Cucumber
Beans	Beets, Corn, Lovage, Rosemary, Squash, Strawberries	Chives, Fennel, Garlic, Leeks, Onion, Shallot
Beets	Brassicas, beans, Garlic, Lettuce, Onion	Pole beans
Broccoli	Brassicas, Oregano	Strawberry, Tomato
Cabbage	Garlic, Sage	Dill, Pole Beans, Strawberry, Tomato
Carrot	Cabbage, Chives, Leeks, Lettuce, Onions, Peas, Radish, Rosemary, Sage, Tomatoes	Dill
Cauliflower	Celery, Onion, Potato	Strawberry, Tomato
Celery	Bush Beans, Broccoli, Cauliflower, Leeks, Onion, Cabbage, Tomato	
Chard	Cabbage, Lettuce, Onion	Pole Beans
Cucumber	Beans, Borage, Dill, Lettuce, Oregano, Radish, Sunflowers	Basil, Potato
Dill	Cabbage, Lettuce, Onion	Carrot, Cucumber, Tomato
Eggplant	Beans, Marigold, Potato, Thyme	
Fennel		Beans, Peppers
Garlic	Beets, Cabbage, Tomato	Beans, Peas
Lettuce	Basil, Beets, Cabbage, Carrots, Chives, Onion, Radish, Spinach, Strawberry	Pole Beans, Tomato
Leeks	Carrot, Celery, Cucumber, Onion	Bush Beans, Pole Beans
Lovage	Bush Beans, Pole Beans	
Onion	Beets, Cabbage, Carrot, Chard, Lettuce, Strawberry, Tomatoes	Beans, Peas, Sage
Oregano	Pumpkin	Cucumber
Peas	Beans, Carrot, Chives, Corn, Cucumber, Mint, Radish, Turnip	Chives, Garlic, Potato, Onion
Peppers	Basil, Carrots, Marjoram, Onion, Oregano, Tomatoes	Fennel
Radish	Carrot, Cucumber, Peas, Lettuce, Pole Beans	All Pole Plants
Tomatoes	Asparagus, Basil, Borage, Carrot, Celery, Chives, Cucumber, Garlic, Bee Balm, Peppers	
Turnip	Peas	Potato



Harvesting

Understanding harvesting is as important as growing vegetable plants. Ultimately, we've been patiently waiting for "the day" to reap our efforts nurturing the plants grown throughout the season. Many vegetables must be kept harvested if the plants in order to maintain optimum production and yield. Allowing over ripened fruits shall result in seeding and significantly reduce future yields. The table below gives us an idea for harvesting. (Ref: PB901-5M-4/05)

Asparagus	When spears are 6 to 9 inches tall.
Beans	lima When pods are full but seeds are green.
Beans	snap While pods snap easily and are still smooth.
Beets	1 - to 2.-inch beets have highest quality.
Broccoli	Before flowers show yellow color.
Cabbage	When heads become firm and heavy.
Cantaloupe	When melons can be lifted and the vine slips without pressure.
Carrot	Any time roots are firm and brittle.
Cauliflower	Before curd loosens and discolors.
Collard	When leaves are large but still green and firm.
Corn	When kernel juice is milky, silk begins to dry and ears are full to end.
Cucumber	When seeds are small, flesh is firm and color is green.
Eggplant	Before color begins to dull.
Kale	When leaves are large but before they yellow.
Kohlrabi	When 2 inches or more in diameter but still tender.
Lettuce	When tender and mild flavored. Before bolting.
Mustard	When leaves are crisp and tender.
Okra	When pods are 2 to 3 inches long.
Onion	For green onions: when bulb is 3.8 to 1 inch in diameter.
For	storing: after the tops have died down.
Parsnip	After cool weather has improved quality.
Peas	English After pods have filled but before they turn yellow.
Peas	snap After pods form but before yellowing.
Pepper	After pods reach full size.
Potato	After vines have died and skin has set (for storage).
Potato,	sweet After reaching desired size but before cool fall rains.
Pumpkin	After they are full grown and mature colored. Before frost.
Radish	When firm and brilliantly colored.
Rutabaga	Before becoming tough.
Spinach	When leaves are crisp and dark green.
Squash	summer When large end is 1-2. inches in diameter and skin is still tender.
Squash	winter When rind is not easily scratched by fingernail.
Swiss	chard When leaves are crisp, tender and still green.
Tomato	When fully colored but still firm.
Turnip	greens While leaves are green and crisp.
Turnip	roots After 2 inches in diameter but while still tender.
Watermelon	When tendrils adjacent to fruit die and rind on ground becomes yellow



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Growing Vegetables





Amaranth

DAYS TO MATURITY: 60-75	GERMINATION DAYS: 2-5	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70°F	PLANT SPACING: 10-12"	SOIL PH: 6.0 – 7.5	LIGHT PREFERENCE: FULL SUN

Planting

- You can start them inside 6-8 weeks before the last frost or direct seed outside once the danger of frost has passed.
- If you direct seed outdoors, wait for soil temps to reach 65°F. Amaranth seeds are small, so sprinkle them onto prepared soil and top with a thin layer of earth. Indoors, plant seeds one-fourth of an inch deep and keep moist.
- **Germination Time:** Seeds aren't fussy to start and will germinate in under a week in temperatures between 65-80°F.
- **Soil & Sun Requirements:** Amaranth is flexible when it comes to soil but prefers well-drained earth with a pH in the range of 6.0 - 7.5, so spread some cottonseed meal or coffee grounds in the row where you are going to plant. If you can, it's best to do this in the fall before spring planting. That way the cotton seed breaks down over the winter. Growing amaranth plants need full sun with at least 6 hours per day.
- **Transplanting Young Plants to The Garden:** Begin to harden off plants about 10 days before transplanting outdoors. Plant out only after the last frost date has passed.

Care

- **Fertilizing:** Amaranth likes nitrogen, phosphorus, and potassium, so a garden with lots of compost manure will make them happy.
- **Watering:** Amaranth is drought tolerant. However, to produce nice leaves, make sure to keep the soil moist at the root level. Ideally, amaranth needs a few inches of water once or twice a week.
- **Weeding:** It is important to keep up with weeding as young plants are easily smothered by encroaching weeds. Amaranth has shallow roots so take care when you're hoeing or cultivating. It's best to cultivate by hand when working close to the plant's stem.

Pests / Diseases

- **Root-Gall Nematodes:** Amaranth is susceptible to root gall nematodes. These microscopic worm-shaped invertebrates are parasites that eat your plant's roots. As they munch down on your plant, they excrete an enzyme which causes swelling. This is the bump or gall you may see on plant roots. You can buy organic soil soaks that contain saponins to kill the nematodes.
- **Aphids:** are tiny, (usually) wingless pests that feed on plant juices. You'll often see curling, stunted leaves that may be covered in a sticky substance. Spray them off with a strong blast of water, or spritz plants with a concoction made out of water, dish soap and cayenne pepper. You can also plant mustard and nasturtium as trap plants near amaranth.
- **Leafminers:** restrict plant growth and yield. You can spot them by the squiggly lines they leave behind in plant leaves. If you catch this early, you can regularly squeeze the tunnels in the leaves to crush the bugs. You can also use sticky traps or spray plants with neem oil.
- **Mites:** Control this arachnid by pruning infested leaves and blasting plants with a strong spray of water. You can also spray plants with neem oil.
- **Snails & Cutworms:** Set out traps or grit to control snails. Cutworms nibble on your plants at the base, effectively cutting them. Control them by picking them off or sprinkling diatomaceous around plants. Prevent them by tilling your garden in the fall.
- **Flea Beetles:** Flea beetle infestations can kill an entire crop, so keep an eye out for these tiny jumping pests. Be sure to till your garden in the fall to prevent these. Use sticky traps and diatomaceous earth to control. Trap crops like mustard and radish will keep them away from your amaranth.



Anise

DAYS TO MATURITY: 120+	GERMINATION DAYS: 7-14	HARDINESS ZONE: 5-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70°F	PLANT SPACING: 10-12"	SOIL PH: 6.0 – 6.7	LIGHT PREFERENCE: FULL SUN

Anise is a small herb with lacy leaves. It's a member of the parsley family. Its leaves and seed have a sweet, licorice-like flavor. Both leaves and seeds can be used to flavor soups, salads, and sausage. Anise is frost tender; time the planting of anise so freezing weather is past when seeds germinate.

Planting

Anise is a low spreading bright green bushy plant that grows 18 to 24 inches tall and almost as wide. It resembles Queen Anne's lace or wild carrots. The first growth is a clump of leaves with rounded foliage followed by stalks with heart shaped leaflets. Later elongated flowering stems bear narrow, feathery leaves.

- **Location:** Grow anise in full sun. Plant anise in a sheltered location out of the wind.
- **Soil Prep:** Anise grows best in well-drained soil rich in organic matter; however, anise will grow in poor soil. Anise prefers a soil pH of 6.0 to 6.7. Anise tolerates dry conditions but will not tolerate very wet soil.
- **Seed starting indoors:** Start anise from seed indoors in late winter about 8 weeks before transplanting seedlings outdoors. Sow seed in biodegradable pots that can be set out in the garden after the last frost in spring. Keep seeds at 70°F for optimal germination. Anise forms a tap root which does not like transplanting or moving.
- **Transplanting:** Because anise has a tap root it does not transplant well after the roots become established. Set seedlings in the garden in spring as soon as the soil can be worked; protect young plants with floating row covers or a plastic tunnel until after the last frost.
- **Outdoor planting time:** Sow anise in the garden as early as two weeks before the average last frost date in spring. Anise requires a long, frost-free growing season of about 120 days.
- **Growing in containers:** Anise grows easily in containers. Select a container at least 8 inches deep and wide.

Care

- **Watering:** Water anise when the ground starts to dry out. Do not overwater anise.
- **Feeding:** Side dress plants with aged compost or organic all-purpose fertilizer at midseason.
- **Mulching:** Keep planting beds free of weeds. Weeds compete for soil moisture and nutrients.
- **Staking:** Anise stems are weak. Stake plants that become leggy; also stake plants in windy gardens.

Pests / Diseases

Anise has no serious pest & disease problems. Anise oil is said to repel insects.

Harvest

- **When to harvest:** Snip leaves for fresh use. Leaves can be dried on a screen in a cool, dry, dark, airy place. Seeds require more than 100 frost-free days to reach harvest. Harvest seeds from late summer to early autumn starting about two to three weeks after flowering when seeds have turned brown and fall easily from the head.
- **How to harvest seeds:** Cut the flower stems and seed heads and hang the stalks upside down in a warm, dry, shady place. Place a paper bag around the seed heads so seeds fall into the bag.



Artichoke

DAYS TO MATURITY: 60-75	GERMINATION DAYS: 2-5	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70°F	PLANT SPACING: 10-12"	SOIL PH: 6.0 – 7.5	LIGHT PREFERENCE: FULL SUN

Planting

- Artichokes can be started from seeds, from rooted shoots taken from growing plants, or from dormant roots.

If starting from seeds:

- Start seeds indoors in late winter or early spring, about 8-10 weeks before planting outside.
- Soak the seeds in warm water before sowing in trays or pots.
- Place the trays or pots in a warm spot with bright light.
- Transplant seedlings in the garden after the last spring frost.
- Choose a spot in the garden that gets full sun.
- Artichokes are heavy feeders, add compost or aged manure into the soil before planting.
- Space each plant about three feet apart in rows.
- Water deeply at the time of planting.

Dormant roots:

- Plant dormant roots about six inches deep. The tops should be above ground level.
- Plant in the fall in frost-free regions. In cooler climates, plant roots in spring after the last frost.

Care

- Mulch around the plants to keep soil moist. Artichokes need lots of water to form edible buds.
- Apply a balanced organic fertilizer once every month during the growing season.
- Remove mulch when the plants begin to bud and side dress around the plants with compost.
- Artichoke plants will go dormant in hot weather. When temperatures cool off in late summer and fall, the plants will start growing again and you may get a second harvest.
- In cooler regions, after the fall harvest, cut the plants back to about 6 inches and cover the crowns of the plant with leaves.

Pests / Diseases

- **Bacterial crown rot:** The plant stops growing and the leaves will wilt. The crown will slowly rot.
- **Fungal gray mold:** The crown of the plant becomes slimy and foul smelling and a white to gray mold will appear. This often occurs in humid conditions.
- Armyworms, aphids, flea beetles, loopers, spider mites, and slugs.

Harvest

- Harvest Artichoke buds when they have swelled but are still closed tight.
- Use a sharp knife to cut across the stem about 1 to 2 inches below the bud.



Arugula

DAYS TO MATURITY: 40-45	GERMINATION DAYS: 7 - 10	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: 45- 65 °F	PLANT SPACING: 6 - 12"	SOIL PH: 6.0 – 7.5	LIGHT PREFERENCE: FULL SUN

Arugula is an easy-growing leaf herb to include in your herb garden. It is used as lettuce in sandwiches, and mixed in a salad with other greens. Arugula thrives in cooler temperatures. Arugula also grows well in containers filled with well-draining soil.

Planting

- Arugula prefers humus-rich, well-drained soil, but will tolerate a wide variety of conditions.
- Choose a location where it gets full sun or part shade as soon as the soil can be worked in spring.
- Recommended to directly plant outdoors. Plant about 1/4-inch-deep and 10 inches apart.
- Seeds germinate in a few days.
- Sow seeds every 2 to 3 weeks for a continuous harvest throughout summer season.

Care

- Keep soil evenly moist.
- Thin seedlings to about 6 inches apart, using removed seedlings for salads, they taste great!
- To reduce heat stress, provide some shade for warm-season plantings

Pests / Diseases

- Flea beetles
- Cabbage worms
- Downy mildew

Harvest

- The leaves taste best when young.
- Harvest leaves when they are about 2-3 inches long.
- Pull up the whole plants or cut individual leaves.
- The white flowers are edible.



Basil

DAYS TO MATURITY: 60-90	GERMINATION DAYS: 7 - 14	HARDINESS ZONE: 4-10	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 12 - 18"	SOIL PH: 5.5 – 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Planting

- Kickstart the seeds indoors 6 weeks before the last spring frost.
- Basil prefers warmer temperature, wait until the soil has warmed to at least 50°F (daytime and night time temperatures). Basil grows best when the outside temperature reaches 70°F.
- Basil prefers full sun & grows best in a location that gets 6 - 8 hrs of full sun daily. They do well in partial sun too.
- Soil should be moist but well-drained. Basil grows well in containers or raised beds, as these allow for better drainage.
- Companion plants: Tomatoes make great companion for basil plants in the garden.

Care

- Basil plants like moisture, mulching helps cool the plant (during hot days) and ensure even moisture.
- Pruning helps branches multiply and more harvest. Simply trim the tips after every six sets of leaves
- Every time a branch has six to eight leaves, repeat pruning the branches back to their first set of leaves.

