

## Growing Tomatoes in the Alice Springs Region

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### WHEN TO PLANT

It is recommended to plant tomatoes from September to February in the Alice Springs region, although they can be grown all year with some special care. To avoid the intense heat and sun of summer, plant tomatoes in a spot that is shaded part of the day or use shade cloth to protect them. In very hot weather, there can be reduced pollination of flowers, which will result in less fruit, or developing fruit may drop off. Tomatoes are very sensitive to frost so protect them in winter with hessian.

### SOIL PREPARATION

Prepare the ground in advance of planting. The soil should be dug as deeply as possible and compost or well rotted animal manure should be worked into it. Increasing the organic matter will improve the soil structure and water holding capacity; will add micronutrients to the soil and generally make the soil and crops healthier. Many nurseries sell products specifically for this purpose. **Many seed packets will recommend adding lime to the soil before planting, but due to the region's soil alkalinity this should not be done.**



## CULTIVARS

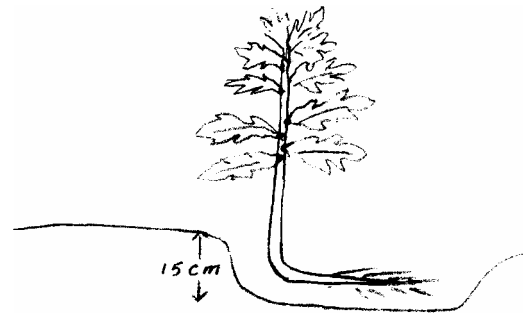
There are many different cultivars of tomatoes and they are generally categorised by their growing habit. Staked cultivars need to be grown on a trellis or supported on individual garden stakes. These include Grosse Lisse, Mighty Red and Burke's Backyard. Bush tomatoes are lower growing and tend to sprawl on the ground. Bush cultivars include Roma, San Marzano and Quick Pick. Mini tomato cultivars include Sweet 100, Sweet Bite, Tiny Tim and Yellow Pear. Quick Pick and Yellow Pear have a reduced acid content. For current cultivars, check with local nurseries.

## FERTILISER

Mix fertiliser in with the soil before planting. It should be placed deeper than the seed or seedling so it does not burn the young roots. A complete granular N:P:K (nitrogen: phosphorus: potassium) fertiliser is advisable although there are many different types of fertilisers on the market. It is also possible to get a pre-mixed fertiliser especially for tomatoes. Once plants are established and begin to flower and fruit, a side-dressing of fertiliser needs to be applied. A granular fertiliser can be applied and watered in, or a liquid fertiliser can be used. Excessive use of nitrogen will result in bushy plants with few fruits. **Always follow manufacturer's recommendations when applying fertilisers.**

## SEEDING AND PLANTING

Tomatoes can be seeded directly into prepared ground or seedlings can be transplanted. Seed should be planted 6 mm deep. Rows should be 50-60 cm apart and seedlings thinned to a plant every 50-60 cm along the row. Seedlings should emerge in 10-14 days. When planting out seedlings, make sure to acclimatise them to the weather (harden off) before placing in the ground. Cover with shade cloth if necessary. To



encourage greater water and nutrient uptake, as well as enlarging the area of root growth, trench the seedlings. This is done by digging a trench about 15cm deep and long enough to lay down the plant from the roots to the first true leaves. The top of the plant is gently turned up and supported with soil around the base.

## WATERING

The seedbed should be moist at seeding and transplanting time. If seeding, try to keep the area moist until seedlings emerge. If transplanting, water the plants in after planting and keep well watered until they have established. Many factors, such as temperature, humidity and wind, determine the amount of water a plant needs. If the area around the root zone is kept moist, the plant should be getting adequate water. Regular watering in the late afternoon is recommended. Drip irrigation is the most effective and economical means of watering.

## MANAGEMENT

Keep weeds in the vegetable patch to a minimum. Pick fruit as it ripens because this will encourage new flowers. Water on a regular basis to ensure even growth. Routinely check the plants for pests, diseases and deficiency symptoms. Mulch around the plants to reduce

evaporation, to keep weeds from germinating and to reduce soil temperature. Mulch with organic material, such as hay, or leaf or grass clippings, and dig this into the soil at the end of the growing season.

