



## Pineapple

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**Name:** Pineapple *Ananas comosus* (Bromeliaceae).

**Origin:** Indigenous to south-eastern Brazil, Paraguay and northern Argentina, where it was domesticated before the arrival of Columbus.

**Distribution:** Pineapples were already distributed throughout tropical America before Columbus' time, and the Spaniards took pineapples to Africa and southern India by 1550. They had become established in China, the Philippines, Malaysia, and possibly Indonesia by the end of the 16<sup>th</sup> century.

**Australian Distribution:** Pineapples are grown in northern New South Wales, Queensland, the Northern Territory and Western Australia.

**Preferred Climate and Soil Types:** The optimum temperature for growth is 20°C at night and 30°C during the day. The rate of growth and development, and plant and fruit size is directly related to temperature. During the cool season growth is delayed and night temperatures below 10°C can result in leaf necrosis. Pineapples are very efficient water users and can collect and store water enabling them to withstand periods of drought. Optimum rainfall is from 1000-1500 mm/year but poor distribution can result in prolonged dry periods, which can adversely affect growth. Pineapples will grow in a wide range of soil types, provided there is good drainage and a pH of 4.5–6.0.

**Description:** A perennial or biennial herb, 50-150 cm tall, with leaves that are sword-shaped and up to 1 m long with a spiny margin or almost entire. They are arranged in a tight spiral clasping the main stem. The flower head is compact with numerous small reddish-purple flowers each surrounded by a sharp pointed bract. The fruit is a multiple fruit formed by an extensive thickening of the flower axis and the fusion of the individual fruits. The skin is formed from the persistent sepals and flower bracts as the fruit develops.

**Varieties:** There are two main varieties commercially grown in Australia:

- The cayenne is a large plant with long leaves that are reddish above and grey beneath and small spines at the base and tip of the leaf. This variety is often referred to as a "smooth type". The fruit is large and deep yellow when ripe, with pale yellow juicy flesh.
- The queen or "rough variety" is smaller with grey green leaves that are very compact with spines all along the leaf blade. Fruit is smaller with deep golden yellow flesh.

**Culture:** Pineapples are vegetatively propagated from tops, slips or suckers. Slips develop below the fruit and take about 12-18 months to harvest. Along with suckers, slips are the preferred planting material for commercial crops. Suckers develop on the stem and also take 12-18 months to produce fruit. Tops (from the top of the fruit) are slow to produce and take 24 months to harvest, and are generally not used in commercial crops. Pineapples are planted into raised beds in double rows with irrigation such as drip tape down the middle. Light irrigation is required during dry periods to maintain growth. Some form of mulch is useful to reduce weed growth and also to conserve moisture.

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**Pests and Diseases:** Nematodes can be a major problem and crops should be rotated with a resistant green manure crop to prevent attack. Symphylids, which are small and worm-like with legs and found in the soil, can cause damage to roots. Mealy bugs are not normally a problem unless numbers increase - then they can cause fruitlet core rot. Over watering during fruit development can result in soft watery rot in the fruit, and root rot which is caused by the fungi *Phytophthora*. Nutrient disorders are common and usually obvious due to discolouration of leaves.

**Fruiting Season:** Natural flowering begins in September through to December, with fruit from November to March. Flowering can be initiated at other times using a chemical treatment.

**Harvesting:** Maturing fruit is susceptible to sunburn and should be protected. Paper or shade cloth socks can be used and will also provide protection from birds. Harvest at half to full colour for fresh fruit market and avoid bruising fruit which can result in post harvest rots.

**Storage Conditions:** Fruit can be stored for 4-6 weeks at 14-20°C and 80-90% relative humidity

**Culinary Use:** Pineapples can be eaten fresh, in fruit salads, vegetable salads, and pasta dishes, and in cooking such as cakes, jams, chutneys, puddings, or cooked with meat dishes such as ham.

**References:** Nakasone, H.Y. and Paull, R.E. (1998) Tropical Fruits. CAB International.

Verheij, E.W.M. and Coronel, R.E. (Ed) (1999) Plant Resources of South-east Asia 2 Edible Fruit and Nuts. PROSEA.

Refer to the Pineapple Growing Note – FG4.