Pests / Diseases

- **Root Knot Nematode:** Galls on roots which can be up to 1 inch in diameter but are usually smaller; reduction in plant vigor; yellowing plants which wilt in hot weather.

Control / Prevention: Plant resistant varieties if nematodes are known to be present in the soil; check roots of plants mid-season or sooner if symptoms indicate nematodes; solarizing soil can reduce nematode populations in the soil.

- **Aphids:** Yellow leaves; distorted flowers/fruit; sticky "honeydew"; sooty, black mold that forms on honeydew; large presence of ants on plants.

Control / Prevention: Grow companion plants to either repel aphids away; knock aphids off plants with water spray, apply insecticidal soap; put banana or orange peel around plants; wipe leaves with a 1-2% solution of liquid dish soap, water every 2-3 days for 2 weeks.

- **Leafminers:** thin, white, winding trails on leaves; heavy mining can result in white blotches on leaves and leaves dropping from the plant prematurely; early infestation can cause fruit yield to be reduced.

Control / Prevention: Check transplants for signs of leafminer damage prior to planting; remove plants from soil immediately after harvest; only use insecticides when leafminer damage has been identified as unnecessary spraying will also reduce populations of their natural enemies.

- **Flea Beetles:** Numerous tiny holes in leaves.

Control / Prevention: Use row covers to physically block flea beetles; mulch heavily; add native plants to attract beneficial insect predators.

Harvest

- Start picking the leaves of basil when the plants reach about 8 inches tall.
- Leaves are most flavorful before sunrise, harvest early morning for the best taste. Pick the leaves regularly to encourage growth throughout the summer.



Beans

DAYS TO MATURITY: 60-90	GERMINATION DAYS: 7 - 14	HARDINESS ZONE: 4-10	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 12 - 18"	SOIL PH: 5.5 – 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Beans depending on their growing style fall under two categories:

- **Bush type** grow compactly typically growing to about two-feet tall and do not require extra support like trellis.
- **Pole type** as climbing vines that may reach about 12 to 15 feet tall. These types require a trellis or staking.

Planting

- It is recommended to directly sow seeds outdoors any time after the last spring frost date, when soils have warmed to at least 50°F. Planting too early in the season caused delay in germination and also could result in seed rot due to moist soil. Also few beans have fragile roots, they may not survive transplanting.
- Beans grows best in well-drain soil with normal fertility. Beans is a nitrogen fixing plant and don't need supplemental fertilizer. In case of poor soil you should amend with aged manure or compost prior to planting.
- Beans prefer a slightly acidic to neutral soil pH (6.0–7.0).
- Sow seeds 1 inch deep and 3 inches apart in rows 18 inches apart.
- Set up trellises for pole bean varieties prior to planting so the fragile roots are not disturbed during growth period and to avoid stress.
- Harvest usually lasts all summer, sow seeds every 2 weeks to properly time your harvests. Practice crop rotation to avoid unnecessary buildup of pests and diseases.

Care

- Mulching soil around plants to ensures even moisture retention. Do not pack mulch since Beans have delicate shallow roots.
- Water about 1-2 inches per week. If you do not keep beans well-watered, they will stop flowering. Water on sunny days so that foliage will not remain soaked, which could encourage disease.
- Fertilize minimally after heavy bloom and the set of pods. Avoid using high-nitrogen fertilizer, you will end up getting lush foliage and few beans. A side dressing of compost or composted manure halfway through the growing season is a good alternative.
- Pinch off the tops of pole bean vines when they reach the top of the support. This will force them to put energy into producing more pods instead.
- In high heat, use row covers over young plants; hot weather can cause blossoms to drop from plants, reducing harvest.

Pests / Diseases

Anthraxnose | Aphids | Cucumber Beetles | Cutworms | Japanese Beetles | Mexican Bean Beetles | Powdery Mildew
Mosaic Virus | Slugs / Snails | White Mold | White Flies



Beets

DAYS TO MATURITY: 60	GERMINATION DAYS: 7 - 14	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: WARM	PLANT SPACING: 10 - 12"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Planting

- It is recommended to sow beets directly in the garden so that you don't have to disturb their roots, though beets generally tolerate being transplanted while still young. Start sowing beets in early spring, as soon as the soil is workable.
- Successive plantings are possible as long as daytime temperatures don't exceed 75°F. Plant every 2 to 3 weeks until about mid-summer timeframe.
- Understand each wrinkle seed actually contains a cluster of about 2 to 4 seeds, so you will need to thin the young plants to 3 to 4 inches apart. **Tip:** When thinning, don't pull up the plants, as you may accidentally disturb the roots of the beets. Instead, just snip off the greens.
- Germination is quick when the soil temp is warmer (at least 50°F). **Tip:** Soak seeds for 24 hrs to speed up germination.
- Beets are not picky, they can be planted in a location which receives full sun / partial shade.
- Soil should be well prepare, free of rocks to allow develop the bulb properly.
- Caution: when fertilizing make sure the nitrogen is low. Excess nitrogen causes an abundance of leaves (greens) growth and left with small bulbs.

Care

- Thinning is necessary, as you may get more than one seedling out of each seed. When the tops are a 4 to 5 inches tall, thin seedlings to 3 to 4 inches apart. Pinch or cut off the leaves. Pulling them out of the ground may disturb the roots of nearby seedlings.
- Mulch and then water regularly with about 1 inch per week. Beets need to maintain plenty of moisture.
- Weed as needed but be gentle; beets have shallow roots that are easily disturbed.

Common Growing Problems

- **Seedlings fail to emerge:** Beet seed fail to germinate when the temperatures are high. Mulching keeps bed evenly moist and cooler to encourage seedlings emerge.
- **Collapsed seedlings with dark water-soaked stems as soon as emerge:** Also called Seeds Rot, this is a fungus that thrives in high humid very moist/soggy soil. Make sure soil is well drained.
- **Seedlings are eaten off as soon as they emerge:** Presence of cutworms, they chew stems, roots, and leaves. Keep the garden free of weeds.
- **Yellowish curled leaves:** Possibly shows the presence of Aphids, they are tiny, oval, and yellowish to greenish pear-shaped insects that colonize on the undersides of leaves. They leave behind sticky excrement called honeydew which can turn into a black sooty mold. Use insecticidal soap or neem oil to eliminate them.
- **Tiny shot-holes in leaves:** Flea beetles are tiny bronze or black beetle a sixteenth of an inch long. They eat small holes in the leaves of seedlings and small transplants. The larvae feed on roots of germinating plants. Spread diatomaceous earth around seedling.
- **Small irregular holes in the leaves.** Cabbage looper is a light green caterpillar with yellow stripes running down the back; it loops as it walks. Keep garden clean of debris where adult brownish night-flying moth can lay eggs. Cover plants with spun polyester to exclude moths. Pick loopers off by hand.
- **Partially eaten leaves; leaves webbed together:** Garden webworms are green with a light stripe about 3/4 inches long; the webworm is the larvae of a brownish yellow moth with gray markings. Clip off & destroy webbed leaves.



Bell Peppers

DAYS TO MATURITY: 75-90	GERMINATION DAYS: 14 - 21	HARDINESS ZONE: 3-10	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: WARM	PLANT SPACING: 10 - 12"	SOIL PH: 5.5 – 6.5	LIGHT PREFERENCE: FULL SUN

Planting

- Recommended to start seeds indoors 8-10 weeks before your last spring frost date rather than in the garden.
- The soil temperature must be at least 70°F for seed germination, so keep them in a warm area for best results. Use a heat pad under the seed tray, if necessary. Plant seeds about 1/4" deep.
- Bell Pepper plants require full sun to produce the largest and healthiest fruit, so pick a site that won't get shaded out by trees or other garden plants.
- Soil should be well-draining and rich in organic matter.
- A soil consistency somewhere between sandy and loamy will ensure that the soil drains well and warms quickly.
- Soil pH should be slightly on the acidic side, 5.5 to 6.5 ideally.
- A week before transplanting into the garden, add fertilizer / aged compost to your garden soil.
- Avoid planting peppers in places where you've recently grown other members of the nightshade family such as tomatoes, potatoes, or eggplants as this can expose peppers to disease.

Transplanting

- Begin to harden off plants about 10 days before transplanting outdoors.
- Once nighttime temp reach at least 60 °F, transplant seedlings outdoors, space them 18" to 24" apart.
- Plant the transplants no deeper than they were already; otherwise, the stems may become susceptible to rot.

Care

- Water one to two inches per week, but remember that peppers are extremely heat sensitive. If you live in a warm or desert climate, watering everyday may be necessary.
- Fertilize after first fruit set. Peppers love fish emulsion, consider feeding once every 2 weeks.
- Weed carefully around plants to avoid disturbing roots.
- If necessary, support plants with cages or stakes to prevent bending. Try commercially available cone-shaped wire tomato cages.

Pests / Diseases

- **Anthraxnose:** Yellow/brown/purple/black spots on leaves; sunken, dark spots on stems and fruit. **Control / Prevention:** Destroy infected plants; choose resistant varieties; provide good drainage; avoid overhead watering; apply compost for nutrition; use mulch; practice crop rotation.
- **Blossom-end Rot:** Caused by lack of sufficient calcium uptake. Symptoms: dark, water-soaked spots on blossom end of fruit may enlarge & become sunken. **Control / Preventions:** Remove affected fruit; plant at proper soil temperature; water deeply and evenly; use mulch; maintain proper soil pH (6.5) and nutrient levels; avoid excessive nitrogen; provide good drainage; avoid damaging roots.
- **Root-Gall Nematodes:** Roots become "knotted" or galled; plants stunted/yellow/wilted. **Control / Prevention:** Destroy affected plant matter (especially roots); choose resistant varieties; expose soil to sun (solarize); add aged manure/compost; disinfect gardening tools between uses; till soil in autumn; practice crop rotation.
- **Aphids:** Yellow leaves; distorted flowers/fruit; sticky "honeydew"; sooty, black mold that forms on honeydew; large presence of ants on plants. **Control / Prevention:** Grow companion plants to either repel aphids away (basil, rosemary, strong-scented plants); knock aphids off plants with water spray, apply insecticidal soap; put banana or orange peel around plants; wipe leaves with a 1-2% solution of liquid dish soap & water every 2-3 days for 2 weeks.



Borage

DAYS TO MATURITY: 65-75	GERMINATION DAYS: 14 - 21	HARDINESS ZONE: 3-10	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 12 -18"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN

Borage is one of the most unique additions to your herb garden with its wide applications as an herb, flower, and vegetable. Throughout the ages, borage has had many uses in traditional herbal medicine, one of them being the alleviation of menstrual pains. The young leaves and flowers are edible with a cucumber-like taste, the blue flowers make a summer treat frozen into ice cubes. Bees and other beneficial insects love it. Borage is a somewhat gangly plant, but you barely notice that because the star-shaped flowers hanging in downward-facing clusters are so vibrant.

Growing Borage

Borage is an easy, fast-growing, annual herb with vivid blue flowers and the flavor and scent of cucumbers. While it is considered an herb, it's often grown as a flower in vegetable gardens, where it is considered a good companion plant for tomatoes, squash, and strawberries. It's even supposed to deter tomato hornworms and improve the flavor of tomatoes growing nearby.

Borage is a somewhat gangly plant, but you barely notice that because the star-shaped flowers hanging in downward-facing clusters are so vibrant.

Growing borage in pots is a great option if you don't have the garden space for it. Use a container that's at least 12 inches deep with ample drainage holes. An unglazed clay container is ideal because it will allow excess soil moisture to escape through its walls. Note that container-grown plants will typically need more frequent watering than those grown in the ground, though you shouldn't allow the soil to become soggy.

Care

Pruning: Regularly deadheading the plants, or removing the spent blooms, will encourage them to keep blooming for several weeks. Also, if you prune back borage by one-half in the midsummer, it will grow tender new leaves for a late summer harvest.

Repotting: A well-draining, all-purpose potting mix will do for container-grown borage. The plant doesn't take well to transplanting, so aim to pot in a large container to make repotting unnecessary.

Pests / Diseases

There are few pest or disease problems with borage. Powdery mildew can occur, especially in subpar growing conditions. Making sure there is air circulation around the plants and that they are properly watered can help to prevent the fungal disease.



Broccoli

DAYS TO MATURITY: 85-90	GERMINATION DAYS: 14 - 21	HARDINESS ZONE: 3-10	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: 40-70 °F	PLANT SPACING: 18 - 24"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Broccoli is cool-season crop, so it should be started in late winter or early spring for an early summer crop, or in mid- to late summer for a fall crop. High temperatures will affect development of the broccoli head. Broccoli seeds are capable of germinating in soil temperatures as low as 40 °F, but warmer soil is preferred and will greatly speed up development.

Planting

- Start seeds indoors 6 to 8 weeks before your last frost date. You can also sow seeds outdoors 2 to 3 weeks before your last frost date, or as soon as the soil can be worked in the spring.
- Broccoli requires a site with exposure to full sun (6-8 hours per day). Lack of sunlight may produce thin, leggy plants and subpar heads.
- Broccoli prefers moist, fertile and slightly acidic soil, pH between 6.0 and 7.0.
- Sow seeds ½-inch deep and 3 inches apart.
- Once seedlings reach a height of 2 to 3 inches, thin them so that plants are 12 to 20 inches apart.

Care

- Plants thrive outdoors in 65°F to 70°F conditions.
- Fertilize broccoli three weeks after transplanting seedlings into the garden. Use a low-nitrogen fertilizer.
- Provide consistent soil moisture with regular watering, especially in drought conditions. Water at least 1" per week.
- Roots are very shallow, so try not to disturb the plants. Suffocate weeds with mulch.
- Mulching around plants will also help to keep soil temperatures down.
- To promote the growth of a second head after the first has been harvested, actively feed and water.

Pests / Diseases

- Aphids: Curling leaves may mean that the plant's sap is being sucked by insects. Apply soapy water to all sides of leaves whenever you see aphids.
- Cabbage loopers: Small holes on the leaves between the veins mean small green caterpillars are present. Look at the undersides of the leaves. Hand pick if the problem is small or control with a natural, bacterial pesticide.
- Cabbageworms and other worm pests: Treat same as loopers.
- Club root: Quickly wilting plants may be due to this fungus in the soil. The entire plant, including all roots and root tendrils, must be gently dug up and removed. If the roots are gnarled and misshapen, then club root is the problem.
- Downy Mildew: Yellow patches on leaves are usually caused by moist weather. Keep leaves as dry as possible with good air circulation.
- White rust, Whiteflies
- Nitrogen deficiency: If the bottom leaves turn yellow and the problem continues toward the top of the plant, the plants need a high nitrogen fertilizer or blood meal. Blood meal is a quick nitrogen fix for yellowing leaves.

Harvest

- Harvest broccoli when the buds of the head are firm and tight.
- Cut heads from the plant, taking at least 6 inches of stem. Make a slanted cut on the stalk to allow water to slide away. Water can pool and rot the center of a flat-cut stalk, ruining the secondary heads.



