

## Durian

### 1. Characteristics and Cultivars

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#### ORIGIN AND DISTRIBUTION

Durian, often dubbed the King of Fruits, is the Golden fruit of Southeast Asia where it originates from the equatorial rainforest of Malaysia and Indonesia. One of the most controversial of the tropical exotic fruits, durian is prized by many Asians for its aroma and flavour, but disliked by most Europeans because of its repugnant odour. To many Asians who cultivate or deal in the crop it is a top money earner.



Clonal durian importation into Australia started in 1975 but orchard plantings commenced only in 1980 in north Queensland and 1984 in the Northern Territory. In the Northern Territory, plantings are found around Darwin. The total area planted with durian is rather small in Australia, estimated at 20 ha., 13 ha in Queensland and 7 ha in the Northern Territory. No orchard planting is found in north Western Australia.

#### AGROECOLOGICAL REQUIREMENTS

Durian prefers a hot, humid tropical environment with high rainfall of 2,000-3,000 mm evenly distributed throughout the year and good cloud cover. When the night and morning temperatures in the durian growing areas outside of Darwin are 7-12°C, for 2-3 months and humidity is under 30% with dry strong winds of 20-30 knots, widespread leaf loss and flower abortion of durian occurs. When trees lose their leaves they succumbed to dieback from sun scorching of the exposed branches.

In its native habitat, durian thrives on well drained, deep, fertile, loamy soil rich in nutrients and organic matter, in the Northern Territory, durian are grown on sandy soils, poor in nutrients and organic matter and extremely poor in water holding capacity. Large quantities of fertilisers are therefore needed and irrigation is critical for durian in the Northern Territory.

### **NUTRITIVE PROPERTIES**

Durian is an extremely nutritive fruit, rich in carbohydrates, proteins, fats and vitamins B1, B2 and also vitamin A. The pulp contains 62 mg/100 g edible portion of vitamin C compared to 43 mg in orange.

### **GROWTH HABIT**

In the Northern Territory one crop is produced each year. During winter, from May to August, growth declines and flower initials appear as clusters of rounded protuberances on branches. Flower buds appear 2-4 months later. Flowering occurs in July to September in the Northern Territory, giving a crop in late December to early February.

In the Northern Territory, flower opening occurs in the afternoon and evening between 1500-2000 hr depending on variety and prevailing weather conditions. Peak time of flower opening occurs between 1730-2000. Pollination is performed by insects and bats.

Some clonal self incompatibility has been observed in durian and self pollinating of cv. Gumpun produces severely deformed fruit, so outcrossing is therefore recommended for durian and it is advisable to have a mixed clonal stand rather than a pure stand. A mixed planting of early, late and medium flowering clones will also extend and enhance productivity.

Two days after anthesis most floral parts are shed leaving the fertilised ovary and style. Under prevailing Darwin conditions it takes around 110-130 days from anthesis to harvest maturity. Fruit abortion occurs from 1-2 weeks to 75 days after anthesis. Fruits drop on their own accord when ready for harvest.

### **VARIETIES**

Introduction of a wide array of durian clones is rather slow and difficult because of an embargo of durian germplasm export from Thailand, quarantine fumigation on arrival and problems with establishment. Currently more than 40 clones, mainly from Malaysia and a few from Thailand, have been successfully introduced by private growers and government departments. Many of these are still young or have just been released from quarantine. Assessing their adaptability and productivity under Australian conditions is a slow process because of the long gestation period involved. Many varieties introduced into Australia have been wrongly identified which has created confusion.

Durian are classified into 3 groups on the basis of earliness of bearing and fruit maturity: a) early cultivars: 4-5 years to bearing and 95-105 days to maturity, Luang, Chanee, Gradum Tong, Chompoo Sri; b) medium cultivars: 5-6 years to bearing and 105-120 days to maturity, Gaan Yaow, Monthong, Kob; and c) late cultivars: above 6 years to bearing and over 120 days to maturity, Gumpun, Kob Lebyiew.

The following characteristics are attributes of a good cultivar: a) good flesh recovery (30% or more) b) yellow to deep yellow, firm, creamy flesh, c) small seed, d) high and consistent yield, (70-100 fruits/tree) and e) resistance to major pests and diseases.

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