

Healthy Tomatoes

The tomato plants are in the garden, looking perky and green. You are looking forward to enjoying those juicy ripe fruits straight from the plant. There is nothing better than a home-grown tomato. But what if something goes wrong? Let's try to avoid that.



Water and Fertilization

Tomato plants need some regular care to keep them healthy and productive. Water tomato plants thoroughly, soaking the soil to a depth of at least 6 to 8 inches. If no rain has occurred, provide a thorough soaking every one to two weeks, depending on your soil type. Once plants are established apply mulch to help retain moisture in the soil.

Mulch helps reduce the fluctuation in soil moisture that can cause cracking in tomatoes. Keeping the moisture supply as steady as possible throughout the season is the best way to prevent cracking, but some varieties are simply more susceptible than others. 'Early Girl' and 'Jet Star' are two popular varieties that resist cracking.

Avoid watering at midday when evaporation losses are highest. If you must use a sprinkler, water early in the day to give the tomato plants time to dry out (wet foliage overnight may trigger some diseases). If you are delivering water right at the soil surface using soaker hoses, drip irrigation, or furrow irrigation, timing is not as important.

Fertilize tomatoes only if the leaves are yellowing, and then very lightly. Too much nitrogen will result in a lush tomato vine with very little fruit. The best option is to fertilize at planting time with compost, bone meal, and lime mixed into the planting hole.

Pruning and Staking

A properly pruned and supported single-stem tomato plant will produce earlier and larger fruit and will be less likely to have cracking or other disease problems. Plants lying on the ground or dense with foliage will produce less sugar, which means later, fewer, and smaller tomatoes. Leaves on a pruned and supported plant will dry off faster, allowing less opportunity for bacterial and fungal diseases to develop.

Tomato plants will grow side shoots (or suckers) in the crotches between a leaf and the main stem. The suckers will be weaker and smaller the further up the plant they develop. On an indeterminate plant, remove the suckers by pinching them off when they are small and succulent. If desired, you can let one of the suckers grow, which will result in a two-stem plant. The sucker that is allowed to grow should be just above the first flower cluster, since this sucker will be vigorous but will not overwhelm the main stem.

Indeterminate tomato plants require good support. They should be staked, caged, or trellised. Staking uses less space in the garden, but is more labor intensive. The main stem(s) must be tied to the stake as the plant grows.

Caging uses more space in the garden and makes pruning more difficult. However, you will not need to tie up the plant. Trellising is more work to install, but provides a good compromise between staking and caging. A double-wire trellis requires little tying and less space than caging.

Assuming that they are staked or trellised, indeterminates take up less garden space and usually yield more tomatoes than determinates, but the tomatoes ripen a few at a time, rather than all at once. Common indeterminate varieties are 'Early Girl,' 'Brandywine,' 'Lemon Boy,' 'Sun Gold' and 'Big Beef.'

Determinate (bush) tomato plants should not be pruned except to remove all suckers below the first flower cluster. As the name suggests, they will grow to a certain (determined) point and then stop. Pruning them would deprive you of much of the plant's yield. They should be caged to keep them off the ground. Common determinate varieties are 'Oregon Spring,' 'Celebrity,' 'Health Kick' and 'Roma.'

Semi-determinate tomato plants are bushy and sturdy like determinate plants. They grow upright and keep producing like indeterminates. The only pruning needed is to remove any suckers that develop below the first flower cluster. These plants should be staked or caged. Semi-determinates usually have thick stems and rugose (crinkled) dark-green foliage. 'Super Tasty' is one example.

Late Blight

Late blight (*Phytophthora infestans*) is a fungus that can be a serious threat to potatoes and tomatoes in home gardens and can wipe out your plants in only a few days. This is the same disease still with us today that infected the potatoes in Ireland in 1847.