Brussels sprouts

DAYS TO MATURITY: 85-100	GERMINATION DAYS: 14 - 21	HARDINESS ZONE: 2-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: 45-75 °F	PLANT SPACING: 34 - 30"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Planting

- Brussels sprouts may be started from seed indoors or sown directly into the garden. Start seeds indoors to get a head start.
- Work several inches of aged manure and/or compost into the soil a few days before sowing or transplanting.
- Sow seeds about ½ inch deep. If direct sowing seeds outdoors, sow seeds about 2 to 3 inches apart.
- Seedling should be thinned to 12 to 24 inches apart when they reach about 6 inches tall.
- Plant transplanted seedlings 12 to 24 inches apart.
- Water well at time of transplanting.
- Brussels sprout plants usually reach heights of 2 to 3 feet, so plan accordingly; they may require staking.

Care

- Fertilize with a nitrogen-rich product after thinning, repeat every 3 to 4 weeks.
- Mulch to retain moisture and keep the soil temperature cool through summer.
- If growing during hot weather, be sure to keep the plant is well watered. Inconsistent moisture can lead to subpar sprout development. Brussels sprouts should receive about 1 to 1½ inches of water per square foot per week.
- Consider using row covers to protect young plants from pests. Brussels sprouts are usually planted outdoors right when pests are at their worst!
- Do not disturb the soil around the plants; roots are shallow and susceptible to damage.
- Remove yellowing leaves at the bottom of the plant to allow for more sunlight on the stalk and to focus plant energy on healthy growth.
- To encourage plants to mature faster, cut off the top leaves 3 to 4 weeks before harvest.

Pests / Diseases

Aphids | Black Rot | Cabbage Loopers | Cabbage Root Maggots | Cabbage Worms | Club root | Downy Mildew | Flea Beetles | White Mold

Harvest

- Sprouts mature from the bottom of the stalk upwards. Harvest sprouts from the bottom when they reach about 1 inch in diameter.



Cabbage

DAYS TO MATURITY: 90 - 100	GERMINATION DAYS: 10 - 14	HARDINESS ZONE: 2 - 9	PLANTING DEPTH: 1/4" - 1/2"
TEMP PREFERENCE: 60 - 65 °F	PLANT SPACING: 12 - 24"	SOIL PH: 6.5 - 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Growing

- Understand cabbage is a heavy feeder; it quickly depletes the soil of required nutrients.
- Prepare soil in advance by mixing aged manure or compost. Soil should be well-draining, roots that stand in water cause heads to split or rot.
- Start indoors about 6 to 8 weeks before the last spring frost.
- Before planting the seedlings outdoors, harden off the plants over the course of a week or two.
- Transplant small plants outdoors on a cloudy afternoon 2 to 3 weeks before the last spring frost date.
- Plant seedlings 12 to 24 inches apart in rows, depending on the size of head desired. The closer you plant, the smaller the cabbages.

Care

- When seedlings reach about 5 inches tall, thin to leave the desired space between them.
- Mulch thickly around the area to retain moisture and regulate soil temperature. The optimum soil temperature is about 60 °F to 65 °F. Plants exposed to temperatures below 45°F may form loose heads.
- Fertilize 2 weeks after transplanting with a balanced (10-10-10) fertilizer.

Pests / Diseases

- Aphids
- Cabbage Loopers
- Root Maggots
- Flea Beetles
- Clubroot
- Cutworms
- Cabbaworms
- Downy Mildew
- Slugs/Snails
- Thrips

Harvest

- Harvest when heads reach desired size and are firm. Mature heads will split. This will take around 75-90 days for most cabbage varieties.
- To harvest, cut each cabbage head at its base with a sharp knife. Remove any yellow leaves (retain loose green leaves; they provide protection in storage) and immediately bring the head indoors or place it in shade.
- To get two crops, cut the cabbage head out of the plant, leaving the outer leaves and root in the garden. The plant will send up new heads; pinch off those until only four or so smaller heads remain. Harvest when tennis ball-size (perfect for salads!).



Carrot

DAYS TO MATURITY: 65-70	GERMINATION DAYS: 10 - 15	HARDINESS ZONE: 2-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: 60 – 70 °F	PLANT SPACING: 3 - 5"	SOIL PH: 6.0 – 6.8	LIGHT PREFERENCE: FULL SUN

Carrots grown in garden are full of flavor and texture. They are easy to grow as long as they are planted in loose, sandy soil during the cooler periods of the growing season—spring and fall (carrots can tolerate frost). Depending on the variety and local growing conditions, carrots may take anywhere from 2 to 4 months to mature. Plant them in the spring and summer for a continuous harvest through fall!

Planting

- Proper soil preparation is extremely important for carrot growing. If the carrot roots can't easily grow unobstructed, it can lead to stunted and misshapen crops. Till down 12 inches and make sure there are no rocks, stones, or even soil clumps that could impede your carrots' growth.
- Sow seeds outdoors 3 to 5 weeks before the last spring frost date. For continuous harvest, sow seeds every 2 weeks through late spring. For a fall harvest, sow seeds in mid- to late summer—starting about 10 weeks before your first fall frost.
- Sow seeds directly in the garden rather than transplanting. Carrots do not like to have their roots disturbed.
- Keep the soil moist with frequent shallow watering. For small carrot seeds to germinate, the soil shouldn't form a hard crust on top; cover with a layer of vermiculite or fine compost to prevent a crust from forming.
- Avoid amending the soil with nitrogen-rich fertilizer, which causes carrots to fork and grow little roots.
- If the ground has clay, consider planting in a raised bed at least 12 inches deep and filled with airy, loamy soil.
- Choose a location that receives full sunlight. Carrot plants can tolerate partial shade too.
- Soil must be loose, sandy or loamy, and airy so that carrot roots can easily push down through the soil.

Care

- When seedlings are an inch tall, thin so that they stand 3 to 4 inches apart. Snip tops with scissors instead of pulling them out to prevent damage to the fragile roots of the remaining plants.
- Gently mulch carrots to retain moisture, speed germination, and block the sun from hitting the roots directly.
- Water at least one inch (about ½ gallon per square foot) per week to start, then two inches as roots mature.
- Weed diligently, but be careful not to disturb the young carrots' roots while doing so.

Pests / Diseases

- **Pests:** Black canker, Carrot rust flies, Flea Beetles, Root-knot nematodes, Wireworms
- **Aster Yellow Disease** will cause shortened and discolored carrot tops and hairy roots. This disease is spread by pests as they feed from plant to plant. Keep weeds down and invest in a control plan for pests such as leafhoppers. This disease has the ability to overwinter.



Carom

DAYS TO MATURITY: 55-60	GERMINATION DAYS: 7 - 10	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: 60 – 75 °F	PLANT SPACING: 3 - 5"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: PARTIAL SHADE

Carom seeds (*Trachyspermum ammi*) belong to the family of Apiaceae (Umbelliferae), of the genus; Trachyspermum. The Umbellifers are the members of carrot or parsley family, is an annual herbal plant growing up to 2 feet in height. Some of the common names for the seeds are Bishop's Weed, Ajowan, carom, Ajvain, Ethiopian Cumin, etc. The plant is believed to have originated from Egypt in Middle East. Carom is renowned for their medicinal value to help Flatulence, Digestive aid, Nausea and vomiting, Anti-spasmodic, Asthma and Colic issues. Carom seeds are strongly pungent and aromatic in its taste.

Planting

- Start seeds indoors about 6-8 weeks prior to the last spring frost date. Seeds germinate quickly at temperatures between 60 to 75 °F.
- Do not plant transplant into the garden until after the last threat of frost.
- **Sunlight:** Full sun to partial shade is favorable for Carom plant. The true color of its leaves is jade green, but in absence of ample sunlight, they turn dark green shade. For indoors, this plant will be benefited from west to south-facing windows.
- **Water:** Carom plant appreciates slightly moist soil, but not soggy. Water it during the early morning or evening.
- **Soil:** Carom plant prefers loose, well-aerated, and well-draining soil with a pH around 6-8. If growing in the garden, amend the soil fertility with compost or any organic matter. For pots, it is better to use a potting mix. You can make your own mix by mixing equal parts of compost or well-rotted manure, coarse sand, and peat moss.
- **Pot Size:** Choose a pot that's at least 12-inches deep and wide. Make sure the pot has at least one drainage hole at the bottom to let excess water skip.

Care

- **Fertilizer:** Carom plant is not a heavy feeder but during springs, when it is attaining fresh growth, you can apply soluble, slow-release fertilizer with a 10-10-10 NPK ratio. The plant also gets benefits from the regular application of compost tea, composted manure, and dilute fish emulsion, once a month.
- **Pruning:** When the plant reaches at least 6-8 inches, trim the lengthy stems using sanitized shear. Also, deadhead flowers and remove broken and damaged leaves from the plant. Pruning makes the plant bushier and encourages fresh growth.
- **Mulching:** Mulch plant base using shredded bark, grass clippings, or bark chips to prevent water loss from soil and to keep the temperature even.
- **Support:** When growing it in a garden, the plant may require support, as the stems start leaning down when they attain maturity.

Pests / Diseases

Carom plant is generally not damaged by pests and cabbage worms, in fact, it deters them away. But it can be susceptible to aphids, and bug attacks, so you can use a neem oil spray.

Harvest

Both flower and leaves find culinary uses in the kitchen and are available for harvest after 6-7 weeks. You can snip off fresh leaves, before they start to develop bristly hairs, using scissors. The flower can be hand-picked when they are opening. You can use leaves and flowers fresh in cooking or making tea.



Catnip

DAYS TO MATURITY: Perennial	GERMINATION DAYS: 14 – 21	HARDINESS ZONE: 3-7	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 18 - 24"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: Full Sun / Partial

Catnip foliage is greenish-gray with small white or purple flowers. Besides being a popular stimulant for cats, with a pungent mint-like fragrance, the dried leaves can be used to brew a tea that promotes relaxation in humans. The leaves are heart shaped and coarsely toothed. Attracts not only cats but bees and butterflies!

Planting

Sow catnip seeds just after the last frost of spring outdoors or sow inside. Stratification prior to sowing can help germination. Catnip loves full sun, but in places of extreme heat plant in an area that receives at least five to six hours of direct sunlight. Catnip needs space to branch out, so give plants space. Pinch off flower buds to encourage more leaf growth and prevent self sowing.

Harvesting

To dry catnip, cut about 4 inches above the base of the plant. This can be done multiple times during the growing season ensuring a good supply. Hang upside down to dry. If you have a cat, make sure you dry them in a place your cat doesn't have access to. Cats also love the fresh growing herb. Place a small pot of catnip in the window sill and watch your cat visit.



Cauliflower

DAYS TO MATURITY: 60 - 75	GERMINATION DAYS: 10 - 12	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: <75 °F	PLANT SPACING: 10 - 12"	SOIL PH: 6.0 – 7.5	LIGHT PREFERENCE: FULL SUN

Planting

- Soil needs to be very rich in organic matter; include aged manure or compost into soil bed.
- Cauliflower is a heavy feeder, include extra nutrients such as 5-10-10 fertilizer.
- Start sowing indoors about 4 to 5 weeks before the last spring frost date. Sow seeds about 1/2 inch deep. Water consistently during germination and growth.
- Transplant seedlings 2 to 4 weeks before the last spring frost date. This is very important, no sooner and not much later.
- Set plants 18 to 24 inches apart with 30 inches between rows.
- In early spring, protect plants from frost by covering them with domes. Severe cold can halt growth that affect buttons formation.
- Plant a fall crop 6 to 8 weeks before the first fall frost date when the daytime temperatures fall below 75°F. Consider shading plants from summer heat.
- Add mulch to help retain consistent moisture and regulate temperature.

Care

- Cauliflower dislikes any interruption to its growth. Any drastic fluctuations in temperature, moisture, soil nutrition, or insects, affects head development.
- Cauliflower required constant moisture, water about 1-2 inches every week.
- Side-dress plant with a high-nitrogen fertilizer 3 to 4 weeks after transplanting.
- Cauliflower will start out as a loose head and that it takes time for the head to fully form. Many varieties take at least 75 to 85 days from transplant.
- When the white head grows to about 3 inches in size consider blanching the head. You need to tie the outer leaves together over the head to avoid light on head and worms intrusion.

Pests/Diseases

- Aphids
- Black rot
- Cabbage loopers
- Root Maggots
- Clubroot
- Stinkbugs
- Cabbage worms
- Powdery Mildew
- White Rust
- Thrips

Harvest

- Plants are usually ready to harvest in about 60 to 75 days.
- Visually inspection if the head is white, firm and compact
- Harvest when the heads are about 6 to 8 inches in diameter,



Celery

DAYS TO MATURITY: 100 - 110	GERMINATION DAYS: 14-21	HARDINESS ZONE: 3-10	PLANTING DEPTH: 1/4" – 1/2"
TEMP PREFERENCE: 60-70 °F	PLANT SPACING: 10 - 12"	SOIL PH: 5.8 – 6.8	LIGHT PREFERENCE: FULL SUN

Celery is one of the most popular vegetable crops revered by many home gardeners. Much like lettuce, broccoli, and kale, garden celery can be harvested repeatedly throughout the season as a “cut and come again” variety able to be pushed up until the frost. Once established, this plant becomes one of the most productive and low-maintenance of the season, certain to find its way back into the garden bed year after year.

Planting

- Celery is considered a hardy biennial, but it's grown as an annual which is mainly grown for its edible stalks. This cool weather favorite is best when started in early spring or late summer.
- It is very easy to grow celery but it takes longer to mature. You do need start celery from seed indoors about 10-12 weeks prior to last spring frost or about 8 week prior to first winter frost. You can also soak seeds in warm water overnight to speed germination.
- Seeds are very tiny, carefully spread the seeds above the surface of the potting mix add a very small layer of potting mix to cover the seeds.
- Cover starter trays/pots with plastic wrap to retain moisture. Germination can take up to three weeks; be patient.
- Maintain an ambient temperature of 65° to 75°F and mist regularly to keep them moist.
- Transplant seedlings when they are about 2" tall. Harden off seedlings before transplanting outdoors.
- Select a site that receives full direct sunlight.
- Celery prefers enriched well drained soil. Add aged manure or compost to the soil 2 weeks prior to planting.

Care

- Celery requires lots of water. Make sure to provide plenty of water if not, celery stalks will be dry and small.
- Add plenty of mulch around the plants to retain moisture. Side dress organic fertilizer during growing stages.
- Pay attention while weeding, celery has shallow roots and could easily get disturbed.

Pests/Diseases

Flea beetles | Slugs and snails | Earwigs

Harvest

- Harvesting can be done until the first frosts of the season.
- Celery plants are cut and come again, cut the stalks above the stem. Young celery grow again.
- Harvest stalks from the outside in. You may begin harvesting when stalks are about 8 inches tall.



