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Colorado State University Cooperative Extension

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no. 7.605

## Tomatoes for the home garden

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### Quick Facts

- Tomatoes are the most common vegetable in home gardens.
- Given sufficient care and the proper microclimate, they can be grown outside commercial production areas.
- Encourage vigorous growth after transplanting to build a plant capable of carrying a fruit load.
- Cold nights usually are responsible for poor set and rough fruit on the first clusters.
- Extend the season by improvising a plastic film shelter over the plants before frost.

Varieties of tomatoes are so numerous they cause confusion. For the gardener buying transplants, the condition of these transplants is perhaps more important than the variety. A good transplant should be at least as wide as it is high, have a stem the size of a pencil with a slight purpling at the base of the stem, and have dark green, thick and turgid foliage.

Assuming the transplants are all sturdy and well-hardened, the variety becomes a matter of preference. There are red, yellow and pink tomatoes; the fruit can be globe, flat globe, cylindrical, cherry, plum or pear-shaped. The plants may be dwarf, bush, or indeterminate and the fruit may weigh less than 1 ounce to more than 2 pounds.

Transplant tomatoes available for purchase at garden centers are generally hybrids of the currently popular types that include: Celebrity, Early Girl, Big Boy, Fantastic, and Big Beef. If gardeners desire something other than these common (but good) varieties, they must consider ordering seed early in the season and growing their own plants,

which requires a facility. A good facility will permit the control of temperature and light which generally means a free-standing greenhouse. However, acceptable transplants may be produced in a basement if sufficient light is provided.

### Transplanting

To obtain early fruit, transplant as soon as the danger of frost is past. To reduce stand losses, harden the plants before they are transplanted, especially if they are coming directly out of the greenhouse. This involves placing them outdoors where they will receive a few hours of direct sunlight each day, and some wind. They should be allowed to wilt before watering to help harden their tissue. After a week of this treatment, they should be tough enough to stand the full sun and unimpeded wind of the garden. Even so, do not start transplanting until after noon on a sunny day to minimize the time that the plant has to endure the sun on its first day. If the plant is root bound when it is removed from the container, tear the root ball apart slightly, starting at the bottom, until some of the roots are broken. This forces the root system to produce new roots that will grow away from the ball. Apply a pint or more of water directly after transplanting to settle the soil around the roots. Follow with sprinkler irrigation after transplanting is completed. Space rows 3 or more feet, and plants

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MAY 31 1995

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in the row 2 feet. Normally, set the plants to the same depth they were before transplanting. However, if the plants are so leggy that they will not stand up, dig the hole deeper and lay the plant in the furrow and cover with only the functioning leaves above ground.

If they are transplanted into an open area, protect plants from the wind while getting established. A wooden shingle driven into the ground on the windward side is frequently used as protection and can be removed in one or two weeks.

If there is a possibility of frost, protect the plants. Hot caps or over-the-row covers are best because they are translucent. When boxes or baskets are used, they must be positioned each night and removed each morning.

To discourage cutworms place a collar, such as a tin can with the top and bottom removed, around each plant.

## Requirements

**Light.** Where some plants can grow on a window sill, a tomato plant will not be productive if it receives light from only one side for three or four hours a day. It must have full sunlight for eight or more hours a day in order to do its best.

**Temperature.** The most frequent cause of poor fruits set and rough tomatoes, particularly on the fruit cluster, is low night temperatures. A tomato plant, properly hardened, can endure night temperatures down to freezing without injury. However, pollen will not be produced in sufficient quantities at night temperatures below 50 degrees F. When lower temperatures prevail, fruit will set poorly or not at all.

The answer is to either raise night temperatures during flowering by covering the plants at night or spray the blossoms with a blossom-setting hormone. If there is any doubt about the presence of pollen, tap a mature blossom during the middle of the day and watch for the yellow dust. If not present, fruit set will be poor.

**Fertilizer.** Like most other crops, tomatoes perform best in a good, rich garden soil. However, nitrogen fertilizer over 2 pounds per 1,000 square feet per year might be excessive. Apply all fertilizer before planting to promote the development of sturdy plants to carry the fruit load later on. However, after the fruit sets, the emphasis should be on its maturing.

Occasionally, if heavy rains occur, soil nitrates may be depleted and replenished with another 1 pound of nitrogen per 1,000 square feet. This should not be done after August 1 because it will induce vine growth at the expense of ripening the fruit.

**Water.** From the time of transplanting until late August, apply about 1 inch of water per week. This is not a substitute for daily attention to the soil moisture. During August, it is time to ripen fruit and this can be hastened by withholding water. Avoid prolonged wilting.

## Plant Culture

Cold soil inhibits plant growth early in the season when rapid plant growth is desirable. The soil along the south side of a building receives reflected radiation that helps warm it sooner in the spring, and is a good location for tomatoes.

Tomato plants do better when they are trained upright. The most common method is to stake each plant. The stake should be large enough to support the weight of the plant and fruit during any wind likely to occur. Drive the stake 6 inches to the north of the plant so the roots are not damaged. Tie the plant to the stake with strips of cloth. Trellises and wire cages also can support tomatoes.

If black plastic film is not used, a straw or sawdust mulch applied later in the season will help hold down weeds, conserve moisture and maintain an even soil temperature. However, since mulches provide insulation, do not apply until midsummer when the soil has warmed up.

Prune indeterminate tomatoes trained up a string by removing axillary suckers as they form. Wrap the new stem growth around the string. Do not prune determinate or bush varieties. They are either left to run on the ground or retained in the upright position by lacework of strings between stakes, steel cages, or multiple ties to a single stake. Getting the fruit up off the ground reduces losses due to ground rot and slug damage, which can claim nearly all fruit in contact with the soil.

Every gardener would like to dispense with pesticides and let natural predators take care of their pest problems. With the exception of psyllids, you can generally get a tomato crop without pesticides as long as you control weeds and the plants receive good culture. However, to avoid having some plants turn purple and dry up in the middle of the season, control psyllids with an insecticidal soap, sulfur dust or malathion.

Many soils are infested with nematodes and disease that attack tomato roots. The best defense is to rotate tomatoes to new ground each year and use resistant varieties that are designated by letters after their names. (VFN indicates resistance to verticillium, fusarium and nematodes.)

In addition to organism-induced diseases, tomatoes also may suffer from physiological and nutritional disorders. Blossom end rot is caused by water stress within the fruit. It generally occurs on the early fruit and may be aggravated by a calcium deficiency, high transpiration rates and a fluctuating water table. For many varieties, leaf roll is natural in Colorado, especially late in the season. In itself, leaf roll is not harmful.

As the season draws to a close, many green tomatoes are still be on the vine. A temporary plastic greenhouse may be constructed over the plants to extend the season. Support the plastic so that it doesn't contact the foliage. Ventilate to prevent excess buildup of heat during the day. Later, when frosts occur regularly, there will not be enough ground heat to prevent freezing within the shelter. At this time, harvest the remaining fruit and individually wrap in newspaper and store in a cool place. As needed, fruit may be unwrapped and placed in the window sill to ripen.