Tomato

Culture

Tomatoes can be grown in any well-drained, fertile soil with a pH of 5.5 to 8.0. Sow seeds indoors into sterile seedling mix in late April. Plant ¼ inch deep, water lightly and cover with a grow dome or plastic to insure that the seeds do not dry out. Tomato seeds germinate best in a temperature range of 70-90°F. Days to emergence: 6-14. When the first set of true leaves has emerged, transplant into 3-4 inch pots and place in an area with full light and cooler temperatures (60-70°F) to help prevent legginess. Water carefully, allowing the soil to dry on the surface between watering, but don’t let the plants wilt. Fertilize with fish emulsion or dilute fertilizer solution every 10-14 days. Seven to ten days before you want to transplant outside, set the plants in a sheltered area outdoors to harden off. Bring in plants or cover them at night to insure that frost doesn’t nip them. Transplant outdoors into well worked garden soil in early June, after the danger of frost is past. Space determinate varieties 18-24 inches apart and indeterminate varieties 20-30 inches apart. Allow 36 inches between rows. If your plants have become leggy, plant them deeper; the stems will actually sprout roots. Water very lightly at first, allowing the stems to adapt. Cover the young plants with row covers or protect them with Walloo Waters to promote good early growth.

Soil temperatures below 50°F inhibit plant growth. Use black plastic to help warm the soil while preventing weed growth and maintaining good surface moisture. If you don’t use black plastic film, applying a bark or straw mulch later in the season will help discourage weed growth, conserve moisture, and maintain an even soil temperature. However, since mulches provide insulation, do not apply them until late June or July when the soil has become warm. Red plastic mulch has been reported to increase yields but is not as effective in controlling weeds.

Supporting and Pruning

You can either let tomato plants grow on the ground, or support them by staking or caging. Unstaked plants ripen fruit a week or two earlier. Staking minimizes care and reduces fruit rots. Soon after transplanting, drive stakes 1 foot into the soil, about 4 to 6 inches from the plant. Staked or caged plants require relatively little space and are capable of producing 8 to 10 pounds or more fruit per plant.

Another system uses stakes and twine (see photo). Set sturdy, 6-feet-tall, 1- to 2-inch-wide stakes 3 or 4 feet apart, between plants, down the center of the row and at both ends. When the plants get about a foot tall, tie bale twine to an end post about 8 inches above the ground and string the twine down the row alongside the tomato plants, wrapping it once around each post. At the end of the row, begin working the twine back in the opposite direction 8 inches higher on the stakes. Weave plants through the twine as they grow.

Lycopersicon lycopersicum

The tomato is the most popular vegetable in today’s home gardens, but it was not always so popular. Native to South America, the tomato was introduced by early explorers to Europe, where it became known as the “Apple of Love” in France and Italy. Thomas Jefferson raised tomatoes for his guests in 1781. However, it was not generally cultivated in the United States until 1835 because, until then, it was widely believed to be poisonous.

Determinate/Indeterminate:

Tomatoes are classified by their growth patterns. All can be either staked or caged.

**Determinate:** small plants, stem growth ends with a flower cluster at 12 to 18 inches, fruit production stops when growth stops. Determinate plants have fruit clusters between every node, which produces a more concentrated set of fruit. They are typically smaller and therefore do not need staking. Tomatoes on determinate plants also tend to ripen together, a good choice for gardeners intending to put up their harvest.

**Indeterminate:** vines grow and plants bear indefinitely. On indeterminate plants, fruit clusters are normally formed between every third node. Indeterminate plants continue to bear fruit longer in long growing seasons. When grown as staked or caged plants, tomatoes require relatively little space, yet they are capable of producing 8 to 10 pounds or more fruit per plant. Indeterminate varieties continue to grow until the bitter end and need to be staked or trellised for best production. They will produce fruits until frost, always leaving you some green tomatoes at the end of the season.
Supporting and Pruning (Continued)

Prune staked, indeterminate (vining) tomatoes cultivars to either one or two main stems. At the junction of each leaf and the first main stem, a new shoot will develop. If plants are to be trained using two stems, choose one of these shoots for the second stem, normally at the first or second leaf-stem junction. Pinch off other shoots, called suckers, weekly. Prune indeterminate plants in wire cages only once, in early summer, leaving only three to four main stems. Do not prune determinate varieties because it will stop growth and reduce fruit production.

Irrigation

Tomatoes need 1 to 1 ½ inches of water per week to maintain plant health and good quality fruit. Water tomato plants slowly and completely in order to help develop a strong root system. Do not let tomatoes wilt, or yields and fruit quality will be reduced. Cold soil temperatures, uneven soil moisture, and excessive watering can cause blossom-end rot to develop. Water early in the day in order to cut down on evaporation losses and give your plants plenty of time to dry out. Wet foliage overnight may help trigger some diseases. Drip irrigation or soaker hoses will deliver water right at the soil surface and not on the leaves, allowing you to water almost anytime. Try to avoid watering at midday though, because that’s when evaporation losses I

Fertility

Apply a general fertilizer before planting; tomatoes need high levels of phosphorus, but low levels of Nitrogen. Work ¼ cup of blended fertilizer such as 10-10-10 into the soil around each plant at planting time.

Harvest

For best flavor, harvest fruits when they are fully ripe and firm. Tomatoes will ripen to high quality indoors if picked when the red color first shows. As the season draws to close, green tomatoes still on the vine, may be protected with a little effort with temporary clear plastic film, wrapped around the plants to form mini-greenhouses. Support the plastic cover so it doesn’t contact the foliage and ventilate the covered plant to prevent excessive heat buildup during the day. Blankets or quilts can protect plants from overnight frosts. Harvest and wrap green fruit in newspaper, storing it at 55 to 60 °F. Unwrap the fruit as needed and place in the windowsill to ripen at room temperature. Whole plants can also be pulled and hung upside down in a frost-free place. Pick tomatoes as needed.

Pests

Use crop row covers to discourage flea beetles early in the season, when they can be most destructive. Tomato hornworms can be controlled by handpicking. For more information, consult University of Wisconsin -Extension publication A2088, Managing Insects in the Home Vegetable Garden.

Diseases

Natural genetic plant resistance is the best form of disease control. For diseases like early and late blight, a strict 3-year rotation and a sanitation program that includes destroying all the vines at the end of the year are your best defenses. Contact your local Extension office for more information.