Chives

DAYS TO MATURITY: PERENNIAL	GERMINATION DAYS: 14-21	HARDINESS ZONE: 3-10	PLANTING DEPTH: 1/4" – 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 6 - 12"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN / PART

Chives are a perennial member of the onion family that sport beautiful edible flowers. Plus, they're a wonderful companion plant that helps deter pests. Chives are cool-season, cold-tolerant perennials that are best planted in early to mid-spring for an early summer harvest.

Planting

- Chives are considered a cool-season crop, which means that they grow best in the spring and fall. The harsher temperatures of summer usually cause them to go dormant until cool weather arrives again.
- Starting indoors: Start chive seeds indoors 6 to 8 weeks before the last spring frost.
- Transplants need good growth before being set in the garden.
- Choose the sunny location. Chives grow best in full sun, though they will tolerate light shade.
- Soil needs to be moist, fertile, rich, and well-draining. Before planting, incorporate 4 to 6 inches of well-composted organic matter. Work compost into the soil to a depth of 6 to 8 inches
- Sow seeds about 2 inches apart and no more than 1/4 inch deep. Cover with a thin layer of soil.
- Once seedlings emerge, thin so that plants are spaced between 4 to 6 inches apart in all directions.
- Starting outdoors: sow seeds as soon as the soil is workable in the spring. Note that they can take a few weeks to germinate. The temperature of the soil should be between 60° and 70°F for the best germination and growth.

Care

- Minimal care is needed for fully-grown, established plants.
- Provide consistent watering throughout the growing season for high yields.
- Chives small bulbs grow near the soil surface, so use mulch to conserve moisture and keep the weeds down.
- Side dress with a nitrogen-rich fertilizer in late spring or early summer.
- After the flowers bloom, be sure to remove them so that the seeds aren't spread throughout your garden.
- Remember to divide the plants every 3 to 4 years in the spring. Chives are much more productive if divided regularly. Divide them into clumps of at least 10 small bulbs and allow divided plants to grow for several weeks before harvesting.

Pests/Diseases

Bulb rots | White rot | Mildew | Rust | Smut | Fungal leaf spots | Onion fly | Thrips

Harvesting

- Begin harvesting chive leaves about 30 days after transplanting or 60 days after seeding.
- Be sure to cut the leaves down to the base when harvesting (within 1 to 2 inches of the soil).
- Harvest 3 to 4 times during the first year. In subsequent years, cut plants back monthly.



Cilantro

DAYS TO MATURITY: 50 - 55	GERMINATION DAYS: 14-21	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4" – 1/2"
TEMP PREFERENCE: <75 °F	PLANT SPACING: 3 - 6"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Planting

- Sow seeds in the spring after the last frost date.
- Plant the seeds in light, well-drained soil and space them 1 to 2 inches apart. Sow the seeds at 3-week intervals for continued harvest.
- Do not grow in summer heat as the plants will bolt. The leaves that grow on bolted plants tend to be bitter in flavor.
- Cilantro loves sun, it is best to choose a sunny site that gets at least 6-8 hours of sunlight
- Space rows about 12 inches apart.
- It is important to keep the seeds moist during their germination, so remember to water the plants regularly.

Care

- Water the seedlings regularly throughout the growing season. They require about 1 inch of water per week for best growth.
- Thin seedlings to 6 inches apart so that they have room to develop healthy leaves.
- Once the plants are established, they do not need as much water per week. Keep them moist, but be careful not to overwater them.
- Fertilize once or twice during the growing season with nitrogen fertilizer. Apply ¼ cup of fertilizer per 25 feet of row. Be sure not to over-fertilizer the plants.
- To help prevent weeds, mulch around the plants as soon as they are visible above the soil. You can also till shallowly to help prevent root damage from weeds.

Pests / Diseases

- Fungus Wilt
- Leaf hoppers
- Aphids
- Mildew

To control for insects, use insecticidal soap once they are spotted under leaves. Clean up debris and spent plants to avoid wilt and mildew.

A common problem with cilantro is its fast growing cycle. As mentioned above, it will not grow properly in the heat of summer. Grow so that you harvest in spring, fall, or winter (in mild climates).

Harvest

- Cilantro leaves can be harvested at any time after the plant is 6 to 8 inches tall. Plants usually matures in about 75 days after sowing. To harvest coriander seed, the plant requires 100 or more days.
- Simply snip cilantro leaves for fresh use after the plant is 6 inches tall or more. Small tender leaves have the best flavor. Pick just the top 2 to 3 inches to ensure continuous growth. Snip off the tops of stems before the plant flowers for a continued harvest of leaves. Continue picking leaves until the plant flowers.
- Coriander seeds are harvested after cilantro flowers; the seed will be ready for harvest 2 to 3 weeks after flowering when they turn light brown. Hang stems and seed heads upside down in a paper bag in a cool, dry place. The seeds will fall into the bag as they ripen.



Collards

DAYS TO MATURITY: 60 - 75	GERMINATION DAYS: 14-21	HARDINESS ZONE: 3-12	PLANTING DEPTH: 1/2" – 1"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 6 - 8"	SOIL PH: 6.0 – 6.5	LIGHT PREFERENCE: FULL SUN

Collards are a cool weather hardy biennial grown as an annual. They grow to an average height of 3 feet tall. Collard belongs to cabbage family but requires slightly warmer weather condition. Consider planting about 3 collard plants per household member.

Planting

- Choose a location that receives at least 6-8 hrs of full sun. Collards prefer organically rich well-drained soil with a pH in the range of 6.0 to 6.5. Add composted or aged compost to the soil about 2-3 weeks before planting.
- Being a member of cabbage family, Collards can tolerate temperatures as low as 20° F. also, they more heat tolerant than cabbage.
- Start seed indoors 4 to 6 weeks before the last frost in spring. Gently harden transplants before placing in the ground. Sow seed outdoors when the soil can be worked in spring. Collards can be planted outside as early as 4 weeks before the last sprint frost.
- Sow seeds about 1/2 inch deep and 3 inches apart (in sowing directly). Thin collards to about 8 inches apart when seedlings are about 3 to 4 inches tall. Space rows about 18 inches apart. You can also transplant thinned seedlings (gently pulled) to another location. If the seedlings are leggy plant deeper right below the first leaf set.
- Collards go well with Tomatoes, Peas and peppers (Companion plants). However, they shouldn't be planted close to potatoes.

Care

Watering: water collards regularly so that leaves do not grow hard. Under-watering may cause collards to become hard and not tasty.

Fertilizing: add manure or aged compost about 2-3 weeks prior to planting. Side-dress with compost at midseason.

Mulching: mulch around collards to keep the soil moist and cooler during hot summer days.

Pests / Diseases

- | | | | | |
|------------|-------------------|----------------|----------------|-------------|
| • Aphids | • Cabbage Loopers | • Root Maggots | • Flea Beetles | • Club root |
| • Cutworms | • Cabbage worms | • Downy Mildew | • Slugs/Snails | • Thrips |

Diseases. Collards have no serious disease problems.

Harvest.

- Collards can be harvested any time after 65 days from transplanting. Gently pick the leaves or use sanitized shears to cut leaves. Collards are "cut and come again" varieties that yields throughout the summer season and extended until hard winter frost.
- Harvest young, tender leaves from the bottom up; cut leaves before they get old and tough. Frost will cause some of the carbohydrates in the plants to turn to sugar and can make leaves sweeter tasting. Complete the harvest before the first hard freeze.



Cress

DAYS TO MATURITY: 30	GERMINATION DAYS: 7-14	HARDINESS ZONE: 6-9	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: <75 °F	PLANT SPACING: 10-12"	SOIL PH: 6.0 – 6.7	LIGHT PREFERENCE: FULL SUN

Garden cress is quite simpler to cultivate. In addition, it is also possible to grow garden cress indoors for use during the winter. The sprouts, leaves as well as the young buds are edible. A mature Garden Cress plant produces white flowers and small seed pod, surprisingly all parts of garden cress are edible - leaves, stems, and seeds.

There are several types of cress:

- **Garden cress (*Lepidium sativum*)**, also called broadleaf cress, has flat, bright green leaves to 4 inches long and 2 inches wide. Garden cress, a biennial, is also called peppergrass, pepper cress, Cress- upland and mustard cress.
- **Curly cress (*Barbarea vernapraecox*)**, also called cresson, early winter cress, or Upland cress, has finely divided leaves resembling parsley or chervil atop thin, branching stems. Curly cress is dark green and is also called curled cress, curlicress, and fine curled cress, moss curled cress, and extra-curved cress. Curly cress is a biennial that thrives in damp soil.
- **Watercress (*Rorippa nasturtium-aquaticum*)** is a trailing annual usually grown in water. Grow watercress indoors in pot set in a tray of water or along the side of a stream or watercourse. Watercress is an annual which grows in soil in gently running water.

Planting

- Cresses grow easily from seed and also can be propagated from stem-pieces or cuttings. Cress will sprout on water-soaked paper towels.
- Cresses are cool-weather annuals. Sow cress in the garden early in spring, as early as 4 or 6 before the last frost, or grow cress indoors year round. Cress will germinate in about 14 days at 45°F.
- Garden cress is quick growing from seed; it will be ready for harvest 15 to 20 days after sowing. Curly cress requires 40 to 50 days to reach maturity but harvest can begin 15 days after sowing. Watercress requires 55 to 70 days to reach maturity but runner tips can be pinched off for use 15 to 20 days after sowing. Sow cress every 10 days for a continuous harvest through midsummer. Cress can become pungent and inedible in hot weather. Plant cress in shade or semi shade. Grow garden cress and curly cress in moist but well-drained sandy loam. Grow watercress in a container of compost-rich, sandy soil submerged in running water. Cress prefers a soil pH of 6.0 to 6.7
- Cress requires even moisture. Do not let roots dry out. Grow watercress in gently running water. Grow cress in soil rich in aged compost.
- Bunching onions, chives, peppermint, spearmint, and wintergreen are few companion plants.

Care

- Keep soil weed free. Avoid growing cress in direct sun. Pinch cress back to promote new foliage.
- Garden cress and curly can be grown in containers, pots and boxes. Sow seeds thickly; cress is not bothered by overcrowding. Garden cress can be grown indoors on a windowsill. Use a container with good bottom drainage. Keep the soil moist.

Pests / Diseases

- Luckily Cress has no serious pest & disease problems.

Harvest

Cut or pinch out cress tips as needed, cut-and-come-again. Begin cutting plants when they reach 3 to 4 inches tall. Plants cut back to about 1/2 inch will regrow quickly. Cress is most tender at the early seed-leaf stage; harvest cress well before it matures. Sprouts can also be used fresh.



Cucumber

DAYS TO MATURITY: 60-75	GERMINATION DAYS: 7-14	HARDINESS ZONE: 3-12	PLANTING DEPTH: 1"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 12-18"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN

Cucumbers fall under two main types:

Vines: that require trellis or fence to grow. These types grow really fast and very prolific (depending on the care). Vines need to be properly trained to hold the fruit weight

Bush: Doesn't require trellis and are suited to containers and small gardens.

Planting

- Cucumbers are extremely susceptible to frost and cold. Soil must be at least 70°F, do not plant outside too soon.
- Start seeds indoors about 2-3 weeks before you plan to transplant them outside. Cucumbers prefer the soil temperature of about 70°F.
- Choose a location that receives full sun. Cucumbers like warmth and lots of light.
- Cucumbers require organic rich fertile soil. Work the soil by mix aged manure or compost before planting. The soil should not be soggy and compacted but moist and well-drained.
- In case you have clay soil add more organic matter such as peat, aged manure, compost, etc., to make it light.
- Plant seeds about 1 inch deep, place trellis about 1 foot apart (for vines to train). When seedlings are about 4 inches tall, thin plants so that they are at least 2 feet apart.
- After planting, mulch around the area with straw, chopped leaves, or another organic mulch to keep pests at bay, and also keep bush types off the ground to avoid disease.
- Cover freshly planted cucumber seeds with netting to keep pests from digging out the seeds.

Care

- **Trellis:** set up trellises early to avoid damage to seedlings and vines.
- **Watering:** cucumbers need at least one inch of water per week. If the temperature is too high then consider 2 inches of water. Water consistency is very important, inconsistent watering leads to bitter-tasting fruit.
- Add mulch to hold in soil moisture. The check for moisture simply put your finger in the soil about 1" deep and if it dry then it is time to water.
- Side-dress the plants with compost or aged manure when the plants are growing.

Pests / Diseases

- **Aphids** are always a nuisance for any vegetable plant but easily managed.
- **Squash bugs** may attack seedlings.
- **Cucumber Beetles** may attack the vines and can cause disease.
- **Powdery mildew** can be a problem if the leaves get wet, water at the soil level.

Harvest

- Pick when the cucumbers are small and tender, the bigger it gets it will taste bitter.
- Frequently pick cucumbers for more yield.



Dill

DAYS TO MATURITY: 65-70	GERMINATION DAYS: 7-14	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >75 °F	PLANT SPACING: 8-12"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN / PART

Dill is often used as a pickling spice or used to season fish. Dill grows to be 2 to 4 feet high, with sleek green stems and finely cut foliage. The plant is multibranched and grows yellow flower clusters. Dill is aromatic, has a hint of caraway flavor and is lovely in a cucumber salad. This plant grows throughout summer and peaks in flavor once flowering starts. When grown in ideal Sow seeds once the soil is able to conditions, dill will self-seed.

Planting

- Choose a sunny location to sow seeds. Dill prefer full sun for optimal growth.
- Directly sow dill seeds about 1/4-inch deep and 12 inches apart after the threat of frost has passed in the spring.
- Dill puts down a taproot, like carrots, it doesn't transplant well
- The soil temperature should be between 60 and 70°F for the best germination results.
- Prepare a well-draining soil that's rich in organic matter. The pH of the soil should ideally be between pH 6.5 to 7.0.
- Provide shelter to young plants from strong winds, it can be blown over easily.

Care

- Water the plants freely during the growing season, ensuring that they don't dry out excessively.
- In order to ensure a season-long fresh supply of dill, continue sowing seeds every few weeks.
- If dill is allowed to go to seed and the soil isn't disturbed too much, more dill plants will likely appear next spring.

Pests/Diseases

- Leaf spot and occasionally a few other types of fungal leaf and root diseases

Harvest/Storage

As soon as the plant has four to five leaves, you can start harvesting. Harvest older leaves first. Pinch off the leaves or cut them off with scissors.



Echinacea

DAYS TO MATURITY: 75-90	GERMINATION DAYS: 14-21	HARDINESS ZONE: 3-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 12-18"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Echinacea is an essential hardy perennial wildflower for your herb garden. Fairly easy to grow, give it sun and moderate water and beginning in its second year, you will be rewarded with plenty of material to harvest. This herb is often used to aid a common cold or flu and immune system support.

