



# HOW TO GROW DELICIOUS TOMATOES

An Essential Guide from the Experts at Gardening Know How

# **Table of Contents**

INTRODUCTION Your Future Tomatoes	5
KNOW YOUR ZONE	6
CHOOSE A GOOD HOME FOR Climate Space Companions  Not Friends Great Friends	YOUR TOMATOES 6
PLANTING SEEDS	8
PLANTING SEEDLINGS  Purchase Carefully  It's All About the Soil  Ready to Plant	11
New Tomato Plants Plan Out Your Rows How Deep If Your Seedling is Too Leggy Stakes and Cages	
PLANTING IN CONTAINERS Choose your container	14
Fill Your Pot Plant Your Seedling Now What	

TOMATOES LOVE WATER
PINCHING AND PLUCKING  Here's How to Do It  Plan Your Pruning  Focus First  Suckers – Pros and Cons  Tools  A Reminder
WATCH OUT FOR VISITORS
OTHER TROUBLES IN PARADISE
FEEDING YOUR TOMATO PLANTS
WHAT MAKES TOMATOES TURN RED?
HARVEST THOSE JUICY TOMATOES
AFTER WORDS



Like the journeys we all take in life, as gardeners we succeed and sometimes we fail. At Gardening Know How, we're all gardeners. We live in many different regions and bring different skills and expertise to the table. Collectively, we have a ton of experience growing tomatoes in almost every condition you can imagine! And, we've learned as much from our mistakes as our successes. So, we're excited to offer you this guide, featuring our best tips, tricks, ideas, lessons learned, and instructions so that you, our favorite gardeners, can grow perfect tomatoes every time.

Use our Dig Deeper features throughout this guide to discover even more in-depth information as we help you move through your tomato growing journey.

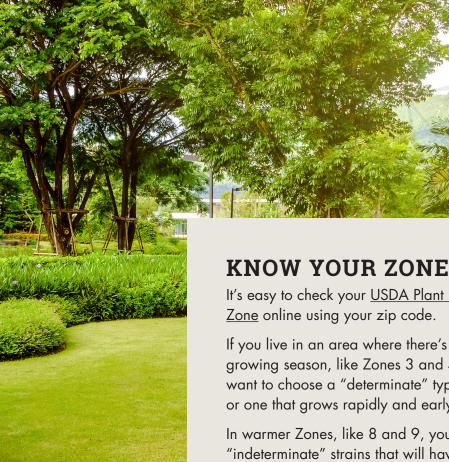
From all of us at Gardening
Know How, we wish you
Happy Gardening.



Before you start your tomato crop, ask yourself these questions:

- Do you know how you'll want to use your freshly picked tomatoes?
- Will they be small and sweet sprinkled over your salad, large and juicy for sandwiches, or green and firm for frying? Or purple, or yellow, or orange?

The list of choices is very long. Before you decide, here are just a few things you should know.



It's easy to check your USDA Plant Hardiness Zone online using your zip code.

If you live in an area where there's a short growing season, like Zones 3 and 4, you may want to choose a "determinate" type tomato or one that grows rapidly and early.

In warmer Zones, like 8 and 9, you can plant "indeterminate" strains that will have a longer growth period. Indeterminate plants will appreciate a bit of pruning and will produce until they're killed by fall's frost.

Your seed package should tell you which kind you're purchasing, or your garden center expert will know when you're buying plants.

### **CHOOSE A GOOD HOME** FOR YOUR TOMATOES

Tomatoes thrive in sunlight, so look carefully at the spot where you think your plants will be living. Consider that this spot will become home for your plant. When you plan to spend your life somewhere, you want the most comfortable conditions possible. Plants are the same. If their home serves them well. they will thrive.



Learn why knowing exactly what zone you're in can be the difference between tomatoes that make you beam with pride and a lackluster harvest that'll leave you scratching your head. **Climate**: Is your tomato's new home going to be sunny at least six hours a day? Be sure the spot you choose allows your plant enough hours of sunshine, whether it's on a deck, in a pot, or in a garden bed.

**Space**: Check ahead on the space requirements for the tomato variety you want. Your new tomato plants may seem little now, but they could surprise you later by growing much larger than you think. To give them plenty of room to flourish, plan to place the plants at least 2-4 feet apart to give them plenty of room to stretch. Large vining tomato plants need at least three feet of room. Creating mounds or using raised beds helps avoid root rot in areas of heavy rains.

