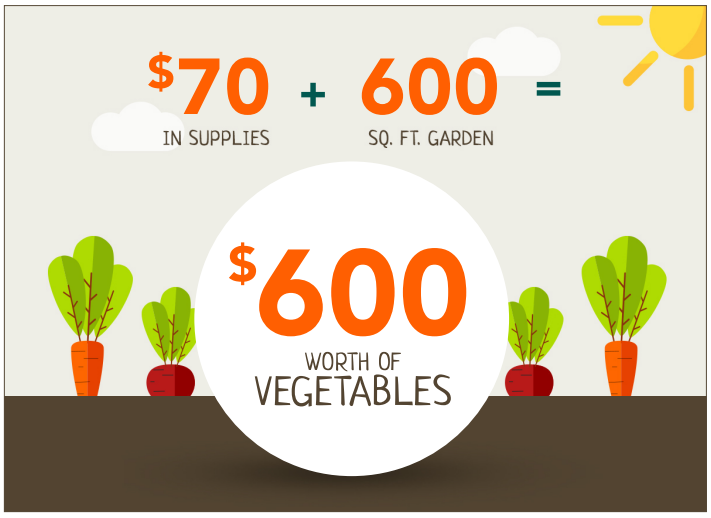
THE COMPLETE VEGETABLE PLANTING GUIDE *for* BEGINNERS

THERE'S SOMETHING BOTH ROMANTIC AND PRAGMATIC ABOUT STARTING YOUR OWN ORGANIC VEGETABLE GARDEN. After all, for every $70 invested in gardening supplies, seeds, plants, and tools in a 600 square foot garden, a homeowner can expect to produce a whopping $600 worth of vegetables. That's a $530 food return on investment!

If you're interested in growing vegetables in your yard, you're in good company: 42 million people nationwide are growing something edible, whether it's a simple pot of herbs or an intricate garden filled with fruits, vegetables, and flowers. Whether you have a sunny windowsill or a large acreage, you can grow abundant fruits, vegetables, and herbs to fill your table and pantry this year. All it takes is a bit of preparation, a modest investment in supplies, and a commitment to keeping up with your garden.



To help you out, we've created a guide with the best, tried-and-true organic gardening tips.
Are you ready? Let's get growing!

Choosing a Location for Your Organic Vegetable Garden

When it comes to organic gardening, choosing the best possible location for your vegetable garden should be your first concern. Vegetables need the following in order to grow well:

Light — Most vegetables need full sunlight, which gardeners define as six or more hours of bright, direct sunlight each day. Some veggies can grow well in partial sun or shade, but having too much shade limits your choices of what you can plant.

And why limit your garden to your backyard? Unless your homeowner association or town council prohibits growing vegetables or fruits in the front yard, consider using it if that's the best spot for your vegetable garden.

Proximity to the kitchen — Most gardening advice books forget this tidbit, but you'll find that the farther your garden is from the house, and especially your kitchen, the less likely you'll be to tend it. Why? It's simple: out of sight, out of mind. When you can easily step out your back door and grab a few tomatoes for a salad, you'll be much more likely to enjoy your garden. Try to find a space close to your home for your vegetable garden.

Water source — Vegetables, herbs and fruit plants need plenty of water: at least one inch of water per week. Rainwater should supply much of the moisture your garden needs, but there are a few tricks you can add along the way. For example, you can consider adding mulch to improve moisture retention in your soil. You'll also have to supplement nature's showers with some water from your garden hose, so it's helpful to have a source of water that's close to your garden.

Trees and buildings — Depending on the time of year when you plant a vegetable garden, you may have a great place picked out, only to find that as the maple and oak trees in your neighbor's yard fill in their leaves, your sunny area turns to dappled shade. Place your garden away from buildings, fences, houses, sheds and trees that shade it during prime daylight hours.