Planting

- Echinacea prefers well-drained soil and full sun for best bloom. Choose a location where the coneflowers won't get shaded out nor shade out others.
- The matured plant may reach between 2 and 4 feet in height, depending on variety.
- Sow seeds about 1/2-inch-deep and 18 inches apart, depending on the mature size of the variety.
- Echinacea is very tolerant of poor soil conditions, but they perform best in soil that's rich so mix in organic matter.
- Loosen the soil using a garden fork or tiller to 12 to 15 inches deep, then mix in a 2- to 4-inch layer of compost.
- Start indoors about 4 weeks before the last spring frost date or directly start outdoors when the soil temperature has reached at least 65°F.
- Note: Coneflowers started from seed may take 2 to 3 years before producing blooms.

Care

- Apply a thin layer of compost around the plants to help keep the plants moist.
- Native coneflowers really do not need fertilizer. Ensure your soil has plenty of organic matter when you plant.
- In the fall, apply about 2 inches layer of mulch in colder regions.
- Cut back in late winter/early spring when you're tidying up the garden.

Pests/Diseases

- Leaf miners
- Japanese beetles
- Powdery mildew
- Bacterial spots
- Gray mold
- Vine weevils



Eggplant

DAYS TO MATURITY: 75-80	GERMINATION DAYS: 14-21	HARDINESS ZONE: 5-12	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 12-24"	SOIL PH: 5.8 – 7.2	LIGHT PREFERENCE: FULL SUN

Eggplant – also known as Brinjal grows wild in its homeland of South Asia as a perennial plant, though these warm-season vegetables are treated by most gardeners as annuals. Given their tropical and subtropical heritage, eggplants do require relatively high temperatures, similar to tomatoes & peppers (which, like eggplants, are in the Nightshade family). They grow fastest when temperatures are between 70 and 85°F and very slowly during cooler weather. Like tomatoes and peppers, eggplants develop and hang from the branches of a plant that grows several feet in height. Because they need warm soil, eggplants are usually started indoors about two months in advance to get a head start. Raised beds enriched with composted manure are an ideal growing place for eggplants because the soil warms more quickly.

Planting

- Start seeds indoors about 8–9 weeks prior to last spring frost date. Seeds germinate quickly at warm temp (70-90°F).
- Do not plant eggplant transplants into the garden until after the last threat of frost.
- Choose a very sunny spot for the best results.
- Eggplant grows best in a well-drained sandy loam or loam soil, fairly high in organic matter.
- Use a covering of black plastic mulch to warm soils before setting out transplants.
- Eggplant requires moderate amounts of fertilizer. Mix about 1" of aged manure or a compost about a week before planting.
- Stake the plants right away to provide support as they climb and to avoid disturbing soil later.
- If you live in a cold climate, consider using row covers to keep the eggplants warm and sheltered. Open the ends of the row covers on warm days so that bees may pollinate.
- After planting, water well. Add a layer of mulch to retain moisture and suppress weeds.

Care

- Eggplant will fall over once loaded with fruit! Be sure to stake tall plants or use a cage to keep the plants upright.
- Pinch out the terminal growing points for a bushier plant. For bigger fruits, restrict to five or six per plant.
- Water well to moisten the soil to a depth of at least 4 inches so the soil is moist but never soggy.
- The critical period for moisture is during fruit set and fruit development. Mulching can help to provide uniform moisture & conserve water.
- Apply a balanced fertilizer twice during the growing season. Side-dress when the first fruits are about the size of a quarter. **Note:** Too much nitrogen may cause excessive vegetative growth.

Pests / Diseases

- **Flea beetles** are probably the most common pest, but a healthy eggplant should be able to withstand damage from their tiny holes. Damage is usually serious only on young seedlings. Grow plants under row covers until they are large enough to tolerate leaf damage.
- **Powdery Mildew** can affect eggplant. This appears as white, powdery spots on the leaves which may turn yellow and die. The best method of control is prevention. Plant where it receives full sun, and provide good air circulation. Water at the soil level, not on the leaves.
- **Tomato Hornworms** are sometimes an issue as are Colorado potato beetles, lace bugs, and mites.
- If the flowers on eggplants form but then fall off, or if fruit is small and not growing, the most likely problem is that the temperature is too cold. Daytime temperatures need to be 80° to 90° F and night time temperatures should not go below 60° to 65° F or their grow is very slow to stalled.



Fennel

DAYS TO MATURITY: 60-70	GERMINATION DAYS: 7-10	HARDINESS ZONE: 3-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 10-12"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Growing

- **Best location:** Plant fennel in full sun.
- **Soil preparation:** Plant fennel in well-drained compost-rich soil, however, fennel will grow in all types of soil.
- **Seed starting indoors:** Fennel grows a taproot and is best sown in place. If started indoors, plant in individual peat pots so that taproots are not disturbed at transplanting. Sow seed indoors 6 to 8 weeks before the last frost.
- **Transplanting to the garden:** Set fennel in the garden after the last frost in spring.
- **Outdoor planting time:** Sow common fennel seed in spring as early as 2 to 3 weeks before the average last frost date. You can also sow fennel in late summer or early fall for harvest before the first frost. Fennel is half-hardy and will tolerate a light frost.
- **Planting depth:** Sow fennel seed 1/4 to 1/2 inch deep. Seeds must be covered completely to germinate.
- **Spacing:** Space fennel plants 10 to 12 inches apart. Space rows 2 to 3 feet apart.
- **How much to plant:** Grow 1 to 2 fennel plants for cooking; grow 4 to 5 plants for preserving.
- **Companion planting:** Grow fennel with sunflowers, calendulas, and nasturtiums to attract butterflies, hummingbirds, and beneficial insects to the garden. Fennel may interfere with the growth of beans, tomatoes, and kohlrabi. Avoid planting near dill since they cross pollinate.

Care

- **Watering:** Give fennel regular, even watering until it is established. Once established, fennel can be kept on the dry side. Do not overwater.
- **Feeding:** Side dress fennel with aged compost at midseason.
- **Mulching:** Mulch around fennel in summer to keep roots cool. To make bulb fennel tastier, mulch around the base of the plant to blanch the bulb and make it tender.
- **Care:** Common fennel can grow 3 to 4 feet tall and may require staking or supports, especially if it is growing in a windy spot. Mound soil up around the base of Florence fennel to blanch the bulb and make it tender.
- **Container growing:** Common fennel will grow easily in a container. Choose a container at least 12 inches deep; fennel forms a taproot so the container must be deep enough for the root.
- **Winter growing:** Fennel can be grown outdoors in mild winter regions.

Pests / Diseases

- **Pests:** Fennel is a member of the parsley family. Parsley caterpillars may attack fennel. Remove caterpillars by hand.
- **Diseases:** Root rot can be a problem if fennel is overwatered or planted in soil that is not well-drained.

Harvest

- Fennel leaves can be snipped for fresh use once plants are 6 inches tall or more and established. Snip leaves before flowering. Common fennel will reach maturity in 60 to 70 days. Harvest the seeds of common fennel after flowering when they turn brown. The thick bulbs at the base of Florence fennel can be eaten like a vegetable as soon as it is large enough to eat; peak flavor of the bulb comes after flower buds have formed but before blossoms begin to open. Harvest seeds when they turn from yellowish-green to brown. If you do not want seeds, snip away flowers as they form.
- Use snips or scissors to harvest leaves. Cut only the top 2 or 3 inches to ensure regrow.



Fenugreek

DAYS TO MATURITY: 30	GERMINATION DAYS: 5-7	HARDINESS ZONE: ALL	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 10-12"	SOIL PH: 6.5 – 8.2	LIGHT PREFERENCE: FULL SUN

Growing

- Fenugreek grows well in a warm and hot climate when the temperature ranges from 50 to 90 F.
- Fenugreek is a fast growing plant, you can plant indoors / outdoors at any time of the summer. If you live in zone 9-11 with frost-free winters you can grow outdoors year around.
- Fenugreek prefers neutral to slightly alkaline soil with pH level around 6.5-8.2. Plant it in a spot that receives at least 4-5 hours of direct sun with shade in the afternoon. Prefer a sunny spot if you're growing it in a climate where is not intense and the weather is cold.

Care

- **Fertilizing:** Fenugreek does not require a lot of fertilizer. At the time of planting, you can mix aged manure or compost in the soil, and that will keep it growing for a few weeks.
- **Watering:** Do regular watering to keep the soil slightly moist. Make sure not to over-water to avoid waterlogged soil. This will impede the growth and kill your plant.
- If you're growing fenugreek indoors or in a shady area, do not over water.

Pests / Diseases

Fenugreek does not have many pests and diseases. Some pests and diseases that affect it are aphids, powdery mildew, charcoal rot, and root rot. You can easily save your plant from these problems by using organic pesticides regularly and watering properly.

Harvest

- Fenugreeks are ready to harvest in about 25-30 days from germination. Gently pick the leaves to use it for immediate purpose or air dry it to use as an herb. Leave the stems and branches, which will grow up again in about 15 days.
- To harvest fenugreek seeds, you will have to wait for 2-4 months, depending on the growing conditions.



Gourds

DAYS TO MATURITY: 100-120	GERMINATION DAYS: 14-21	HARDINESS ZONE: 5-10	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: 70 - 85 °F	PLANT SPACING: 36-48"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Gourds have got to be the most diverse, showy, and unique crop growing in any home garden. Available in countless shapes, sizes, colors, and textures, ornamental gourds have become as synonymous with autumn as falling leaves or apple cider. Unlike soft melons or squash, gourds have an unusually thick skin and will not be bothered by critters in the garden.

Planting

Gourds are a full sun crop sown direct after the final frost but, for earliest starts, begin indoors 4-6 weeks prior. Plant 3-4 seeds 1-2" deep per cell or every 48-60" in the garden in an organic and nutrient-dense soil with a pH of 6.5-7.5. Gourd seeds may take 7-35 days to germinate, but are commonly pre-soaked for 24 hours to accelerate germination. Gourds perform best when grown on 8-10" tall mounds to accommodate long, trailing vines and given plenty of trellis support. For longneck varieties, trellis and allow gourds to hang straight for a bottling effect. Gourds are a heavy feeder and benefit from regular fertilizing.

Harvest

Most varieties of gourds are ready to harvest about 100 days from sowing while larger shell types require an extra month. Harvest gourds once they have hardened in the fall and stems have turned brown. Gourds will rot if left on the vine too long and also if harvested too soon. Similar to squash, harvest gourds by snipping fruits off the vine rather than twisting or pulling, leaving about 1" of stem attached to prolong shelf life, storage, and decorative ornamental use.



Ash Gourd

DAYS TO MATURITY: 90-100	GERMINATION DAYS: 10-15	HARDINESS ZONE: 6-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 24-36"	SOIL PH: 5.0 – 6.7	LIGHT PREFERENCE: FULL SUN

Growing

- Take a container of your choice which has well drained holes at the bottom
- You can prepare your own garden soil / medium by taking 2-part garden Soil & 1 part any Organic Manure or 1-part garden soil, 1-part Coco Peat & 1-part Vermicompost.
- Add good quality organic manure in the soil with 2:1 ratio before sowing seeds. Organic manure can be well rotten cow dung manure, farmyard manure, Compost or Vermicompost
- Fill the container with a good growing medium
- Sow 2 seeds per spot about 24 to 36 inches apart
- Push the seeds into the growing medium with your fingers. Cover the seeds completely with the growing medium and water thoroughly.

Care

- Ash gourd requires proper sunlight to grow well. Keep your Ash Gourd container under open sunlight
- Water the plant every day in summers using a watering can for a shower like drizzle
- You can harvest ripe Ash gourd fruits after 3 months of seed sowing. Harvesting season can continue for next 3 months
- Check for early signs of any insect/fungal/ any other infections. If you notice any such symptoms, spray your plant with appropriate medicines

Common Problems

- Why are my ash gourd seeds not germinating?
Ash Gourd prefers warm temperatures (60° F to 105° F) and full sunlight. If the temperature is cold, seeds will not germinate
- How can I control weeds growing around my ash gourd?
Weeds can be controlled using Mulch
- What is the white powdery residue on my Ash Gourd plant's leaves?
White powdery residue on upper leaf surfaces is a symptom of Powdery Mildew. Keep a watch on the early symptoms of powdery mildew. Use appropriate chemicals to get rid of the powdery mildew



Bitter Gourd / Melon

DAYS TO MATURITY: 60-85	GERMINATION DAYS: 10-15	HARDINESS ZONE: 6-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 24-36"	SOIL PH: 6.0 – 6.7	LIGHT PREFERENCE: FULL SUN

Growing

- Take a container of your choice with will drainage holes at the bottom
- You can prepare your own garden soil / medium by taking 2-part garden Soil & 1 part any Organic Manure or 1-part garden soil, 1-part Coco Peat & 1-part Vermicompost.
- Add good quality organic manure in the soil with 2:1 ratio before sowing
- Sow 2 seeds per spot about 24 to 36 inches apart
- Push the seeds into the growing medium with your fingers. Cover the seeds completely with the growing medium and water thoroughly.

Care

- For growing Bitter Gourd use big circular pots or grow bag with 16" diameter and minimum depth of 8-10 inches
- Bitter Gourds require full sunlight. Keep your bitter gourd container in a spot that receives proper sunlight. If you are growing Ash Gourd on a raised bed, ensure that you make the raised bed in a bright sunny spot.
- Water the plant every day in summer time / sunny days.
- Use a watering can. The plant needs to be watered in the form of a shower
- Check for early signs of any insect/fungal/ any other infections. If you notice any such symptoms, spray your plant with appropriate medicines
- About 2 months after sowing seeds, your Bitter Gourd will be ready for harvest

Common Problems

- My bitter gourd seeds are not germinating
The Bitter Gourd like most of the vegetable seeds requires proper sunlight for at least 5 - 6 hours in a day. Inadequate sunlight will hamper the germination process
- What is the white powdery residue on my Bitter Gourd plant's leaves?
White powdery residue on upper leaf surfaces is a symptom of Powdery Mildew. Keep a watch on the early symptoms of powdery mildew. Use appropriate chemicals to get rid of the powdery mildew.



Bottle Gourd

DAYS TO MATURITY: 85-100	GERMINATION DAYS: 10-15	HARDINESS ZONE: 6-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 24-36"	SOIL PH: 6.0 – 6.7	LIGHT PREFERENCE: FULL SUN

Growing

- Bottle gourd seeds can be grown in containers or on raised beds. If you opt for growing bottle gourd in a container, choose a circular pot or grow bag with 16" diameter and minimum depth of 8-10 inches.
- Make sure your container has proper drainage holes at the bottom
- Before sowing the seeds, add good quality organic manure in the soil with 2:1 ratio. Organic manure can be well rotten cow dung manure, farmyard manure, Compost or Vermicompost
- Ideal growing medium for bottle gourd seeds is 1-part Garden Soil + 1-part Coco Peat + 1-part Vermicompost or 2-part Garden Soil + 1-part Organic Manure.
- Fill your container with the growth medium of your choice.
- Push the seeds into the growing medium with your fingers. Cover the seeds completely with the growing medium and water thoroughly.
- Bottle gourd seeds will germinate within the first 7 - 10 days. You will notice tiny sprouts growing at this stage.
- Second week onwards, seedlings will start growing into a small plant.
- After the second week, keep only single seedling at one spot, Cut off the weak, small & lagging seedlings with a pair of scissors.