## PESTS

The major pests of tomatoes are cutworms, budworms, and mites. In the home garden, spraying should not be necessary unless a lot of damage is occurring. In many cases control is possible by hand-picking the pest from the plant. Remember that regular monitoring of the crop is necessary and proper diagnosis is imperative. The following descriptions are basic and are not intended to be used as the sole means for identifying pests. **Always follow manufacturer's recommendations when using any pesticide.**

**Cutworms** - Seedlings will be cut off at or near ground level. Small worm-like caterpillars may be found just under the soil surface, and they usually feed at night. Control these pests by putting a paper or cardboard collar around the base of the plant, pushed into the soil, when they are seedlings. Carbaryl and endosulfan can be used to control cutworms.

**Budworms** - Most damage will be seen on the fruit as the larvae burrow into the developing tomatoes, leaving holes. The budworms can be controlled by picking them off by hand or applying a spray. Insecticides recommended for control are *Bacillus thuringiensis* (Bt) and carbaryl. Bt is a biological insecticide and is most effective when controlling young grubs, therefore early detection is important. Sprays should be applied when the grubs are first noticed and repeated if necessary.

**Mites** - Damage caused by mites is usually first seen on the leaves. They will start to curl downwards and turn silvery. They eventually will turn a bronze colour, wilt and die. Damage may also be seen on the stems and fruits. Control is difficult because mites become resistant to chemicals very quickly. There are a few natural predators of mites but they are usually not in sufficient numbers to significantly reduce populations. A spray made with soapy water and oil applied to both sides of the leaves should prove effective as a control. Spray late in the afternoon to avoid burning the foliage. There are specific miticides which can be purchased. Dimethoate has been successful in controlling mites as has sulphur. Sulphur should not be used in hot weather.

## DISEASES

Diseases to be aware of in the Alice Springs region include Big Bud and Nematodes.

**Big Bud** is usually a minor disease in tomatoes and is spread by leaf-hoppers. The top of the tomato plant becomes stiff and upright and the flower buds are greatly elongated. Leaves become small and distorted. A natural control is to keep the area in and around the tomatoes free from weeds, which are a host for the leaf hoppers. As the weather becomes drier, and the weed source dies, the insects move onto the tomato crop.

**Nematodes** - There are a number of different types of nematodes but the most common one in tomato is the root-knot nematode. They are microscopic worms which invade roots, inhibiting water and nutrient uptake. If root-knot nematode is present, the root system will have galls and this will give the roots a knotted appearance. The best control is prevention. Plant cultivars which show some resistance to nematodes and make sure seedlings are free from the pest before planting. Marigolds (*Calendula* spp) are said to repel nematodes and can be used as a

border to keep an area free of the pest. There are nematicides available which can be used in the control of nematodes.

## **DEFICIENCIES**

Tomatoes may suffer from a calcium deficiency resulting in **blossom end rot**. As the fruit begins to grow, this will show up as a brown spot on the blossom end of the fruit. Although there is usually plenty of calcium in the water in the Alice Springs area, it is not always effectively taken up or used by the plant. To remedy this situation, irrigate on a regular basis to keep the soil moisture around the plant roots consistent. Add gypsum or ground egg shells to the soil around the plant and this will add calcium to the soil without increasing the pH.

## **HARVEST AND STORAGE**

Tomato harvest should begin 12-20 weeks after planting. Harvest tomatoes at the stage desired - green, semi-ripe or ripe. Green tomatoes can be pickled or made into chutney. Semi-ripe tomatoes should be harvested if there is danger of losing the crop or if they are being transported. To ripen, leave them in the open, out of direct sunlight, or put in a paper bag with a banana (the banana will hasten ripening). For full flavour, ripen tomatoes on the vine. These will store well out of direct sunlight or in the refrigerator. Only fully ripe tomatoes should be stored in the fridge as the coolness will inhibit continued ripening.

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