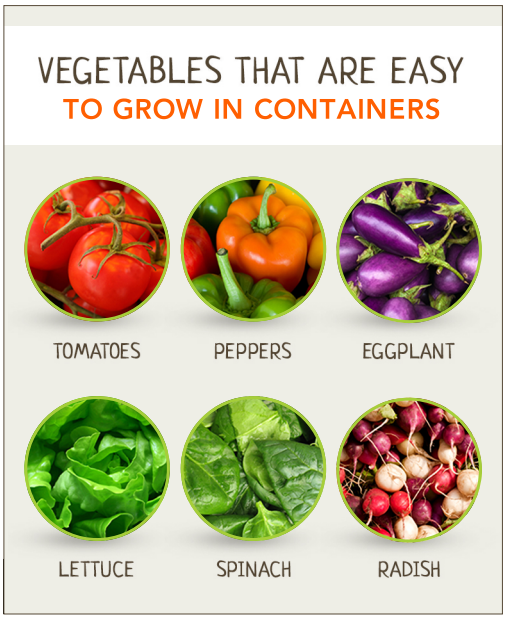
Container Gardens for Tough Areas

What if there's no patch of soil suitable for your organic vegetable garden? Do you have a sunny patio, balcony, or walkway? If so, then you can still plant vegetables. You'll just have to use large containers. Many vegetables and even fruits — such as melons and strawberries — can be successfully grown in large containers. The trick involves planting the best varieties for containers and choosing containers large enough to accommodate your vegetables.

Large tubs or planters on wheels make it easy to shift containers around to catch the sun. Most vegetables prefer large, deep containers of at least several gallons. You can grow herbs, lettuce, spinach, and strawberries in shallow containers and window boxes.

Vegetables that are easy to grow in containers include tomatoes, peppers, eggplant, lettuce, spinach, and radish.

Cucumber, squash, and zucchini can also grow in containers, but make sure you add a tomato cage — a metal support frame that gives them plenty of sturdy areas to climb on. Think "up" instead of "out" for a small space garden. Add clever trellis to allow plants to move up rather than spread out.



How Big Should Your Garden Be?

Not all gardens have to be large. Fortunately, you can grow a surprising bounty of food from a small garden. According to the Farmer's Almanac, a garden row 10' x 10' can yield enough vegetables to feed a family of four for one season.

You can grow more in a small space by using vertical gardening techniques, such as trellises, fences and other supports to encourage plants to grow upwards. The shade created underneath a squash, pea or bean trellis can be used to plant lettuce, for instance, and extend the harvest season into the warmer days of summer. You'll also simultaneously grow twice as much from the same square foot. As you learn more about gardening, you'll find more ways to increase yields without increasing your garden space.

Types of Vegetable Garden Designs

Now that you've got the basics down, what kind of vegetable garden is right for you? There are many kinds of vegetable gardens. Here's a run-down of the most popular ones:

In-ground or row plantings — Just as the name implies, these vegetable gardens are planted directly into the ground. The soil is dug or tilled with a machine such as a rototiller, and the vegetables are planted directly into the garden plot.

Raised beds — A raised bed uses wood, cement blocks or some other material to create a raised garden area. Soil and compost are added to the bed, creating a space free from weeds and grass.

Container gardens — Vegetable gardens grown in large tubs, planters, containers or pots.

Straw bale gardening — Straw bale vegetable gardens are ideal for people with limited garden areas and poor soil. Bales of clean, weed-free straw are used for the garden beds. After the straw is conditioned with water, vegetables are planted into the straw. The straw breaks down and nourishes the vegetables over time.

Hugelkultur — Hugelkultur uses old logs buried in the dirt to create raised garden beds. Like straw bales, as the log decomposes, it makes a nutrient-dense growing material.

Hydroponic gardens — Hydroponic gardens use water and nutrient solutions instead of soil to grow plants. Urban farmers enjoy hydroponic gardens because they don't have to fuss with messy soil inside city apartments.

Each garden type has a lot of information, but we'll take a look at general organic vegetable gardening tips that are applicable to both in-ground cultivation and raised-bed vegetable gardens.

