Growing Tomatoes in the Home Garden

NC STATE EXTENSION

Horticulture Information Leaflets

Growing Tomatoes for Home Use

Much success in growing tomatoes can be attributed to use of a few proven techniques. Choosing a variety that has proven to be a true performer should be at the top of every gardener's list. Better Boy, Whopper, Celebrity, and Mountain Pride are among some of the best selections. Better Boy, Celebrity, and Whopper are VFN, which means they carry resistance to verticillium wilt, fusarium wilt, and root-knot nematodes. It is best to experiment with several varieties in order to find the ideal tomato for your taste buds.

Use the best soil available to grow the tomato crop. Clay and sandy soils can be improved by working in 2 to 3 inches of compost, peatmoss, or other forms of organic matter in the top 6 to 9 inches of soil. Lime and fertilizer should be added according to soil test recommendations. If no soil test has been taken, apply ¾ cup of lime and ½ cup of 8-8-8 fertilizer for each plant. Lime will help reduce nutrient imbalances, particularly with calcium and help control the blossom end rot problem that occurs so frequently on tomatoes.

Tomato plants should be spaced 1½ to 2 feet apart in the row and 3 to 4 feet between rows. The planting hole should be deep enough to allow the top of a peat pot to be covered with one inch of soil. If peat pot is exposed to the air, it will act like a wick and rapidly dry out the root ball, causing stunting or death of the plant.

If the transplant is tall and leggy at time of planting, the trench planting method should be used. To trench plant a tomato plant, dig a horizontal trench rather than a hole for each plant. *Next, remove all of the leaves from the plant except the top leaf cluster (4 to 5 leaves).* Then lay the plant on its side in the trench and cover the root system and bare stem up to the top leaf cluster with 2 to 3 inches of soil. Firm the soil over the plant. Be sure not to press the soil too firmly around the stem where it comes out of the soil, as the stem may break.

A starter solution should be used at planting time to insure proper fertilization during the early growth stages of young plants. Starter solutions can be purchased from local garden centers or made at home. To make a starter solution, mix one pound of a complete fertilizer such as 8-8-8 in 10 gallons of water. If small quantities are desired, 3 to 4 tablespoons of fertilizer can be mixed per gallon of

water. The high phosphorus content in commercial starter solutions make them the preferred choice over home mixes. Never use more than one cup of fertilizer solution per transplant. Large quantities of starter solution will burn the root system.

Tomato plants should be staked or caged shortly after planting. Generally, staking produces larger tomatoes but less quantity than caging. A common 6-foot tomato stake may be purchased from many garden centers. The stake should be driven in the soil about one foot deep, 3 to 5 inches from the plant. Be sure to avoid driving the stake on the root side of plants that have been trench planted. Trench planted tomatoes should be staked immediately after planting while the location of the buried stem is fresh in mind. Use a strip of cloth, nylon stocking, or heavy string to tie the plant to the stake.

Tomato cages may be made by using a 5½ foot length of concrete reinforcing wire or pasture wire. The wire will form a circle 18 to 20 inches in diameter. The bottom horizontal ring of the wire cage should be cut off so that the ends can be pushed into the ground. After setting the cage in place over the tomato plant, drive 2 or 3 stakes around the outside edge of the cage to give it extra support.

Sidedress tomato plants with 2 to 3 tablespoons per plant of a complete fertilizer such as 8-8-8 or 10-10-10 after the plants have *started to set fruit* and *4 to 6 weeks* thereafter throughout the growing season. Keep the sidedressing material *4 to 6 inches from the plant's stem to avoid fertilizer burn.*

It is important to make sure the tomatoes receive sufficient water during the season. The soil should be *soaked 6 to 8 inches deep at 7-day intervals.* Mulches such as wheat straw or composted leaves around the tomato plants will prove to be a real asset in conserving soil moisture during July and August.

Finally, have a prepared plan for dealing with the various insect and disease problems. Frequent observation of tomato plants for pest damage is the only way to stay ahead of the game. Contact your local Extension center if you need advice on pesticide recommendations.

Blossom-End Rot of Tomatoes in the Home Garden

Blossom-end rot of tomatoes is a physiological disorder caused by a lack of sufficient calcium in the blossom end of the fruit. This disorder results in the decay of tomato fruits on their blossom end. Dry brown or tan areas the size of a dime, that grow to the size of a half dollar, characterize this disorder. This disorder is usually most severe following extremes in soil moisture (either too dry or too wet).

To reduce blossom-end rot in tomato, implement the following steps:

1. **Lime tomato soils to pH 6.5 to 6.7** - Home gardens not limed in the past 2 to 3 years will need 2 cups of lime for each plant. The lime should be worked into the soil 12 inches deep. To determine the exact amount of lime, send a soil sample to the Agronomic Division of the North Carolina Department of Agriculture & Consumer Services, for analysis and recommendations.