Companions: Will you be planting compatible plants near your tomatoes? We all have friends that help us thrive, and some that might bring us down. Tomatoes are no different.

Not friends. Tomatoes don't do well next to corn, broccoli, fennel, cabbage, kohlrabi, or potatoes. And, don't forget, you don't want to plant anything near them that will grow tall enough to block their sunshine!

**Great friends**. Tomatoes love to grow near spinach, lettuces, carrots, and asparagus. Herbs like basil, borage, parsley, and mint, and flowers like marigolds and nasturtiums actually help tomatoes by inviting beneficial pests and deterring the ones who want to eat your crop.

Some plants simply give unwanted pests something else to eat besides your tomatoes, and some are great for attracting pollinators to your garden. Companion planting is a form of polyculture, or, using multiple crops in the same space to the mutual benefit of each-just like humans benefit from those we interact with (or not).



If you want to start from scratch with seeds, here are a few things you should know.



literally hundreds of tomato varieties to try.



Get your seeds started six to eight weeks before you plan to put them in the ground. Fill small pots with seed-starting soil, or buy peat pots or moistened peat pellets. Plant two seeds in each one, just in case one doesn't germinate. It's best to use clean trays, new peat pots and pellets, and be sure your planting mix is.pathogen-free.

You should plant your tomato seeds about three times deeper than the size of the seed itself. Anywhere from 1/8 -1/4 inch (3 - 6 mm) deep should be fine.

You'll need a warm place for them to incubate, so find a really warm spot in your house, or put the little pots on a heating pad on the low setting. Just like all babies, they need a warm snuggly place to get started. When they sprout, you can take them off the heating pad, but don't let them get too cold.

Once they've sprouted, your little seedlings need lots of **light**. They also like moist soil, but don't drown their tender roots. When they've grown one or two sets of actual leaves, they should go into the ground, about 2-3 weeks after the last frost.

Purchase Carefully. Try to find certified, disease-free seedlings to transplant.



Okay, you're ready to get these babies into the ground, but there's something really important you need to know.

It's All About the Soil! Before you put a single plant in the ground, take steps to ensure the soil in your garden plot is primed and ready for your new tomato plants.

Whether you have raised beds, are using pots or bins, or going straight into the ground, be sure you're using well-draining soil with a pH rating of about 6.5 to 7.

Your plants will grow healthiest in loamy, sandy soil rather than thick, clayish soil. If you have a lot of clay, break up the chunks and prepare a soil bed they can thrive in. Dig in some compost and other organic material into a large area around your plants' new home.

Make the planting bed so comfortable that your plants' roots can expand and elongate. Tomato plant roots love to spread and stretch, so they need a wide, deep bed of well-draining soil for maximal growth.



Did you know you can test your own soil? It's actually pretty easy, too. Dig deeper to find out how.



#### **READY TO PLANT?**

Read these important facts, and then get started!

New tomato plants should be about 6-8 inches (15 to 20.5 cm.) high and sport 4-6 true leaves before you plant them.

Plan it out. You'll need to allow 3 feet (1 m) between your plants, and 5 feet (1.5 m) between rows or planting sites. Remember, these plants need room to stretch out.

**How deep?** Looking at your seedlings, plan to place them in the soil right up to their first set of leaves-that's how you'll know how deep to dig. If you've used peat pots, be sure to tear the peat off around the top so the bulk of the pot sits beneath the level of your soil. Mix a bit of fertilizer with the soil at the bottom of each planting hole.

Tomatoes can grow roots along their stems, so don't be afraid of planting them too deeply, especially if your seedlings have grown leggy!

If your seedling is too leggy to stand straight up, you can dig a little trench next to the planting site and lay the plant on its side. Bury the leggy portion of the stem in that bent-over position, leaving the first two leaves above ground. This may even strengthen the plant, so don't be afraid to gently bend the stem over and bury it. Those little stem hairs should turn into roots under the soil.

Stakes and cages can be set up when you plant the seedlings. Dont worry, you can always move them later. Your growing tomato plants will appreciate something to support them as their fruits grow large. Plan ahead to give them some support-it's better if those juicy fruits aren't forced to form and ripen on the ground. If you want to sink stakes, leave at least two feet between the plants. Cages or stakes and twine can make all the difference for a well-supported tomato plant.