Great Vegetables Start With Healthy Soil

No matter where or how you choose to plant a vegetable garden, the best gardens grow from healthy soil. Unless you're building a hydroponic vegetable garden (which doesn't use soil), it's important to pay close attention to your garden soil.

Your garden soil isn't just dirt. It's a little microcosm of air, rock and mineral particles, decaying plant material, water, insects, and microorganisms. All of these things work together in harmony to create the soil you see every time you walk across your yard. Depending on where you live and how deep the top soil is, your garden's nutrient-rich soil may be several inches or a foot or more on the top layer. Below that lies clay, rock, and hardpan.

Vegetables grow by extending their roots down into the soil, digging deep to find air, nutrients, and water inside the earth. Roots aid in the transport of nutrient-rich water from the earth up through the xylem tubes inside the plant's stem, all the way to the leaves. That's where the magic happens, as chlorophyll converts sunlight, water, and nutrients into glucose to feed the plant. As the plant grows, it creates leaves, fruit, or roots that feed you.

Therefore, without good soil, your plants won't be healthy. Soil problems and deficiencies can result in leaf, stem and root problems, poor yields, and poor fruit or vegetable quality. Here are the basics you need to know about garden soil for vegetable plants:

- **Most vegetables prefer soil pH to be between 6.0 and 7.0, or slightly acidic to neutral.**
- **Plow, spade or till ground soil to a depth of about eight inches for most vegetable crops.**
- **Add as much organic compost as you want to your garden.**
- **Have your soil professionally tested before adding any other amendments, such as lime, to the soil.**

Commercial Soil Tests

To make sure your soil is good enough for your plants, consider having your soil tested by your local Cooperative Extension office before planting vegetables in the ground. They'll either provide you with a soil test kit and instructions to take your samples, or you can follow the simple instructions below:

1. Mark the area where you intend to plant your vegetable garden. You can hammer stakes into the ground and stretch string around the area to designate the garden plot, or simply use rocks or something else to mark it off.

2. Find four clean plastic or glass containers with lids and a waterproof marker.

3. Mark each container with a corner of the grid you marked out. Number each corner, so you know where the soil came from.

4. With a spade or shovel, dig about half a cup of soil from each area and place it into a separate container.

5. Bring it to your local Cooperative Extension office for testing.

Be sure to tell the Extension Agent what you wish to plant in the soil you want to test. Soil analysis includes the soil pH as well as nutrient content in the soil. The agent will provide recommendations based on what you want to plant in your garden. The Agent's recommendations for a vegetable garden will be different than if you say you want to plant flowers or a lawn, for example.

There's a small fee to test soil, but it's well worth it for the serious organic vegetable gardener. If you don't get your soil tested annually, you could be pouring money down the drain by adding costly organic amendments you're not sure your garden needs. Worse, you could be accidently unbalancing the soil nutrient profile or pH by dumping too much of a good thing into the soil. Use the test results and recommendations to guide you to your next steps.

Soil for Containers and Raised Beds

If you're planting a raised-bed vegetable garden or growing vegetables in containers, the easiest way to start your garden is to purchase bagged organic garden soil at your local nursery and garden center. Mix it with bagged compost and fill your beds with a ratio of 75% soil to 25% compost. Make sure you purchase garden soil, not top soil. Plain top soil lacks many of the nutrients that vegetables need to grow.

How to Start a Compost Pile

No organic garden would be complete without a compost pile. Compost is nature's great recycling tool, a way to take kitchen and garden scraps and transform them into nutritious materials your plants can use. It's safe, effective, and a wonderful way to boost your garden soil while keeping excess trash out of landfills.

A compost pile is simply a container area where kitchen scraps, grass clippings and tree leaves are allowed to "marinate" and decompose. Water and heat activate naturally occurring microorganisms inside the compost pile, and earthworms and other insects munch on the organisms. They excrete nutrients during their digestion. Worm castings inside compost piles are beneficial and very healthy for your plants!

