

Tomato Production: requirements, growing, diseases, harvesting and marketing

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Main Issues

- Family group
- Optimal growth conditions
- Production Methods
- Planting
- Fertilizer Application
- Disease and Pest Control
- Harvesting

1. Useful Information

1.1 Family Group

Belongs to the solanaceae family.

It is a very popular vegetable grown all over the world.

The fruits are either eaten raw or cooked or processed into tomato sauce. It is about 94% water, 1% protein, 4% carbohydrate, small amounts of fibre, calcium, iron, and vitamins A, B₂, C and nicotinamide.

1.2 Optimal growth conditions

- Require fertile well drained soils with better water retention capacity and pH range of 5.5-6.5.
- Highly susceptible to frost attack.
- Long periods of humidity and rainfall reduce yields significantly.
- Water logging conditions also affect crop yields.
- Can be raised from seedlings sown in seed beds. They are ready for transplanting four to five weeks after sowing the seeds. Transplant seedlings when they are 100-150mm tall. Only transplant seedlings that are healthy and strong with thick stems. Plant spacing should be 1.0-1.5m between rows and in-row spacing of 500mm.
- Staking is recommended for all varieties (cultivars).
- Disbudding (removal of buds) is also called pinching out and should be done each week. If lower leaves become diseased they should be removed immediately to prevent spread of disease.
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1.3 Fertilizer Application

- Manure can be applied at the rate of 25-50t/ha at planting.
- Basal dressing of Comp S (6:17:6) at 1000-1500kg per ha.
- Top dress with 100kg per ha of AN (34.5%N), potassium sulphate when the first fruits are marble size and at 3 wk interval.

1.4 Disease and Pest Control

Disease	Symptoms	How spread	Favoured Conditions	Control
Late blight	Growth of greasy, grey-green areas on leaves; they turn brown eventually symptoms may develop fast turning the plant black and killing it within days. It can appear early as well.	Spores can be spread by wind	Hot and humid	Use fungicides such as copper oxychloride and Dithane M45.
Early blight	Dark brown, irregular spots appear on the lowest, oldest leaves. As spots mature they develop concentric rings, usually surrounded by a yellow area. Will infect leaves, stems and fruits		Hot and humid	Same piece of land more than once in the same year. Avoid overhead irrigation.
Damping off	Young plants appear pinched at soil level and subsequently collapse and die.	Soil borne	Continuously humid conditions at the soil surface.	Drenching with fungicide e.g. Thiram. Seed treatment before planting. Avoid nitrogen fertilizer after seedlings have produced their first leaves.

Common Pests		
Pest	Damage Caused	Method of Control
Red spider mite	They suck juices out of the leaves of the plant. They are tiny and red. Leaves become tiny mottled and silver. Tiny red dots and fine webs can be seen under the leaves and the plants remain small and look sick.	Spray the whole plant with dimethoate 40%wp, mitec, at 1ml per litre of water, plus a wetter. Repeat after 10 days if necessary. Biologically ,burn infected leaves and plants.
Leaf eaters	These are green caterpillars about 10 to 20mm long. Holes are seen at the middle or edge of leaves, stems and fruits.	Remove the caterpillars by hand and kill them. Spray carbaryl 85%wp at 2g per litre plus a wetter all over the plant.
Aphids and white fly	Suck sap hence destroy leaf structure and quality. Also transmit virus diseases.	Use dimethoate or soapy water.
Cutworm	Cuts the plant stem at ground level and holes out exposed tubers.	Use carbaryl and malathion baits.

1.5 Harvesting

The maturity stages are different. Best quality tomatoes are picked when they are red ripe. If tomatoes have to be transported or are not for immediate use they can be picked at a stage of first yellowing at the blossom end to red ripe. Removal of fruit stimulates the plant to grow and produce more flowers and fruit.. One tomato plant can produce 2.5kg or more fruit during its three month harvesting period.

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