

What Conditions Do Tomatoes Need to Grow?

Tomato (*Solanum lycopersicum*) varieties include cherry, grape, paste, heirloom and large-fruited varieties. Although plant size and fruit size, color, taste and texture varies among the different cultivars, each one requires similar growing conditions and care to thrive and produce an abundant crop. Tomato plants grow readily in most climates.



Temperature

Tomato seeds germinate readily in constant temperatures of 68 to 80 degrees Fahrenheit, emerging in six to 14 days. Although tomatoes will germinate in temperatures as low as 60 F, it takes longer. Starting seeds indoors six to eight weeks before the average last spring frost date, or directly sowing them in the garden after the last frost date once soil temperatures reach 60 F or warmer will produce seedlings. A temperature range of 65 to 75 F is best for tomato plant growth. When temperatures drop below this range, growth slows. Tomatoes will grow in temperatures warmer than 75 F, but you'll need to water more often to prevent wilting.

Soil and Sun

Much like other vegetable crops, tomatoes need nutrient-rich, fast-draining and loamy soil in which to grow. A pH range of 5.5 to 6.8 is best. Adding a 3- to 4-inch-deep layer of compost and mixing it into the top 10 to 12 inches of soil will improve the soil's texture and drainage while adding nutrients. These warm-season vegetables require full sun, or bright, direct light, for at least six to eight hours per day. Orienting tomato rows from north to south will provide the plants with the most possible sun.

Water and Fertilizer

Tomatoes need consistent moisture to produce even growth and ripe, juicy fruits. Water the tomatoes when the soil dries to a depth of 1 to 2 inches. Maintaining evenly moist soil without it becoming soggy or too dry is crucial to healthy growth. Spreading a 1-inch-deep layer of mulch around the plants will reduce weed growth while maintaining soil moisture. Tomato plants need 1 tablespoon of ammonium nitrate per plant after they have set fruit. Repeat applications every four to six weeks after that will promote large fruits and vigorous plants to support the increasing weight.

Support

Whether determinate, growing to a specified height, or indeterminate, growing constantly taller, tomatoes need some sort of support system. When using stakes or trellises, you will need to tie the plant's stems to these supports with plant ties. Never tie stems to supports so tightly the ties cut into the stems or so loosely they don't support the stem. A third support option, a wire cage, fits around the plants. The stems grow through the cage's spaces, resting on the wires for support. Support systems also allow the plants to grow upward, decreasing the amount of garden space needed from four to six feet between plants to 30 to 42 inches.

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