Care

- Bottle gourds require full sunlight to grow. Make sure that your raised beds and containers get sufficient sunlight.
- Water your potted Bottle Gourd plant every day in summer.
- They are aggressive climbers; bottle gourd needs a lot of space to grow. Build a strong trellis support up to height of at least 5-6 ft.
- After about 45 days of planting, add one tablespoon of 15:15:15 (NPK) Fertilizer per plant or mix handful of Vermicompost in the soil around each plant.
- Keep an eye out for early signs of any insect/fungal/ any other infections and spray appropriate medicines.
- By the end of second month (50-60 days after sowing), bottle gourd climber will start flowering.
- Raw bottle gourd can be harvested 2 months after sowing the seeds. Harvesting season can continue for next 3 months.

Common Problems

- Bottle gourd plant flowers but does not produce fruit.
Insufficient pollination is a big factor that can hamper the growth of bottle gourds. hand pollination using a brush.
- Why are my bottle gourd seedlings wilting?
Overwatering is the main cause for wilting. Too much water can drown your seedlings and deprive their roots of air, which leads to wilting and your seedlings might eventually die.
- Why are my Bottle gourd seeds not germinating?
Growing conditions like moisture, improper soil temperature, over watering or under watering can all be a reason why your seeds are not germinating.



Gongura / Sorrel

DAYS TO MATURITY: 50-60	GERMINATION DAYS: 5-7	HARDINESS ZONE: 3-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 10-12"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Growing

- Gongura / Sorrel seeds can be sown directly in raised beds / containers when the night temperature is above 65° F.
- Choose a container with minimum depth of 8 inches and bigger spread area. The container should have uniform drainage holes at the bottom.
- Ideal sowing medium to grow Gongura / Sorrel seeds is 2 part garden soil & 1 part any organic manure or 1 part garden soil, 1 part coco peat & 1 part Vermi compost.
- Sow about 2-3 seeds about every 6 inches and cover them completely with surrounding soil.
- If you are growing Gongura seeds on outdoor raised beds, protect them from heavy rainfall or direct sunlight by making a temporary roof plastic sheet for first few days.
- Under optimal condition Gongura seeds will germinate within the first 7 days or even earlier.
- If more than one seed has germinated per hole, cut off the smaller seedlings & keep only one seedling per hole.

Care

- **Light:** Gongura prefers partial sunlight for 3 - 4 hours but It can also tolerate full sun.
- **Watering:** Gongura prefers even moisture, water generously during hot summer days.
- **Fertilizing:** Add good quality organic manure / compost in the soil with 2:1 ratio before sowing seeds.
- Check for early signs of any insect/fungal/ any other infections. If you notice any such symptoms, treat your plant early.
- **Harvest:** Can be done 30 days after sowing seeds. Cut mature leaves using a scissor leaving the fleshy base of the plant for the next harvest. This way you can harvest Gongura 4-5 times in the intervals of 20-25 days. NOTE: Young leaves of gongura look like spinach. Leaves should be harvested while they are young. If not regularly harvested, Gongura plant can become an erect bushy shrub.

Common Problem

Seeds not germinating

Improper growing conditions like over watering/ under watering, not enough sunlight or sowing in the seeds too deep can all affect the germination process of your Gongura/Ambada seeds. Make sure you are following the sowing and growing instructions correctly to ensure successful germination.

Leaves turning yellow

Too much or too little water can turn the leaves of your Gongura / Sorrel plant yellow. Make sure you are watering your plant adequately. Water your Gongura container or raised bed every day in the form of a light shower with a watering can. You can use sprinklers for Gongura grown outdoors.

Plant drooping

Lack of sunlight often leads to drooping of your plant. Gongura needs partial sunlight for 3 - 4 hours. It can also tolerate full sun during hot summer. Make sure your plant is getting enough sunlight.



Kale

DAYS TO MATURITY: 50-60	GERMINATION DAYS: 7-14	HARDINESS ZONE: ALL	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 12-18"	SOIL PH: 6.5 – 6.8	LIGHT PREFERENCE: FULL SUN / PARTIAL

Growing

Kale is a cold-hardy veggie that can be planted in early spring/autumn. Cool weather brings out the sweet, nutty flavor of this highly nutritious plant. Small plants can be set out about 4 weeks before spring last frost.

Kale is versatile in the garden, can be growing on the ground bed, raised beds or containers.

Planting

- Kale can be set out in the garden 3 to 5 weeks before the spring last frost. It is best to provide cover protection (floating row covers) in case the temperature falls below 20 °F.
- Kale does best in full sun but tolerates partial shade.
- The soil pH should be 6.5 to 6.8 for an optimal growth and discourage disease.
- Soil needs to drain well and also be enriched for tender leaves. When planting, add fertilizer.
- If you're planting seeds, sow about 1/4 to 1/2 inch deep into well-drained, light soil. Once the seedlings germinate and after about 2 weeks, thin the seedlings so that they are spaced about 12 inches apart.
- You can harvest it until the ground freezes in winter. Kale leaves have a better flavor after a couple frosts.
- In fall, kale can be planted 6 to 8 weeks before the first frost for fall and winter harvests.

Care

- Kale is a decent feeder, regularly feed kale with a continuous-release plant food.
- Kale prefers even moisture. Water 1 to 1.5 inches of water each week.
- Mulch the soil to keep down the weeds and keep kale cool as kale won't grow in hot weather.

Pests / Diseases

- Cabbageworms are a main pest. Chewed holes on leaves are evidence of cabbageworm attack.
- Aphids, there can be easily removed by spraying insecticidal soap or neem oil.
- Flea beetles

Harvest

- You can harvest leaves at any stage, typically leaves are harvested when they are about 6 inch.
- Harvesting old leaves first from the lowest section of the plant helps in continuous growing for future harvests. Avoid clipping the terminal bud where the new leaves grow.



Kohlrabi

DAYS TO MATURITY: 60-75	GERMINATION DAYS: 7-14	HARDINESS ZONE: 3-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 10-12"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Kohlrabi (Brassica Oleracea Gongylodes Group), also called German turnip, is a biennial vegetable, a low, stout cultivar of wild cabbage. It is another cultivar of the same species as cabbage, broccoli, cauliflower, kale, Brussels sprouts and collard greens.

Planting

- Start seeds indoors about 4–5 weeks prior to the last spring frost date. Seeds germinate quickly at temperatures between 75 to 80°F. Do not plant transplant into the garden until after the last threat of frost. Transplant outside when the ground can be worked and seedlings are 3" tall. Space seedlings 6" apart and water thoroughly after transplanting.
- Kohlrabi needs full sun, and should not be planted where another Brassica has grown in at least in the previous two years, as it can lead to disease and pest problems. Kohlrabi generally does better as a fall crop, sown 6 to 8 weeks before the first autumn frost date. Autumn Kohlrabi bulbs can be allowed to get larger than 2" to 3", because cold weather seems to keep them tender (it also increases their sweetness).
- Kohlrabi must grow fast for the best quality, so give the plants all the water and nutrients they need.
- **Water:** Moderate. Keep the soil evenly moist or the bulbous stems may turn woody. This should not be an issue with this cool weather crop. Watering also depends on your local weather; don't water if it's raining, or water more frequently if it's dry. Just be sure to keep soil moist for the best crop. The best way to know how much moisture is in your soil is to feel 2" below the soil line. If it's dry, water.
Soil: Prefers well-aerated soil with a pH 6.0 - 7.0, ideal 6.4 - 6.6. Kohlrabi likes a light, rich, moisture-retentive soil, with lots of organic matter.
Containers: Yes. While kohlrabi isn't particularly well suited for container growing, it can be done in a large container. Ideally, one that is 8-12 inches deep and 12-18 inches wide. If planting multiple plants in one container, make sure they are spaced 18-24 inches apart.

Care

Feeding: Light. Low nitrogen. High potassium. High phosphorous. It's a light feeding crop and doesn't need a lot of nitrogen, but it does like calcium.

Mulching: Mulch plant base using shredded bark, grass clippings, or bark chips to prevent water loss from soil and to keep the temperature even.

Weeding, regularly: regularly, every 3 weeks. It is best to control weeds by hand weeding, as hoeing can easily damage the shallow roots and swollen stems. A mulch will also help.

Pests / Diseases

- Aphids
- Cabbage Loopers
- Root Maggots
- Flea Beetles
- Club root
- Cutworms
- Cabbage worms
- Downy Mildew
- Slugs/Snails
- Thrips

Harvest

Ripening: The edible portion of kohlrabi is not the root, but rather the round, swollen stem of the plant. Leaves are also edible. Harvest when stem swells to 3-5" and is easily visible above the soil. Cut the stem an inch below the bulb, or simply uproot the entire plant if they aren't growing too close together.



Lavender

DAYS TO MATURITY: PERENNIAL	GERMINATION DAYS: 21-30	HARDINESS ZONE: 5-8	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 3-6"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Lavender is a bushy, strong-scented perennial plant from the Mediterranean. Valued for its fragrance, medicinal properties, and beautiful bluish-purple color, *Lavandula angustifolia* is a valued plant across the world. It also attracts pollinators to the garden. In warmer regions, its gray to green foliage stays evergreen throughout the year, and the herb thrives in some of the toughest of garden conditions. The plant is not picky and will survive in a wide range of soils, even poor soil. its main requirements are lots of sun and good drainage.

Planting

- Lavender is best planted as a young plant in the spring, after the soil has warmed up to at least 60°F and the threat of frost has passed.
- If planting in the fall, choose larger, more established plants to ensure their survival through the winter.
- Lavender thrives in most soil qualities, from poor to moderately fertile.
- If you have compacted or clay soil, add some organic matter to improve drainage.
- Keep away from wet, moist areas, which could encourage root rot.
- Lavender isn't easy to grow from seed; it is recommended purchasing small starter plants from a garden nursery. Seeds may take up to three months to germinate and seedlings will need to be overwintered indoors in cool climates.

Care

- Water once or twice a week after planting until plants are established. Water mature plants every two to three weeks until buds form, then once or twice weekly until harvest.
- In colder growing areas, plants may need extra winter protection. Cover the plants with a winter mulch of evergreen boughs or straw, which will insulate from freezing winds and temperatures.
- Another option for cold areas is to grow lavender in a pot, keeping it outdoors in the summer and indoors in winter. While indoors, place the pot in a south-facing window with as much light as possible. Water sparingly, as the plant will be dormant at this time.

Pests/Diseases

- Fungal diseases, in humid climates
- Root rot due to excess water (look for yellowing leaves as a sign of overwatering)



Lettuce

DAYS TO MATURITY: 55-60	GERMINATION DAYS: 7-14	HARDINESS ZONE: 4-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 4-6"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Two things to do before sowing seeds: select a sunny spot and make sure the soil is well prepared. The soil should be loose and drain well so it's moist without staying soggy. To keep the soil fertile, feed it with composted organic matter about one week before you seed or transplant. Since the seed is so small, a well-filled seedbed is essential. Stones and large clods of dirt will inhibit germination. Lettuce does not compete well with weeds. Closely spaced plants will help control weeds.

Planting

- Recommended direct sowing as soon as the ground can be worked. You may start seeds indoors 4 to 6 weeks before your last spring frost date for an early harvest.
- Lettuce seeds can be planted when the soil temp reach above 40° F. Seeds germinate best when the temp is between 55 to 65° F.
- Seeds should be planted 1/4 – 1/2 inch deep and thinned when plants have 3 to 4 true leaves.
- Transplants should be planted close to last spring frost-free date. Water thoroughly at time of transplanting.
- Consider planting companion / barrier plants (chives or garlic) to control aphids.

Care

- Fertilize 3 weeks after transplanting. Lettuce prefers soil that is high in organic material, with plenty of compost and a steady supply of nitrogen to keep if growing fast. Use organic alfalfa meal or a slow-release fertilizer.
- Make sure the soil remains moist but is well drained.
- Lettuce will tell you when it needs water. Just look at it. If the leaves are wilting, sprinkle them anytime—even in the heat of the day to cool them off and slow down the transpiration rate.
- An organic mulch will help conserve moisture, suppress weeds, and keep soil temperatures cool throughout the warmer months.
- Weed by hand if necessary, but be careful of damaging your lettuce plants' roots; they are shallow.
- Planning your garden so that lettuce will be in the shade of taller plants, such as tomatoes or sweet corn, may reduce bolting in the heat of the summer.
- You should be able to sow additional lettuce seeds every two weeks for a continuous harvest throughout the growing season.

Pests / Diseases

- White Mold • Earwigs • Cutworms • Aphids • Cutworms • Rabbit

Harvest

- Lettuce should be harvested when full size, but just before maturity. The leaves taste best when they're still young and tender.
- Butterhead or romaine types can be harvested by removing the outer leaves, digging up the whole plant, or cutting the plant about an inch above the soil surface.
- Mature lettuce gets bitter and woody and will go bad quickly, so check your garden every day for ready-to-harvest leaves.
- It's best to harvest lettuce in the morning before leaves have been exposed to sun.



Marjoram

DAYS TO MATURITY: 65-80	GERMINATION DAYS: 10-15	HARDINESS ZONE: 9-10	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 6-12"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Marjoram is a low-growing herb, perfect as a garden edging or planted in a container or window box. Sweet and fragrant, marjoram is used both as a culinary herb and medicinally.

Planting

- Sow seed indoors about 4 to 6 weeks before last spring frost. Grow indoors until all danger of frost has passed.
- To speed up germination, soak seeds in water overnight.
- Cover seeds with a light layer of potting soil and water lightly.
- Transplant the seedlings into bigger pots when large enough to handle.
- Plant the seedlings about 12 inches apart in well-drained soil in a sunny, sheltered spot.

Care

- Water regularly, but do not overwater.
- Keep plants trimmed by cutting the leaves throughout the growing season.
- When flower buds appear, cut the plants back low to the ground to stimulate new growth.
- In southern regions, Zones 9 and above, marjoram is a perennial and can be left in the ground.
- In northern areas, the herb is an annual and may be potted up at the end of the season and placed in a sunny window indoors.

Pests/Diseases

- Aphids
- Rabbits
- Root rot

Harvest/Storage

- Harvest the young leaves throughout the growing season and use fresh or freeze for later use.
- Marjoram can also be dried and stored in an airtight container in a dark, dry area.



Moringa

DAYS TO MATURITY: 70-85	GERMINATION DAYS: 10-15	HARDINESS ZONE: 9-12	PLANTING DEPTH: 1"
TEMP PREFERENCE: >75 °F	PLANT SPACING: 36-48"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN

Growing

- Seeds can be sown in a seedling tray or directly depending on the season
- Sow seeds about 1 inch deep in the soil about 36" apart
- Seeds germinate 7 to 9 days after sowing. Harden seedlings and transplant to sunny location.