To start a compost pile, all you need is an area in your yard for the pile itself. There are plenty of ways to build a compost pile. You can take an old plastic trash can and drill a few holes for aeration along the sides, then pile your vegetable scraps, grass clippings and leaves inside. Put the lid on and roll it around every few weeks to shake it up. Keep the lid off to let rainwater inside to marinate and moisten the compost.

Compost tumblers are another option. They are commercial compost bins that look like cement mixers on a frame. Plant material goes into the barrel, and a crank or wheel turns the barrel to tumble the mixture. In about two months, you'll have great compost.

So what exactly can you put into your compost pile? Use this list to get started:

- **Vegetable peels such as potato & carrot peels**
- **Apple cores**
- **Orange rinds, grapefruit rinds**
- **Lettuce, spinach and other leaves that are past the edible stage**
- **Tops from carrots, radishes, beets & turnips**
- **Coffee grounds**
- **Tea bags**
- **Grass clippings**
- **Raked autumn leaves**
- **Eggshells (rinse them out and smash them up before adding to the pile)**

Safe animal manures to use in the garden or add to the compost pile include cow, horse, rabbit and goat manure. Pig manure falls into the same category as dog or cat feces. Chicken manure, while nutritious, can actually burn your garden plants if you're not careful. Beginning gardeners may wish to avoid it until you're used to composting and working with manures.

After you've built a compost bin or purchased a tumbler, begin layering materials into the compost pile. Starter compost piles — with a layer of grass clippings and brown matter such as autumn leaves — are the most easily balanced and the quickest to break down. Just keep piling your scraps on the top. Rain and nature take care of the rest.

After a few months, dig into the bottom of the pile. You may see worms, but that shows your compost pile is healthy! Under all the layered plant material, you'll also find a layer of good, rich, healthy compost. It should look like crumbled chocolate cake mix when it's ready. Spade that into your garden soil and mix it into your containers and raised beds. Don't worry if a worm or two finds its way into your garden beds along with the compost. Worms add health to the soil, and they don't hurt your plants.

The Tools You Need for Organic Gardening

Tools are an important part of the success of your garden. Buy the best tools you can afford, and always rinse them or clean them with a rag after use. Store them in a shed, garage or another enclosed space out of the rain in between use.

For any size garden, you'll need:

Hand trowel — Some have straight handles and some have curved handles. Some have extra cushioning on the handle or special grips. Look for one with a brightly colored handle, because there's nothing worse than working in your garden, dropping your trowel, and hunting for a green - or brown - handled tool among the plants.

Pruners — Pruners or pruning shears are useful for any gardening project, but especially for clipping up old vegetable plants at the end of the season. Anvil and bypass pruners are the two most common types for general garden use. Both will serve you well. Look for pruners with detachable blades, since the blades dull over time and should be removed and sharpened or replaced.

Gloves — Sturdy gardening gloves are a must to keep your hands clean and protect them from cuts, insect bites, and more. Cloth gloves are appropriate all-purpose gloves. Rubber or nitrile gloves offer moisture protection. Suede or leather garden gloves are good for working with thorny plants like blackberries, raspberries and roses. If you're just starting out, a suede pair or a cloth pair will work fine.

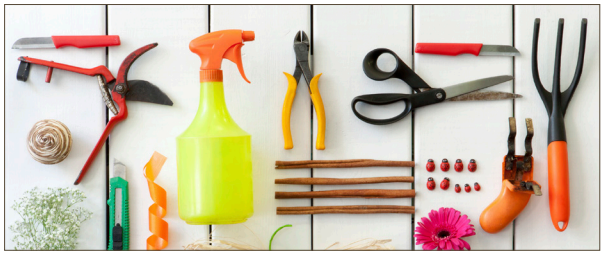
Shovel — A long-handled garden shovel makes moving soil or digging holes a breeze.

