

TOMATO

Solanum lycopersicum (syn. *Lycopersicon esculentum*)

Solanaceae

ECHO® PLANT INFORMATION SHEET

Description

The Tomato originated in South America as a weed in fields of corn but was domesticated in Mexico and Central America; from there it spread around the globe.

Common Names

- Malay
 - Terung masam
- Tagalog
 - Kamatis

Cultivation

- Rainfall: Tomato plants are not drought resistant. Therefore, they should be watered regularly. Conversely, they cannot tolerate long periods of flooding, so do not overwater, particularly when fruit is ripening.
- Soil Types: sandy or sandy loam soils with a pH of 5.5 to 7.0 are preferable
- Temperature: soil temp of 20° - 30° C (68° - 86° F); frost sensitive
- Light: full sun The optimal soil temperature for germination is 20° - 30° C (85° F).

Seed should be pre-soaked for 30 minutes in warm water; do not oversoak. Tomatoes can be direct-seeded, but transplanting allows you to cull the weaker seedlings and save the best for transplanting. Sow the tomato seeds in flats or seedling beds 3 to 6 weeks before they are to be transplanted. Keep the tomato flats or beds moist (not wet). When the first leaves emerge, expose plants to daylight. The ideal transplant has 3-5 true leaves, is disease-free, and does not have flower buds or flowers. About 6-9 days before transplanting harden seedlings by slightly withholding water and exposing them to open weather. Plant seedlings with the stem buried up to the first true leaves.

Harvesting and Seed Production

For fresh market, start harvesting at the breaker stage when the blossom end of the fruit turns pinkish or reddish. For processing, harvest the red ripe fruit or the green unripe fruit. Tomatoes are self-pollinating. In modern varieties with male and female parts of equal length, pollination is instant. But a certain amount of natural cross-pollination will occur in older varieties whose style (the organ which receives the pollen) is longer than their stamens (the organs which shed the pollen). To reduce hybridization, plant older varieties in a block and save seeds from the central plants, or plant beans, or other climbers, in between the rows. The fruit of the lower parts of the plant are best for seed, but seed can be collected entirely from only one bush, if that is all that you have. Allow fruit to ripen just beyond the eating stage. Cut them open, squeeze out the seeds and pulp, putting each variety in a separate bowl or jar. Label the jars and leave in a warm spot for 2-3 days to allow fermentation to develop. Do not stir. Leaving the seeds for five days, but no longer, will allow more complete control of bacterial canker, a seed-borne disease. A foam will form on top which acts on the sticky gel that surrounds the seeds. As soon as the foam forms, scoop it off and any floating seeds, and pour the remaining mixture through a sieve. Rinse the pulp from the seeds and spread them on paper in a single layer to dry.

Pests and Diseases

Tomatoes are prone to a number of diseases, thus should not be grown on the same land more than once every four years. Also, all plants should be pulled up and burned at the end of the season. Seedlings often are attacked by damping-off fungi at the ground level and topple over as a result. For control, sterilize the soil and pre-treat seed with a copper compound. Fusarium Wilt-the lower leaves become yellow and the petioles droop; the affected plants wilt and die; use resistant varieties and rotate crops. Early Blight-affects the foliage and causes brown spots on immature fruits; do not use seed from infected plants. Late Blight-attacks the leaves, stems, and the fruit. The rotten portions of the fruit remain firm with a brownish green color that does not turn pink, while the unaffected parts of the tomato ripen; this can be controlled by spraying 1% Bordeaux mixture. Tobacco Mosaic Virus-chlorotic areas on the leaves. Remove affected plants from the seed beds. Tomato Fruit Worm-feeds on the vegetative parts then finds its way to the fruits where it cuts a hole and burrows. Collect the attacked fruits and destroy them. Epilachna Beetle-feed on the leaves, giving them a lace-like appearance. Pick up the larvae and the eggs by hand and kill them.

Cooking and Nutrition

Tomatoes contain vitamins C, A, B1, and B2. Ripe fruits are eaten raw, added to salads, stewed, pureed, stuffed, made into sauce, paste, juice, and catsup, or used in soups and stews. Unripe fruits are pickled, fried, roasted, or made into marmalade, pies, and relishes. Tomato flour, made from dried fruits, may be used to flavor and thicken. Tomatoes help digest the fats in eggs, cheeses, and meat products, and thus are traditionally eaten with each of these.