Care

- Moringa plant is Easy to grow in zones 9-12. It is fast growing & hardy.
- Moringa trees can be grown in all types of soils.
- Pruning: The plants are top pruned at 75 cm height. This results in bushy trees. If required they can be top pruned once again at 4 feet height.
- Weeding: The field should be maintained weed-free for an initial 2 months.
- Intercropping: For the first 3 years, Chilli, Eggplant and okra can be grown as intercrops.
- Plant starts producing drumstick pods within the first year of sowing.

Common Problems

- Why is my drumstick tree not growing?
The plant requires an open sunny place. It will not grow properly under the shade of any tree or a structure. Otherwise The moringa tree is not affected by any serious diseases
- Why is my moringa plant dying?
Your plant might be dying because of over - watering. If soil is saturated with water, it leads to root rot which causes wilting of leaves and your plant may eventually die. Fix your watering schedule to keep your Moringa plant healthy and happy.



Okra

DAYS TO MATURITY: 55-65	GERMINATION DAYS: 7-14	HARDINESS ZONE: 3-10	PLANTING DEPTH: 1/2" – 1"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 10-12"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN

Planting

- You can start okra seeds indoors about 3 to 4 weeks before the last spring frost date.
- In warmer areas, you can also start okra directly in the garden 3 to 4 weeks before the last spring frost date as long as you cover the plants until the weather warms up fully.
- Plant okra seeds about 1/2 to 1" deep and 12 to 18 inches apart in a row. You can soak the seeds overnight to help speed up germination. Okra prefers warm weather, select a location where the plant can receive full sun.
- Okra is adaptable to most soils type, but performs best in well-drained soil that's rich in organic matter.
- Okra plants are tall, so space out the rows 3 to 4 feet apart.

Care

- Okra prefers constant moisture and weed free. Apply a layer of mulch 2 to 3" high around the plant.
- Apply aged manure, or rich compost as a side dressing
- When the seedlings are about 3 inches tall, thin the plants so that they are 12 to 18 inches apart, if they aren't already.
- After the first harvest, remove the lower leaves to help speed up production.

Common Okra Growing Problems

- **Seeds did not germinate:** Soil is not warm enough for germination; soil temp must be at least 70°F for okra to germinate. Pre-soak seeds in water for 24 hours before sowing.
- **Plant flowers but pods do not form:** Temperature fluctuations can interfere with pollinations. Pollination will be poor if temperatures rise above 90 °F or drop below 55 °F. Too little light, water stress, and excess nitrogen also inhibit pod formation.
- **Spots on leaves; spot become circular with gray centers.** Leaf spot is a fungus disease. Plant resistant varieties. Rotate crops. Keep garden free of plant debris. Plant in well-drained soil.
- **Black water-soaked blotches on stems and leaves:** Anthracnose is a fungus disease that spreads in high humidity & rainfall. Leaves may wither and fall. Plant may die back. Remove & discard infected plants. Avoid working in garden when it is wet which can result in spread of spores.
- **Plants stunted, leaves yellow, roots decayed:** Fusarium root or stem rot is a fungal disease that favors warm soil. Remove infected plants and plant debris that harbor fungus. Rotate crops. Rotate crops regularly. Solarize the soil in late spring or summer.
- **Leaves turn yellow and then brown from the bottom up; plant loses vigor:** Root knot nematode is a microscopic eelworm that attacks roots. Rotate crops. Remove old plant debris from garden.
- **Yellow leaves and curled, shiny specks on leaves:** Aphids are tiny, oval, and yellowish to greenish pear-shaped insects that colonize on the undersides of leaves. They leave behind sticky excrement called honeydew which can turn into a black sooty mold. Use insecticidal soap.
- **Yellow leaves; tiny white winged insects around plants.** Whiteflies will congregate on the undersides of leaves and fly up when disturbed. Remove infested leaves & the whole plant if infestation is serious.
- **Holes in pods.** Corn earworm is a brown-headed caterpillar with lengthwise stripes to 2 inches long; the adult is a night-flying moth with brownish or olive wings and bright green eyes. The worm will tunnel into pods. Handpick caterpillars and destroy.
- **Deformed pods.** Southern green stink bug is a light green bug to 1/2-inch long. Bug sucks sap from leaves and pods causing them to become twisted and deformed. Spray with insecticidal soap.



Orach

DAYS TO MATURITY: 55-60	GERMINATION DAYS: 14-21	HARDINESS ZONE: 3-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 12-18"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN

Planting

- Prepare soil by adding aged manure or organic compost. Orach loves to grow in fertile soil and adding homemade compost is the best way to help your growing.
- Sow seeds in full sun about 2-3 weeks after the last frost in spring. Orach is best when planted early spring through to mid-summer and seeds can be started indoors up to 3 weeks before the last frost then hardened off.
- Sow seeds 1/2 inch deep and about 3 inches apart in seed trays using a good quality potting soil or direct in the growing bed. You will need to plant your seedlings after they get their first set of leaves so they are about 6 inches apart. Thin out your seedlings if you sowed them directly into the garden so there are 6 inches between each seedling.

Care

- Keep plants moist by mulching and regular watering and begin harvesting leaves when the plants are about 6 inches tall. Although the plant is drought tolerant, it can make the leaves taste bitter so keep the soil moist for the best-tasting leaves.
- Pinch out flower buds to encourage more leaves and sow every 3-4 weeks to have succession planting to continue harvesting. This also makes the plant product new branches and more leaves to pick.

Pests / Diseases

Orach is generally disease and garden pest resistant. Occasionally there may be aphids gathering on the underside of leaves. Use garden hose water to blast off aphids early in the morning. Keep an eye out for the larvae of lady beetles and lacewings. Though not common, you may have to pull a few of them out of the soil occasionally.

Harvest

If the orach plants are tightly spaced, harvest them all the way down to one or two inches above the soil. Once they grow back up, you're ready to harvest again for fresh salads and greens. If you thinned out your rows up to 12 inches apart early during grow period, you could now choose to thin them up to 18 inches, or you can keep them as they are. When harvesting from fully grown orach plants, wait until the plant has fully matured, then leave the older leaves in place and begin regularly harvesting the younger leaves so that the orach stays healthy and focused on new growth. Pinch off flower buds to encourage branching and promote new growth.



Oregano

DAYS TO MATURITY: 60-65	GERMINATION DAYS: 7-10	HARDINESS ZONE: 5-9	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 10-12"	SOIL PH: 6.2 – 6.8	LIGHT PREFERENCE: FULL SUN / PARTIAL

Oregano is a hardy perennial herb much loved by everyone. It is one of the easy to grow indoors and is one among the favorites list for city-dwellers to start with. If you have a windowsill or patio with 6 hours of full sun, it takes well to pot culture. Oregano is happy to grow on a windowsill in your kitchen or in a tiny plot of your garden. Little upside-down hanging bunches in your home are pretty and functional, and you can just trim a little off as you need it.

Fresh oregano is a great antibacterial agent. It has phytonutrients (thymol and carvacrol), which fight infections such as staph. It's loaded with antioxidants that help prevent cell damage, and it's an excellent source of fiber, vitamin K, manganese, iron, vitamin E, tryptophan and calcium.

Dried oregano is also healthful (with similar benefits to fresh), but it needs to be handled carefully. Store it in a clean, dry, glass container.

Planting

- Oregano loves the sun, choose a location that received at least 6 to 8 hours of full sun light. The more sunlight falling on oregano plant the stronger the flavor!
- When starting indoors, plant the seeds 6 to 8 weeks before the last spring frost.
- Oregano can easily be started from seeds, though you can also use cuttings from an established plant.
- Plant the seeds/cuttings in well-drained soil any time after the last spring frost. The soil should be around 70 °F.
- Thin plants about 8 to 10 inches apart. The plants will grow 1 to 2 feet tall and spread about 18 inches.
- Oregano makes a good companion plant for any vegetable in the garden.

Care

- Allow oregano plants to grow to about 4 inches tall and then pinch or trim lightly to encourage a denser and bushier plant.
- Regular trimming will not only cause the plant to branch again, but also avoid legginess.
- Oregano doesn't need quite as much water as most herbs. As the amount of watering depends on many variables, just water when the soil feels dry to the touch. Remember that it's better to water thoroughly and less often.
- If you have a container, water until the water comes out of the drainage holes in the bottom of the container.
- To ensure the best-quality plants, thin out plants that are 3 or 4 years old in the early spring. Oregano is self-seeding, so the plants will easily grow back.
- You can divide the plants in late spring if you want to put one indoors.

Pests / Diseases

- Root and stem rots
- Aphids
- Spider mites

Harvest

- Harvest the leaves as you need them. The most flavor-filled leaves are found right before the flowers bloom.



Peppers (HOT)

DAYS TO MATURITY: 75-90	GERMINATION DAYS: 7-14	HARDINESS ZONE: 3-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >75 °F	PLANT SPACING: 12-18"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN

Planting

- Start indoors about 6 - 8 weeks before the last spring frost. Sow seeds about 1/2" deep in seed-starting mix, space at least 1 inch apart.
- The soil temperature must be at least 70°F for seed germination. Use a heat pad under the seed tray, if necessary.
Note: Growing hot pepper from seeds can be fun and sometimes frustrating as the germination can be slow and irregular even when grown under optimal conditions. Some varieties (Mundu, Guntur Sannam, Kanthari, etc.) may take up to 6 weeks or little longer to germinate, Be Patient!
- Place the seedlings in warm and under bright light for at least 10 to 16 hours per day.
- Begin to harden off plants about 10 days before transplanting outdoors. Plant out only after the last frost date has passed.
- Once nighttime temperatures reach at least 65°F, transplant seedlings outdoors, space them 18" to 24" apart.
- Pepper plants require full sun to produce the largest and healthiest fruit. Choose a spot where they will get at least six hours of direct sunshine every day. Set plants at least 16 inches apart.
- Add aged manure or compost to the soil about 2 weeks before planting in your garden.
- Avoid planting peppers in places where you've recently grown other members of the nightshade family (such as tomatoes, potatoes, or eggplants) as this can expose peppers to disease.

Care

- Keep plants upright by tying them to a cane or stake. Larger plants may need several canes.
- After the seedlings have produced their first six leaves, prune the above second set. This encourages branching resulting in more fruits.
- Once they start producing flower buds, begin feeding regularly. Use a tomato fertilizer or others high in potassium. Keep plants well-watered, as drying out can stress the plant and result in blossom end rot or leaf curl.

Pests / Diseases

- **Southern blight:** Sudden wilting of leaves; yellowing foliage; browning stem above and below soil; browning branches; stem may be covered with fan-like mycelial mat.
- **Mosaic:** Alternating light & green areas or mosaic patterns on the leaves; leaves distorted & curled; slow plant growth. **Control / Prevention:** Remove weeds around crop; use reflective mulches to deter aphids from plants.
- **Aphids:** Yellow leaves; distorted flowers/fruit; sticky "honeydew"; sooty, black mold that forms on honeydew; large presence of ants on plants. **Control / Prevention:** Grow companion plants to repel aphids away (basil, rosemary, strong-scented plants); knock aphids off plants with water spray, apply insecticidal soap; put banana or orange peel around plants; wipe leaves with a 1-2% solution of liquid dish soap, water every 2-3 days for 2 weeks.
- **Leafminers:** Thin, white, winding trails on leaves; heavy mining can result in white blotches on leaves and leaves dropping from the plant prematurely; early infestation can cause fruit yield to be reduced. **Control / Prevention:** Check transplants for signs of leafminer damage prior to planting; remove plants from soil immediately after harvest; only use insecticides when leafminer damage has been identified as unnecessary spraying will also reduce populations of their natural enemies.
- **Flea Beetles:** Numerous tiny holes in leaves (as if they had been hit by a tiny shotgun). **Control / Prevention:** Use row covers to physically block flea beetles; mulch heavily; add native plants to attract beneficial insect predators.
- **Spider mites:** Spraying plants with a strong jet of water can help reduce buildup of spider mite populations; if mites become problematic apply insecticidal soap to plants.



Purslane

DAYS TO MATURITY: 45-60	GERMINATION DAYS: 5-10	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 6"	SOIL PH: 6.0 – 7.5	LIGHT PREFERENCE: FULL SUN

Purslane is a leafy vegetable that most likely originated in Mediterranean region. It is widely eaten throughout Europe, Asia, the Middle East, and Africa. It is an annual succulent with a slightly sour and salty taste, making it an interesting addition to the plate and palate. The entire plant, including the leaves, stems, flowers, and seeds are edible and have been used for thousands of years in different variations.

Seed Description

Tiny purslane seeds develop inside seedpods in spring and early summer. The pods grow close to the stem in a cone shape. When ripe, the top of the cone breaks off and the seeds scatter naturally. Purslane seeds are slightly oval, black and wrinkled. If you look closely, you can see a white marking on one end of the seed. To collect purslane seeds, cut the seedpods from the plants before the seeds scatter.

Seed Germination

Purslane seeds take seven to 10 days to germinate between 70 and 90 degrees Fahrenheit. You can sow seeds 1/4 to 1/2 inches deep directly in the garden. Spring is the best time to plant purslane from seed. In areas with even mild frost in winter, wait until the last frost date has passed and the soil has warmed to at least 70 F before planting. In mild, frost-free climates, you can plant in late winter as long as the soil temperature is high enough for germination to occur.

Care

Fertilizing: Purslane can grow successfully without fertilizer but applying a water-soluble 20-20-20 fertilizer to your purslane weekly encourages healthy growth and flower production. A solution of 2 tablespoons of 20-20-20 dissolved in 1 gallon of water provides enough fertilizer to treat 4 square feet of garden bed. Check the package instructions because rates vary by brand.

Pests / Diseases

Purslane is a vigorous plant rarely affected by diseases or pests except for purslane sawfly and the portulaca leaf-mining weevil. The larval form of purslane sawfly looks like a caterpillar and can be picked off of the plants by hand. Severe infestations of these pests can kill the purslane. Adult sawflies emerge from the soil in late spring and lay several batches of eggs during the summer. Portulaca leaf-mining weevils are grub like in appearance and burrow into the leaves of purslane, visible below the leaf's surface. Checking your plants regularly and removing pests or infested leaves when you see them is the best way to control these pests. **Natural ways of Insect Control:** Strong spray of water, add 2 - 4 drops of oil of neem oil in a gallon water and spray, add 1 drop of natural soap and 1 teaspoon of vegetable oil in a gallon water and spray.

Harvest

The only conditions that purslane does not thrive in are heavy, wet or waterlogged soil and freezing conditions during the growing season. Purslane grows well in rocky soil, is drought tolerant can withstand full sun or deep shade and grows voraciously in loamy garden soil. Harvest whole plants by pulling them from the soil during spring for use as a fresh or cooked green vegetable. You can eat the leaves and stems by picking them individually from the plant throughout the growing season.