Container-grown tomato plants can be just as rewarding as garden-grown and, in some cases, are a better option when you have space constraints or want more control over sharing your labors with pests. Depending upon the variety you've chosen, hanging baskets, window boxes, planters, and many other types of pots and containers will work great. Just match the expected size of the plant to the size of your container.

Keep in mind that bushy varieties, rather than vining ones, typically make the best option for planting in containers because you shouldn't need to stake them up.



#### HOW TO DO IT

Start your seedlings the same way as for the garden, or purchase seedlings.

**Choose your container**. Your pot, bucket, basket, or barrel needs to be deep enough to accommodate your tomato plant's root system. A pot that's 12 in. (30.5 cm), both deep and wide, can work for most container-suited tomato plants. Anything from bushel baskets and half barrels to 5-gal (18.9 l) buckets can be used to grow tomato plants. Just make sure that the container has great drainage.

**Fill your pot with well-draining soil**. To start out, a mixture of potting soil perlite, peat moss, and compost will make your plant happy. Place a small amount of fertilizer in the bottom of the hole and mix it in with the planting soil.

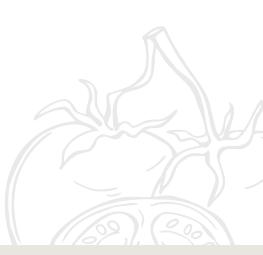
**Plant Your Seedling**. Tomatoes should be planted right up to the first set of leaves, so make sure you've allowed enough depth for the existing seedling soil, plus a little more to make the stem cozy. Gently press your potting soil all around the plant, and water it in.

Now what? Place the newly planted container in a spot where it will get full sun. Check your plant every day and water it as needed, keeping in mind that hot and dry weather will make it thirstier.

Begin using a water-soluble fertilizer about every other week during midsummer and continue throughout the growing season to feed every other week throughout the plant's growing season.



Watering your tomatoes can be tricky. There are lots of factors you'll need to consider, but there are a few general rules of thumb to remember.



#### Tomatoes like to be watered slowly and deeply.

As they grow in your garden, tomatoes don't like to be hit with a huge amount of water quickly but enjoy a slow delivery that will penetrate deeply to the roots. Don't rush it! Or, at least have a drip irrigation system if you don't have enough leisure time to spend watering your plants.

Never, ever water from above. Did you know that tomato plants should never be watered with an above-ground sprinkler? Overhead watering invites disease and pests. Don't do it. Use a soaker hose or drip system if necessary.

How much water do they need? To answer that question, answer this one first: How hot is it where you live? If you're in a hot zone, try mulching around your plants to help hold in the moisture. If you make sure your tomato plants aren't drowning and that they also aren't starving for water, you're probably watering them perfectly. Some people think 1-1/2 to 2 inches (3.5 to 5 cm.) of water a week is sufficient for a tomato planted in the ground, but your climate, your weather patterns (including occasional rain), your soil, and lots of variables make it impossible to go by one hard and fast rule.



But if we could make one hard and fast rule, here it is:

**Damp, not soggy**. Your tomato plant's soil needs to be damp 6 to 8 inches (15 to 20 cm.) below the surface of the ground for healthy roots. If your plants are in pots, estimate the equivalent.

Water gauges are helpful, and so is sticking your finger into the soil up to your second knuckle. If the soil is damp, you're good. If it's dry, get the water going. If it's too wet, let it dry and back off a bit on the watering.

**Mulching**. Whether or not to mulch your plants is strictly your call. If you live in a warm area where the soil dries quickly, or if your garden tends to get weedy, you may want to consider placing shredded leaves, grass clippings or straw around your plants, leaving about 6 inches (15 cm.) around the stems to allow for good water penetration.



As your tomato plants grow and thrive, pinching off dead leaves and stems regularly makes for a healthier crop. Of course, they need leaves, but pinching them back lets your plants focus their energy on making fruit.

## HERE'S HOW TO DO IT:

You shouldn't start pruning your plants until they grow to about 1 to 2 feet (30 to 61 cm.) tall, when they're mature and strong enough to take the shock. At this size, your plant will have branches growing from the main stem.

**Plan your pruning** for an early morning on a dry day. The plant will have the rest of the day to heal up, and this reduces the chances of getting infected by a disease. Don't trim your plants when the leaves are wet because this could spread disease.