Spade — A spade has a squared end and is useful when cutting turf and turning the soil for a new garden.

Pitchfork — The tines on a pitchfork are good for working with grass, straw bales and compost piles.

Hose with adjustable nozzle — A garden hose that reaches all of the garden beds is a must for your new garden. An adjustable spray nozzle allows you to adjust the flow of water based on your plant and the best time to water your vegetable garden.

Wheelbarrow — A wheelbarrow makes everything easier in the garden. You can cart bags of soil and compost out to the garden, or use it in the fall to take your vegetable plants to the compost pile or tray.



Other items you might need, depending on what you plant, include:

Plant markers — You can purchase plastic markers or make your own plant markers from painted garden rocks, cut up Venetian blinds, old Popsicle sticks and more. They're used to mark down what you've planted along with their locations.

Plant cages or stakes — Some vegetables, such as tomatoes, benefit from the extra support of a plant cage or stake.

Twine — Twine can be stretched between two stakes to make a trellis for peas or beans, to tie up tomato branches and more. Jute twine is biodegradable.

What Vegetables to Start With

You've planned out your garden, had your soil tested, and shined your tools so they're ready to go. What's the best plant to start with? Here are some suggestions:

Plant only what your family will eat. It's tempting when you start an organic vegetable garden to plant crazy varieties. But if your family hates kale, don't plant it. Focus on what you love to eat.

Plant what's economical to grow. Some vegetables not only taste better but are less expensive to grow at home than to purchase at the supermarket. That's why so many home gardeners grow tomatoes. A store-bought tomato can't compare to a juicy, fresh-picked tomato.

Plant what you can store. As your interest in gardening grows, you may find yourself with excess vegetables. Some vegetables can be frozen, canned or dehydrated to store for long periods of time, while others must be enjoyed fresh. It's helpful to plant more of the types you can store for long periods of time than to plant tons of vegetables that go bad if they're not eaten quickly, such as lettuce. Plan ahead and plant more of what can be stored and less of what's eaten fresh.

Should You Plant Seeds or Buy Plants?

Some vegetables are easier to start from seed, while others are easier to grow from small starter plants purchased at the local garden center. Use this simple list for the easiest way to get started.

Best Vegetables to Plant First

When you're starting your first vegetable garden, you want encouragement. The best way to have fun is to plant easy-to-grow vegetables your first year. As you get growing, you can increase your garden to include more difficult-to-grow vegetables in subsequent years.

The easiest veggies for most beginner vegetable gardeners include:

- **Radishes**
- **Lettuce**
- **Beets**
- **Carrots**
- **Tomatoes**
- **Peppers**
- **Zucchini**
- **Cucumbers**
- **Squash**
- **Beans**

BEST TO START FROM SEED:

- **Radish**
- **Lettuce**
- **Kale**
- **Spinach**
- **Chard**
- **Beans**
- **Peas**
- **Corn**
- **Carrots**
- **Turnips**
- **Parsnips**
- **Celeriac**
- **Celery**
- **Beets**
- **Cucumbers**
- **Summer squash**
- **Winter squash**
- **Zucchini**
- **Cantaloupe**
- **Honeydew & other melons**
- **Watermelon**

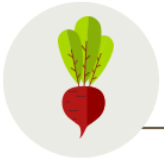
EASIER TO GROW FROM PURCHASED PLANTS:

- **Tomatoes**
- **Lettuce**
- **Peppers**
- **Eggplant**
- **Leeks**
- **Broccoli**
- **Brussels sprouts**
- **Cauliflower**
- **Cabbage**

BEST TO START FROM SLIPS OR SMALL STARTER PLANTS:

- **Sweet potatoes**
- **Strawberries**
- **Asparagus**

BEST TO START FROM PIECES OF THE ROOT OR BULBS:



- **Onions**
- **Garlic**
- **Potatoes**

Companion planting is a method of vegetable gardening that pairs "garden buddies" to naturally repel insects and nourish the soil. It's important to learn which plants to pair up for maximum impact.