The disease appears as rather large brown to black spots on the leaves and stems and as grayish areas on green tomatoes. As late blight progresses the underside of leaves appear gray and dead and may show a margin of white cottony material. Spots on the fruit will turn brown and wrinkled. The blotches tend to occur where moisture collects on leaves. Older leaves close to the ground are usually the first to go and then late blight progresses upward during the season. It is interesting to note that although it is called "late" blight, in our area it may begin quite early in the season.

If you find these symptoms you should remove and destroy the affected leaves. If it has reached the fruit, the entire plant should be removed and destroyed to eliminate the fungus.

The fungus is soil-borne and thrives in cool wet weather (temperatures between 50°F and 70°F, combined with rain, fog, and heavy dew). In mild climates the fungus can overwinter in diseased potato tubers and contaminated tomato fruit. Late blight can be spread from the soil by wind, rain and insects.

Although fungicides may be needed, home gardeners can reduce blight problems with the following cultural practices:

- Select healthy plants or try a new hybrid ('Legend') that is somewhat blight resistant.
- Rotate crops each year and avoid planting tomatoes or potatoes in the same space as the previous year.
- Avoid planting solanaceous crops (potatoes, peppers, eggplant, and tomatoes) close to one another.
- Give plants ample space for good air movement.

- Mulch plants.
- Avoid wetting foliage, i.e., water plants at the base.
- Avoid over-fertilization, as this can cause excess foliage, which decreases air circulation.
- Destroy volunteer tomato plants because there is a risk of them having and spreading the disease.
- Remove and destroy infected leaves as they appear. Burn them or send them to the dump. Do not compost.
- Remove and destroy all infected plants at the end of the season.
- Clean up and dispose of as much plant debris as possible.

If the cool and wet weather conditions mentioned above are present, the wise gardener applies the appropriate fungicide as a preventive measure. With preventive fungicide applications plus proper sanitation and good cultural practices you should be able to harvest a bountiful crop. Consult your local extension office or nursery for fungicide recommendations. As always, when applying chemicals, be sure to read and follow all package instructions.

Blossom-End Rot

Blossom-end rot is a physiological disease that results from imbalances in water and plant nutrients. It is not caused by fungus and does not spread from plant to plant. This disease first appears as a large, black spot at the blossom end of the tomato fruit. It can appear on green or ripe fruits. The spots will enlarge until they cover up to one-half of the fruit and the tissue beneath will shrink. Basically, it makes the tomato inedible.

The main causes of blossom-end rot are a deficiency of calcium in the plant and moisture stress. To avoid this disease, use the following cultural practices:

- Mix lime into the top 8 to 12 inches of garden soil in the fall. The pH of the soil should be between 6.8 and 7.2. Most garden soils benefit from the application of at least 5 pounds of pulverized limestone per 100 square feet every three years.
- Use fertilizers on tomato plants in moderation, just enough to keep the plants green and vigorous, but not luxuriant.
- Do not plant tomatoes where drainage is poor.
- Provide adequate and consistent irrigation.
- Mulch plants.
- Restrict all cultivation around the plants to the top inch or two of soil.

Once the symptoms of blossom-end rot are detected, there is only one control that can be applied to correct the problem for this year's crop. Mix two level tablespoons of calcium chloride in one gallon of water. Spray this mixture liberally to the leaves and fruits three times at one-week intervals. Correct any irrigation problems, being careful not to wash the calcium spray residue off the plants.

Water and feed tomatoes just right, prune and stake the vigorous indeterminate plants, adjust your soil pH, hope the blight stays away, and reap your rewards.

References

Inglis, D.A., Johnson, D., Byther, R. [Late Blight of Potato and Tomato and Its Control in the Home Garden](#), Washington State University Extension Service EB0958, 1996.

[Blossom-End Rot of Tomatoes](#), Oregon State University Extension Service, FS 139.

Gerber, John M. (1979). Staking and Training Tomato Plants. Retrieved May 15, 2004, from College of the Virgin Islands Cooperative Extension Service <http://rps.uvi.edu/CES/gf7.PDF>

Ferrandino, Frank. [Pruning Tomatoes](#) [Electronic version]. *Kitchen Gardener* #27, pp. 16-19.