**Focus first** on removing foliage, fruits, or stems that show any signs of disease or pests. Sanitize your pruners before doing any further clipping and wash your hands.

**Suckers: Pros and cons**. Where a branch meets the main stem, you may see a small shoot, or "sucker." They're not harmful, but some people may feel they steal energy from the flowering and fruiting process. Others feel they provide vital nutrition to the plant. If you feel you need to and you don't think it will weaken the plant, snip them at their base. You can also root suckers to start new plants throughout the season if you're so inclined.

**Tools**: Pruning and clipping should be done with sharp, clean pruners. Sanitizing your tools ensures that you won't transfer diseases to other parts of the plant. Use diluted bleach or rubbing alcohol to clean them safely.

**Reminder**: Always water your plants at the level of the soil rather than from above, especially after pruning. Water splashing on the pruning wounds can invite problems.



As much as we love tomatoes, imagine how irresistible they are to insects and countless other living creatures! If you pay a bit of attention to your tomato plants every day, it's easy to keep them pest-free without using anything toxic.

Some of the most common tomato-loving pests can be controlled with just a gentle spray of water, others can be carefully picked off, and still, others might require a little more aggression on your part.

Aphids, mealybugs, beetles, leafminers, hornworms, and whiteflies are just some of the party-crashers that love tomatoes.

Neem Oil. If you check your plants daily, you may see signs of insect visitations, like munched leaves, powdery mildew, aphids and beetles. Plan to douse your plants from their earliest days with occasional doses of neem oil spray, which will repel the most common tomato-loving insects like aphids, whiteflies, thrips and leafminers. We like neem oil because it isn't toxic and won't hurt the beneficial guests in your garden. If neem oil doesn't do the trick or toxicity isn't a concern, consult with your local garden center for specialized insecticides for tomatoes.

**Beneficial Insects**. Consider inviting in some white-hat

insects that will keep other harmful insects at bay. You can also plant mints, daisies, wild carrot, cosmos, marigold and clover near your garden to attract these heroes. Who are they? Pollinators of all kinds, parasitic wasps, centipedes and millipedes, lacewings, lady bugs, just to name a few. The list is long and the benefits are huge. Sometimes more bugs is a better idea.



Learn how to fight fire with fire! Read more about using beneficial bugs to rid your garden of bad bugs.

Rodents, Animals, and Birds. There are many ways to deter animals from eating your tomatoes. Try raised beds, growing in containers, using netting or fencing like chicken wire, deterrent sprays and motion detector lights. If you have moles or voles, you may want to consider laying landscape fabric under your garden soil.

If you're having problems with birds, it might work to give them something else to eat. Birds in particular like foodladen plants like sunflowers, they love bird-bath and they're frightened by moving, sparkly things and humans.



You may come across an occasional problem with your tomato plant caused by microscopic organisms. You may see plants drooping, leaves turning colors or curling, spots on your fruits or other unexplainable, disheartening results.

There are a number of viral and bacterial ailments that can affect tomatoes, and they often are a result of incorrect watering, a lack of nutrients, not enough sunlight, or infected seeds. Diseases like blights, cankers, bacterial and mosaic diseases are known to attack tomatoes.



Look for these signs. While examining your plants if you discover black leaf spots, yellow wilting leaves, blackening stems, brown spots, and dusty, moldy areas, what you're seeing could be signs of blight, wilt, cankers, powdery mildew, and various fungus or bacterial diseases.

Right Away. Clip out bad leaves and stems; make sure air can circulate through the plant and, again, don't water from above. Use a copper-based or homemade fungicide as early as possible.

It's important to remove and carefully dispose of all debris that may be near a diseased plant. Bag it up, seal it and dispose of it. Do NOT compost any diseased debris, pruning, or anything a fungus might have touched. It comes from spores. They'll reanimate next year and take up residence in places where they're unwanted.

**Prevention**. Prevention is the key. Some diseases have no remedy. It's important to always rotate your crops with at least 2-3 years between tomato crops and keep your garden sanitary and debris-free. You may choose to use a preventive measure, like a copper fungicide spray, but serious infections are best avoided by practicing good garden hygiene and paying close attention to your plants.