Children love to garden, and if you're gardening with your family, you might want to set aside a special container or corner of the garden for your little ones to get their hands dirty. Radishes are fast-growing, as are lettuce and cucumbers. If your child loves to eat these vegetables, help your child plant seeds in the special "kids-only" garden plot. You may just cultivate a lifelong love of gardening and healthy eating!

When to Plant Vegetables

Plant your vegetable garden after the "frost free" date for your region. The United States Department of Agriculture created a map called the USDA Hardiness Map that divides the country into climate zones, based on the average last frost date in the spring and the first frost date in the fall. Vegetables are sensitive to frost and cold, and some need hot weather. Other vegetables, such as lettuce, prefer it a little cold.

First, find out your garden zone and the frost-free date. Next, check out the seed package for the right time to plant each vegetable. Seed packages have a colorful map on the back with colored bands and a key that correlates color to dates. Look for your area, and read the information to find out when you can plant seeds. Always err on the side of caution — if you think it's too cold, it's probably too cold.

Seed packages will also tell you how long it takes for each vegetable to grow.

- **"Days to germination" means the number of days until the seeds sprout.**
- **"Days to harvest" means the approximate number of days until you can pick your food.**

Generally, you can snip lettuce leaves and any green, leafy vegetable as soon as they look ready. Radishes, carrots, and root crops can be tricky. Try pulling one test crop or feeling around the area in the soil where the root is growing to assess its thickness. Tomatoes, of course, turn red when they're ripe and yummy, and eggplants, peppers, green beans, peas, zucchini, and squash can all be assessed simply by looking at the plant and the vegetable.

The Importance of Organic Products in Your Garden

Vegetable gardening for beginners wouldn't be complete without shedding light on the importance of organic products in the garden. Many families take great pains to purchase organic foods and products. It makes sense to extend this sensibility into your first backyard vegetable garden. What you put on your vegetables will eventually end up inside your body, and who wants a chemical cocktail instead of a vine-ripe tomato?

Everything you put on your plants or in your soil affects your garden, your family, and the environment. Things you spray onto your plants, for example, end up washing into the soil with rainwater, and then into the groundwater or local rivers and streams. Over time, commercial fertilizers and pesticides build up unhealthy levels of nitrogen and other chemicals. They can drastically impact the cleanliness, health, and quality of local waterways.

Bees and other pollinating insects can also be killed just as easily by commercial pesticides. Think twice before dumping poisons on your plants. Insects will die, but so will bees — and bees are the workers who pollinate your plants in the first place.

It makes sense to choose organic pest control for your garden. Other steps can be taken to boost soil health and prevent crop damage. Techniques such as crop rotation and companion planting can reduce soil wear and insect damage. Barriers, including things like floating row covers, can also keep harmful bugs off of your plants.

Diseases, Pests, and Problems

Each vegetable that you plant has its own set of possible diseases, pests, and problems.

Common problems include:

Too little or too much water — If you're relying solely on rainwater to water your garden, it might not be enough. Take a clean, empty can and place it in the garden. Does the can fill with water in a week? If not, you need to water with your hose.

Weeds — Weeds are the bane of every gardener's life. Keep up with your weeding, and weed by hand, pulling the weeds out completely. Do not compost your weeds, or you'll end up sowing weeds back into the garden. Place them in the trash instead.

Tomatoes that turn black at the end — This is called blossom end rot, and it's caused by too little calcium or improper soil pH.

Slugs and snails — These insect pests can be controlled with diatomaceous earth, a natural product, or by beer-filled pie pans that trap them. Copper tape is a new control method that also gets good results.

Plants eaten overnight — Look to deer or rabbits as the culprits. A stout fence, dug into the group a few inches, keeps rabbits out, while deer need a tall fence.

For more information on how to prevent plant diseases and control pests, please browse the Safer Plant Library and Pest Control 101.

We look forward to helping you start your organic garden!