



Tomato

About Tomatoes

Tomato is a warm season vegetable that can be grown for fresh table use or for processing (e.g. catsup, salsa, paste). Tomato can be direct seeded or grown from transplants. Varieties vary widely in size, shape, color and soluble solids. They are classified as determinate (produce a limited number of flowers) or indeterminate (continue producing flowering buds) in growth habit. Tomato can be grown in the greenhouse or in the field.



Climate and Soil

Temperature	Frost tolerance	Water needs	Tolerance to waterlogging	Drought tolerance
Warm, day 21-27°C. Seed germination 20°C or above. Fruit set 20-35°C. Chilling injury below 10°C.	Sensitive to frost at any growth stage.	Deep rooted, moderate total needs but regular watering needed.	Low at any time. Root fungal diseases increase at high soil water.	Poor to fair. Stress can result in poor fruit set and quality.
Humidity tolerance	Wind tolerance	Soil needs	Nutrient requirements	
Low – leaf foliar diseases in wet environments.	Fair to poor.	Sandy – earlier planting; Medium–highest yields; Heavy – risk of poor drainage	Moderate N, P and K	

Production, Harvest and Postharvest Practices

Planting Material	Direct seed in warm soil; transplants when cooler (possibly with row covers)
Varieties	Open-pollinated and hybrid varieties. Resistance to Verticillium, Fusarium, nematode important.
Spacing	Varies. Transplants or thinned direct seeded stands on single row 150-180 cm beds with 45-50 cm spacing between plants. Approx. 13,000-14,000 plants/ha
Site selection and Field Preparation	Level soil to permit irrigation. Till in fall for early spring planting. Raised beds to increase soil surface area, aeration, drainage. Fine seed bed.
Time to harvest	80-110 days after transplanting for 10-15% ripe fruit. Determinate varieties with simultaneous ripening for processing 120-150 days.
Length of harvest	Pole varieties 1-3 times/week for 70-120 days. Mature green/pink bush fresh market 1-2 times/season at 80-110 days.
Expected yields	Pole production 60-80 t/ha; Bush fresh market 25-50t/ha; Processing 30-50 t/ha
Harvest	Hand harvest for pole and fresh market bush. Hand or machine harvest for mature green/pink fresh market and for ripe processing.
Storage	Tomato can be stored for a short time – e.g., 2 weeks for ripe fruit - at intermediate temperatures of 10-12°C for ripe fruit. 15-20°C to ripen green fruit.
Pests and diseases	Weeds, insects, nematode, viral/fungal/bacterial diseases

Prepared by Ron Voss and Mark Bell, 2007

Primary references: M. LeStrange et al. Fresh Market Tomato Production in California. UC Vegetable Research and Information Center. www.vric.ucdavis.edu.

T.K. Hartz et al. Processing Tomato Production in California. UC Vegetable Research and Information Center. www.vric.ucdavis.edu.

UC IPM Pest Management Guidelines. [www.ipm.ucdavis.edu](http://ipm.ucdavis.edu)

For more information visit: <http://ipm.ucdavis.edu>