

Growing Tomatoes in the Alice Springs Region

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WHEN TO PLANT

It is recommended to plant tomatoes in the Alice Springs region from September to February, 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 with hessian in winter.



SOIL PREPARATION

Prepare the ground in advance of planting. The soil should be dug to a sufficient depth to enable mixing compost or well-rotten manure and to work them into it. Increasing the organic matter will improve soil structure and water-holding capacity, add micronutrients and will generally make the soil and crop 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 need 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. Bush tomatoes are lower growing and tend to sprawl on the ground. Mini tomato cultivars have the advantage of not requiring staking. For current cultivars, check with local nurseries.

FERTILISER

Depending on the current knowledge of the soil, assessed through proper testing, the plants can be provided with the required nutrients using either a single nutrient fertiliser, a combined nutrient fertiliser or a mixed fertiliser starting from before planting to top dressing few times in the production season. Complete granular NPK (nitrogen: phosphorus: potassium) fertiliser may be an option for an easy start. However, there is a whole range of different types of fertiliser in the market and the choice depends on the objectives of conventional, minimal or complete organic, or biological farming. It is also possible to get a pre-mixed fertiliser specially made 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 N will result in bushy plants with few fruits. **Always follow the 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 to 60 cm apart and seedlings should be thinned to have a plant every 50 to 60 cm along the row. Seedlings should emerge in 10 to 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 enlarge the area of root growth, trench the seedlings. This is done by digging a trench about 15 cm 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 after planting and keep them 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 to a minimum in the vegetable patch. Pick fruit as it ripens because this will encourage new flowers. Water the plants on a regular basis to ensure even growth. Routinely check the plants for pests, diseases and deficiency symptoms. Put mulch around the plants to reduce evaporation, keep weeds from germinating and reduce soil temperature. Mulch with organic material, such as hay, 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.

Cutworms - Seedlings will be cut off at or near ground level. Small worm-like caterpillars may be found just under the soil surface; they usually feed at night. Control these pests by putting a paper or cardboard collar around the base of plants when they are seedlings. Push it into the soil.

Budworms - Most damage will be seen on the fruit as the larvae burrow into the developing tomatoes, leaving holes. Budworms can be controlled by picking them off by hand or by applying a spray. A recommended insecticide for control is *Bacillus thuringiensis* (Bt). Bt is a biological insecticide and is most effective in controlling young grubs. Therefore, early detection is important. Spray when the grubs are first noticed and repeat 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. Insecticidal soap applied to both sides of the leaves should prove effective as a control. Spray late in the afternoon to avoid burning the foliage.

Nematodes - There are a number of different types of nematodes but the most common in tomatoes is the root-knot nematode. It is a microscopic worm, which invades roots, inhibiting water and nutrient uptake. If root-knot nematodes are present, roots will have galls, which will give them 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) attract nematodes because of their root exudates and that way marigolds can be used as trap crops in between tomato rows to keep an area free of the pest.

Always follow the manufacturer's recommendations when using any pesticide.

The use of pesticides is restricted. Check with the Entomology Section of the Department of Primary Industry and Fisheries for appropriate chemical controls, or refer to www.pestinfo.nt.gov.au.

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 leafhoppers. 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 leafhoppers. As the weather becomes drier and the weed source dies, the insects move onto the tomato crop.

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 maintain soil moisture around the plant roots. Use foliar calcium fertilisers to avoid calcium built up in the soil.

HARVEST AND STORAGE

Harvesting tomato should begin 12 to 20 weeks after planting. Harvest tomatoes at the stage desired - green, semi-ripe or ripe. Green tomatoes can be pickled or made into chutney. Tomatoes should be harvested semi-ripe if they are going to be transported. To ripen tomatoes, leave them in the open, out of direct sunlight, or put them in a paper bag with a banana, which will hasten ripening. For full flavour, ripen tomatoes on the vine. They will store well out of direct sunlight or in the refrigerator. Only fully ripe tomatoes should be stored in the refrigerator as the coolness will inhibit continued ripening.

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ISSN 0157-8243

Serial No. 758

Agdex No. 262

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