Fruit Troubles. Tomato fruits can occasionally surprise (disappoint) you with odd shapes, blotches, rot, or other problems. For most types of fungus and bacteria that can harm your tomato fruits, keeping a tidy growing area is critical. Be sure no bottom leaves or fruit are touching the soil, and that any dead leaves, stems, or other debris are removed at all times. Some fruit problems, like blossom end rot, are environmental issues that are tough to control.

**Mother Nature**. If you know the temperature in your region is going to get blistering hot, use a sunshade over your tomato plants to prevent sunscald on your fruit. You can't control heavy rain, but you can make sure that air can circulate your plants' branches and leaves



Fertilizing your tomato plants is essential for plump, juicy fruit. Tomatoes should be fertilized at the time of planting your seedling, whether in a pot or a garden.

**Feeding schedules**. After planting your seedlings in fertilized soil, you can wait until you see fruit before feeding it again. Once the plant begins to grow, you can fertilize every week or two, right up until the autumn frost finally kills the plant.

What kind of fertilizer? It's a great idea to test your soil before you plant. If your soil is well balanced or if it's high in nitrogen, you'll want to use a fertilizer that's slightly lower in nitrogen and higher in phosphorus, such as a 5-10-5 or a 5-10-1 mixture. On the other hand, if it's slightly lacking in nitrogen, use a balanced fertilizer like 8-8-8 or 10-10-10. Fertilizers are clearly labeled with numbers like these. We like organic ones, but there are many to choose from.

Too much nitrogen will cause your tomato plants to produce beautiful heavy foliage, but not much fruit, if any.





As you have probably guessed, there are many reasons tomatoes turn red or don't. Different varieties will ripen at different times, of course. If your cherry tomatoes are red and your beefsteaks aren't, it's good to remember that living things don't always mature at the exact same rates.

Maturity. We don't think of green tomatoes as being "mature," but they do have to reach maturity in a green state before they can begin to turn red.

**Temperature**. The two substances that help a tomato turn red, lycopene and carotene, can only be produced between 50-85 degrees F (10-29 C). Temperatures any cooler, or any warmer than 85 F (29 C) will stop your tomatoes from making these two important chemicals.

**Ethylene**. Once the green fruit becomes mature, it starts to produce a gas called ethylene, which starts the ripening process.

Is it windy? Ethylene gas can be swept away from the fruit by wind if it's constant. This will delay the tomatoes' ability to ripen, so you may want to put up a barrier if wind is a problem in your area.

**The Good News**. If your tomatoes fall from the vine before they turn red, put them in a paper bag. If they're maturely green, they will be able to ripen in the bag.



#### DIG DEEPER



Is it a little too windy for your tomatoes? Learn how to build a quick, easy windblock.



There's nothing better than vine-ripened tomatoes, but if you let your tomatoes turn totally red while they're on the vine, they may get too heavy, depending upon the variety.

How to tell. It may be best to harvest tomatoes when you see just a blush of color on the bottom of the green fruit. This is the ideal time to begin harvesting. If you wrap them in paper or store them in a paper bag, they'll ripen on their own.

**Pluck or snip**. If you hold the stem, you may be able to gently pull the tomato from its vine by breaking the stem above the calyx. Otherwise, with a pair of clean pruners, you can neatly clip them away, leaving a little of the stem on the fruit.

Tomatoes will be happy to ripen indoors at 55-70 degrees F (13-21 C). A cooler temperature will slow it down, warmer will speed it up.



THERE'S ALWAYS MORE TO LEARN.

Home-grown tomatoes bring joy as well as nutrition. It's safe to say our gardening experts have all had successes and failures. This info is intended to help you, our beloved gardeners, avoid some pitfalls, and maybe learn something new about the pleasures of growing this delicious fruit in your garden or container. Gardening helps us thrive, and plump beautiful tomatoes are one of the great rewards for the care and labor we bring to the work.



#### **AFTER WORDS**

Now that you're done, it's time to enjoy the fruits of your labor. Perhaps you grew tomatoes that turned out better than you thought. Or, maybe you followed along but just still aren't happy with your harvest. Luckily, each and every one of us at Gardening Know How is here to help. Visit gardeningknowhow.com anytime to tap into a wealth of knowledge and advice. You can also submit specific question to our GKH experts on our website.





We'd love to hear from you! Do you have a story about your gardening progress or news about your results? Our readers are hungry for your input. Share with us on Instagram and Facebook and include photos if you can!

As always, we wish you Happy Gardening!