Radish

DAYS TO MATURITY: 30-35	GERMINATION DAYS: 5-10	HARDINESS ZONE: 2-11	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 2-3"	SOIL PH: 6.5 – 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Radishes are a hardy, very easy-to-grow root vegetable that can be planted multiple times in a growing season. Plus, radishes can be harvested as soon as three weeks after planting! Radish seeds can be planted in both the spring and the fall, but growing should be suspended in the height of summer, when temperatures are typically too hot. (Hot temperatures may cause radishes to bolt, making them essentially useless)

Planting

- Plant in a sunny spot. If radishes are planted in too much shade—or even where neighboring vegetable plants shade them they will put all their energy into producing larger leaves.
- Like carrots, radish plants are primarily grown for their roots. Though the soil needs to be rich in organic matter, it should not be compacted. If your soil is more clay-like, mix in some sand to loosen it and improve drainage.
- If your soil isn't rich in organic matter, incorporate a few inches of aged compost or all-purpose fertilizer (see packaging for amount) into the planting site as soon as the soil is workable.
- Till your garden bed to remove any rocks or dirt clods before planting.
- For a spring planting, sow seeds 4 to 6 weeks before the last spring frost date.
- It is recommended to plant radish seeds directly in the garden so as not to disturb their roots. Sow seeds about ½ to 1 inch deep and 1 inch apart in rows 12 inches apart.
- For continuous harvest plant another round of seeds every 10 – 14 days until the weather is still cool.
- For fall planting sow seeds in late summer or early fall at least 4–6 weeks before the first fall frost.

Care

- Thin radishes to about 2 inches apart when the plants are a week old. Crowded plants do not grow well.
- Keep soil evenly moist but not waterlogged. Soggy soils result in root rot
- Apply a thin layer of mulch around the radishes can help retain moisture in dry conditions.

Pests / Diseases

- Cabbage Root Maggot
- Club root

Harvest

- Radishes will be ready to harvest quite rapidly, as soon as three weeks after planting for some varieties.
- Harvest when roots are approximately 1 inch in diameter at the soil surface.
- Do not leave radishes in the ground long after their mature stage.



Radicchio

DAYS TO MATURITY: 60-80	GERMINATION DAYS: 5-10	HARDINESS ZONE: 3-11	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 10-12"	SOIL PH: 6.0 – 7.5	LIGHT PREFERENCE: FULL SUN

Radicchio is the deliciously bitter and tender head, or heart, of the chicory plant. Just like cabbage, cauliflower, or iceberg lettuce, the radicchio head is safely wrapped in a leafy protective layer that simply needs peeling back when harvested. Like other chicory, radicchio thrives in cooler gardens, especially when sown mid-summer so maturing plants may benefit from a few light autumn frosts before harvesting.

Planting

Radicchio prefers soil conditions similar to lettuce: loose, well-drained soil with a higher than average fertility, especially nitrogen. Spring planting can usually be grown with transplants set out about 3 to 4 weeks before the last frost date. For fall planting, sow directly or set out transplants in late July or very early August timeframe. Sow about 3-4 seeds every 12 inches apart in rows that are 16" apart. Set transplants at same depth they were growing. Provide a constant source of water. This variety is cold hardy and can survive temperatures in 20s.

Pests / Diseases

Nothing much bothers these. You might have some problems with wire worms or root maggots in the early spring, but these can be controlled by using paper collars.

Harvest

Radicchio is ready for harvest about 80 days from sowing. Similar to cabbage, cauliflower, and iceberg lettuce, radicchio is the head of the chicory plant protected by leafy layers that can be simply peeled back and composted. Unlike other chicories, outer radicchio greens are not the tenders. Plants can be carefully cut at the base leaving roots intact for perennial growth, but following harvests will be smaller and bitter. Radicchio tastes and performs best as an annual.



Spinach (Red / Green Malabar)

DAYS TO MATURITY: 60-75	GERMINATION DAYS: 10-14	HARDINESS ZONE: 3-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 8-10"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN

Malabar spinach belongs to Basellaceae family, not the spinach family. The taste is similar to spinach, however this crop is a very warm-season crop unlike standard spinach grown in the Northeastern US. This crop is native to tropical Asia and is extremely heat tolerant. Malabar spinach plants grow in Asia and throughout the tropics, primarily in the moist lowlands. While the dark green leaves resemble those of spinach, this is a vine type of plant that thrives in hot temps, even exceeding 90° F. (32° C.) Cool temperatures cause Malabar spinach to creep. It is grown as an annual, but grows like a perennial in regions that are frost free.

This is a vine type spinach with vines that can grow longer than 10 feet. With bright green leaves and stunning red/purple stems this edible is often grown as an ornamental. The most beautiful vining edible green you can grow! Red Malabar spinach is a splendid edible ornamental, and it is extremely heat tolerant, providing gobs of nutritious greens while others have succumbed to the heat.

Growing

Growing

- Malabar spinach can be grown from either seeds or cuttings. If the stems are too tough to eat when pruning, simply put them back into the soil where they will re-root.
- Scarify the seed with a file, sandpaper or even a knife to speed germination, which will take three weeks or longer at temperatures between 65 °F-75 °F. Direct sow Malabar spinach seeds in USDA zone 7 or warmer, two to three weeks after the last frost date.
- If you live in a chillier zone, start the seeds indoors at about six weeks before the last frost. Wait to transplant until the soil has warmed and there is no chance of frost.
- Transplant the seedlings spaced about a foot apart. If you want to spread this plant quickly around your garden, or share with friends Malabar roots easily. New plants will sprout up wherever the stem touch moist soil. Also, propagates easily from clippings which root readily in water.

Care

- Malabar spinach will grow well in a variety of soil conditions but prefers a moist fertile soil with plenty of organic matter and a soil pH of between 6.5 and 6.8
- Malabar spinach plants can be grown in part shade, which increases the leaf size, but it much prefers hot, humid and full sun exposures.
- Malabar spinach also needs constant moisture to prevent the blossoming, which will turn the leaves bitter — ideally an area with a warm, rainy climate for optimal Malabar spinach care and growth.
- The vine should have trellis and two plants are sufficient for most families through the summer and fall growing season. It can even be grown up the same trellis as peas, truly utilizing the garden space. Grown as an ornamental edible, the vines can be trained to climb over doorways. To prune Malabar spinach, simply cut the thick, fleshy leaves while retaining some stem.

Pests / Diseases

The Malabar spinach is fairly disease resistant. Keep an eye on slugs and snails, in cool humid climates there may be several slugs on every square feet of your garden.



Thyme

DAYS TO MATURITY: PERENNIAL	GERMINATION DAYS: 7-14	HARDINESS ZONE: 5-9	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: >70 °F	PLANT SPACING: 3-6"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN

Thyme is a hardy woody perennial that loves hot, dry conditions. A wonderful herb with a pleasant, pungent, clover flavor. Originally from the Mediterranean area, this herb is drought-friendly so it doesn't have high watering needs. It is also pollinator-friendly! Let some thyme plants flower, since the herb attracts the bees.

Planting

- Thyme thrives in full sun and loves heat. If you are growing in a pot indoors, plant near a sunny window.
- Soil needs to drain well so there aren't wet feet
- In early spring, fertilize with organic matter, like compost, but not much soil amendment is necessary.
- It's hard to grow thyme from seeds because of slow, uneven germination. It's easier to grow from cuttings.
- For a head start, plant the cuttings indoors 6 to 10 weeks before the last spring frost.
- Plant cuttings or young thyme plants any time after the ground temperature reaches 70°F. This is usually 2 to 3 weeks before the last spring frost in well-drained soil about 9 inches apart.
- Space young plants 12 to 24 inches apart, depending upon the specific variety.
- The plants should grow 6 to 12 inches in height.

Care

- Water deeply only when the soil is completely dry.
- Prune the plants back in the spring and summer to contain the growth.
- If you have cold winters, remember to lightly mulch around the plants after the ground freezes.
- Three to four-year-old plants need to be divided or replaced because older plants are woody and the leaves less flavorful.
- You can take some cuttings and plant them indoors in pots, too.

Pests/Diseases

- Gray mold
- Root rot

Harvest/Storage

- Harvest thyme just before the plant flowers by cutting off the top five to six inches of growth. Leave the tough, woody parts.
- It's best to harvest thyme in morning after the dew has dried. Clean leaves should not be washed, because it removes some of the essential oils.
- Two or more crops may be gathered during the season.
- Or, if you keep trimming your thyme plant, it will keep growing (and also keep a compact shape). But always leave at least five inches of growth so plant will continue to thrive.
- Trim thyme whenever it gets leggy.
- Fresh thyme should be stored refrigerated and wrapped lightly in plastic; it should last one to two weeks .



Spinach

DAYS TO MATURITY: 30 - 50	GERMINATION DAYS: 7-14	HARDINESS ZONE: 3-9	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: 40 - 70 °F	PLANT SPACING: 3-6"	SOIL PH: 6.0 – 7.0	LIGHT PREFERENCE: FULL SUN / PARTIAL

Spinach is one of the fastest, most tender, and delicious "cut and come again" varieties in the home garden. A quickly maturing leafy vegetable, spinach is able to be sown in spring, summer, and fall in many cooler gardens for year-round harvests. Similar to other leafy greens, spinach thrives from frequent harvesting and is known to vigorously regrow cut leaves in just days.

Planting

- It is recommended to directly sow outside, transplanting seedlings are difficult since they are too tender.
- Select a planting site with full sun (or partial sun, at least) and well-drained soil.
- Prepare the garden soil with aged manure about a week before planting.
- Sow seeds ½-inch to 1-inch deep, covering lightly with soil. Water the new seedlings well in the spring.
- Seeds germinates at cooler temperature not exceeding 70 °F.
- Successive plantings should be made every two weeks during early spring.

Care

- Spinach are not heavy feeders, fertilize only if necessary if the growth rate is slow.
- When seedlings sprout to about two inches, thin them to 3-4 inches apart.
- Beyond thinning, no cultivation is necessary. Roots are shallow and easily damaged.
- Keep soil moist with mulching.
- Water regularly.

Pests/Diseases

Leaf Miners, Bolting, Mosaic Virus/Blight, Downy Mildew

Harvest

Harvest when leaves are young and tender. Older and larger leaves become bitter upon maturity. The whole plant can be harvested at once, and cut at the base, or leaves may be picked off plants one layer at a time, giving inner layers more time to develop.



Tomato

DAYS TO MATURITY: 80 - 90	GERMINATION DAYS: 7-14	HARDINESS ZONE: 5-9	PLANTING DEPTH: 1/4"
TEMP PREFERENCE: > 75 °F	PLANT SPACING: 18-24"	SOIL PH: 6.2 – 6.8	LIGHT PREFERENCE: FULL SUN

Planting

- Select a site with **full sun**. For northern regions, it is VERY important that your site receives at least 6 hours of daily sunlight.
- Tomatoes will grow in many different soil types, but it needs to be well drained. They prefer a slightly acid soil with a pH of 6.2 to 6.8.
- Start seeds indoors 6 to 8 weeks before the average last spring frost date.
- Two weeks before planting tomato plants outdoors, dig into soil and mix in aged manure or compost.
- Harden off seedlings for a week before planting in the garden. Set young plants outdoors in the shade for a couple of hours the first day, gradually increasing the amount of time the plants are outside each day to include some direct sunlight.
- Place tomato stakes / cages in the soil at the time of planting to avoid damaging roots later on.

Transplants

- Apply fertilizer such as 5-10-5, or 10-10-10 per package instructions. Do not apply high nitrogen fertilizers, as they promote luxurious foliage growth but will delay flowering and fruiting.
- Space tomato transplants at least 2 feet apart.
- Plant the root ball deep enough so that the lowest leaves are just above the surface of the soil.
- If transplants are leggy, bury up to 2/3 of the plant including lowest leaves. Tomato stems have the ability to grow roots from the buried stems.
- Be sure to water the transplant thoroughly to establish good root/soil contact and prevent wilting.
- Newly set transplants may need to be shaded for the first week or so to prevent excessive drying of the leaves.

Care

Watering

- Water generously the first few days that the tomato seedlings or transplants are in the ground.
- Water well throughout the growing season, about 2 inches (about 1.2 gallons) per week during the summer.
- Water in the early morning. This gives plant the moisture it needs to make it through a hot day. Avoid watering late afternoon or evening.
- Mulch after transplanting to retain moisture and to control weeds. Mulch also keeps soil from splashing the lower tomato leaves.

Fertilizing

- Watering in with a starter fertilizer solution will help get the roots off to a good start.
- Side dress plants with fertilizer or compost every two weeks starting when fruits are about 1 inch in diameter.
- If staking, use soft string or old nylon stocking to secure the tomato stem to the stake.
- It is essential to remove the suckers (side stems) by pinching them off just beyond the first two leaves.

Pests / Diseases

- **Pests:** Aphids | Flea Beetles | Tomato Hornworm | Whiteflies
- **Diseases:** Blossom-End Rot | Late Blight | Mosaic Virus | Cracking



Turnip

DAYS TO MATURITY: 50 - 60	GERMINATION DAYS: 7-14	HARDINESS ZONE: 3-12	PLANTING DEPTH: 1/2"
TEMP PREFERENCE: > 70 °F	PLANT SPACING: 10-12"	SOIL PH: 6.0 – 7.5	LIGHT PREFERENCE: FULL SUN / PARTIAL

Growing

Directly sow seeds 3 weeks before the last spring frost. In southern climates with warm winters, you can sow in early autumn for late fall harvest or allow your crop to overwinter. Generally, turnips prefer cool-to-temperate conditions ranging from 40 – 75 °F. Plant seeds 1/2" deep, 2" apart and with 12 - 18" spaced in between rows. Once these plants have grown about 4" tall, thin the young seedlings so they are about 6" apart. Soil must be fertile and well-drained with a pH level of 6.0-7.5. Loosen the soil bed to about 12" deep prior to planting, this heirloom variety grows with hardy roots. Germination will take 3-10 days. Turnips need 1" of water each week and prefer a layer of mulch to help retain moisture. **Note:** Temperatures above 75 °F will cause turnips to bolt and go to seed before they're fully matured.

Care

- Keep the beds weed free, while pulling the weeds by hand be careful not to disturb the root of young turnips.
- Mulch to retain moisture and suppress weeds.
- Turnips do not need much care, but consistent soil moisture is important. Keep soil lightly moist, watering at a rate of 1 inch per week to prevent the roots from becoming tough and bitter.

Harvest

Harvest Turnips once the roots have grown 4" wide, smaller bulb size are tender and more flavorful. Harvest root vegetables by lifting up the roots with a gardening fork or by digging up the entire plant. You can also harvest the green leaves once they've grown about 3" wide. Don't cut more than 3 leaves off at a time since it slows the root development.