2. **Fertilize properly** - Applying too much fertilizer at one time can result in blossom-end rot. Following soil test recommendations is the best way to insure proper fertilization. For home gardens not soil tested, apply 5 pints of 8-8-8 per 100 feet of row, and thoroughly work it into the top 8 inches of soil.
3. **Mulch plants** - Use straw, pine straw, decomposed sawdust, ground/decomposed corn cobs, plastic, or newspapers. Mulches conserve moisture and reduce blossom-end rot. In extreme drought, plastic may increase blossom-end rot if plants are not watered.
4. **Irrigate when necessary** - Tomato plants require about 1.5 inches of water per week during fruiting. This amount of water should be supplied by rain or irrigation. Extreme fluctuations in soil moisture result in a greater incidence of blossom-end rot.
5. **Spray calcium** - The plants may be sprayed with a calcium solution using calcium nitrite or calcium nitrate or calcium chloride at 4 level tablespoons per gallon of water. This spray should be applied 2 to 3 times a week, beginning at the time the second fruit clusters bloom. These materials can be mixed with the spray that is used for control of foliar diseases. Chelated calcium solutions also provide an excellent source of calcium. When using these chelates, follow label directions. Several foliar spray materials containing calcium are available and all work well for tomatoes.

Additional Information

Plant Pathology Information Note (VDIN-019): *Blossom-End Rot of Tomato, Pepper, and Watermelon*.

Pruning and Supporting Home Garden Tomatoes

Tomato plants have two general growth habits. It is important to know what type of plants you have in order to space and train them properly.

Indeterminate types are tall growing plants, normally growing 5 to 8 feet tall, producing a fruit cluster on the stems between every third leaf. Plant terminals continue to grow as long as the plant is healthy. Most of our home garden varieties in North Carolina belong to this group. Some of the varieties in this group are Manapal, Better Boy, Big Boy, Fantastic, and Cherokee.

Determinate types are shorter growing plants, normally growing 1 to 5 feet tall, producing a fruit cluster on stems between each leaf, and each stem terminates in a fruit cluster -- thus, they often are called "self-pruning" types. Some varieties in this group are Pik Red, Colonial, Mountain Delight, Mountain Pride, Sunrise, Sunny, and Roma VF (pear-shaped).

Indeterminate types produce a shoot or "sucker" at each leaf axil. These suckers, if left undisturbed, grow into larger stems and produce fruit. This type of plant is usually supported above ground with a stake or trellis. A 5- to 7-foot stake may be driven into the ground and the stems tied

loosely to the stake with soft twine or cloth. Trellised tomatoes may be handled in a similar manner, leaving one stem for each 8 to 12 inches of space in the row; that is, if plants are spaced 3 feet apart, leave 3 stems per plant; if plants are spaced 2 feet apart, leave 2 stems per plant. Break out all other suckers before they grow to 3 inches long.

Determinate types are usually pruned only once when suckers are 2 to 4 inches long (later pruning reduces size). The plants are normally spaced 1½ to 2 feet apart in the row. The plant is sometimes tied to a stake. More often, plants are supported in a weave of strings supported by stakes. This weave system is developed as follows: Stakes (1 x 2) are placed between every other plant, and 2 stakes are placed side by side at each end of a section. These sections usually are not more than 50 feet long. This break provides a path to carry fruit out of the garden. When plants are about 12 inches tall, the first string is tied to the stalks at one end of a section. Then, pulling the string as tight as possible, it is wrapped around each stake making sure to keep it tight (this takes practice). The string is stretched down one side of the row and then back up the other. When one returns to the starting point the string is tied again. A second string is added in a week or two, when the tops of plants are 8 to 10 inches above the first string and before plants begin to flop over. Usually, only 4 strings are needed to support a crop. Many people use a 12- to 36-inch stick with a hole at the end to guide the string around the stake. With a little practice, stringing can be done at a slow walk. Nylon "baler's" string usually is used, because it does not stretch like "binder's twine."

Wire supports can be used like string but, here, larger posts are located 10 to 15 feet apart. Wire is stretched on both sides of the row every 7 to 14 days as the plants grow. This wire is attached to fence posts with a nail or fence staple at the end of each row. Plants are not normally pruned in this system.

Wire cages are often used to support tomato plants in home gardens. A cylinder, about 2 feet in diameter and 3 to 5 feet high, is made from strong hog fence or wire that is used for reinforcing concrete. This cylinder is placed over the plant and anchored to the ground. Plants growing in cylinders are normally spaced 3 to 4 feet apart in the row and are not pruned; rather, the suckers are pushed back in the cage to force them to grow upward in the cage. This is a good system to use if only a small number of plants can be grown since yield per plant is generally higher than from other systems of training.

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