

Native fruits

Malaysia is rich in tropical fruits. It is home to 370 species of native fruits, among which are the durian, rambutan, cempedak, langsat and salak. These are cultivated in gardens, orchards and large estates across the country. In most cases, fruiting takes place twice annually, with the exception of salak, which fruits once a year. While mostly eaten fresh, these fruits are also cooked in a variety of ways and made into other types of food products.



Malaysia's native fruits are concentrated in these colourful stamps, which show rambutan and durian.

Malaysia's fruits

The most important commercial native fruits in Malaysia are the durian, mangosteen, rambutan, duku and langsat. Less commercially important are the cempedak, nangka and salak. In addition, there are many under-exploited wild fruits that are occasionally seen in local markets. These include tempoyak, watal, mata kucing and pulasan. Most native fruit species are seasonal, with the main fruiting seasons occurring from November to January and from June to August.

Governmental agencies, such as the Federal Agricultural Marketing Authority (FAMA) and the Malaysian Agricultural Research and Development Institute (MARDI), have been encouraging the cultivation and consumption of native fruits. As a result, Malaysia's fruits have become more popular amongst consumers and more economically significant for the country.

Durian: The king of tropical fruits

The durian is perhaps the most fascinating fruit of Malaysia. It is famous for its thorny shell, strong odour and sweet, creamy taste. The commercially cultivated durian tree, *Durio zibethinus*, is grown in gardens, orchards and on large estates. In Sabah and Sarawak, *D. lowianus*, *D. okleyanus* and *D. graveolens* are also cultivated and their fruits sold in markets.

Durian trees are tall, and grow up to a height of 40 metres. The fruits are woody, round or ellipsoid capsules, while the rind is covered with coarse spines, which are green or brown. Each lobe, or segment, of the fruit holds one or more seeds that are enveloped in cream, yellow or orange flesh or arils. The aril tastes sweet and creamy, but is occasionally bitter.

There are many good durian clones and the most popular is D24. The nutritious aril is high in carbohydrates, protein, fat, calcium and vitamins A and C.

Durian is largely eaten fresh, as it does not keep for more than a few days at room temperature. Traditional Malay delicacies, such as tempoyak and dokok, are made from durian. Tempoyak is fermented durian cooked with fish and eaten with rice and sambal. Modern food products that contain durian include candies, jam and flavouredings.



Clusters of flowers open in the evening, produce a steady smell, and are pollinated by nocturnal flying bats and insects.

Cultivation and trade of native fruits

Native fruit trees are grown on a small scale in orchards and plantations across Peninsular Malaysia. The most widespread is the durian, which is cultivated in every state. The fruit crops are sold domestically and exported to other countries in Southeast Asia, especially to Singapore, making a significant contribution to Malaysia's economy.

A market stall selling rambutan, mango and mangosteen.



Native fruits cultivated in each state on the Peninsula

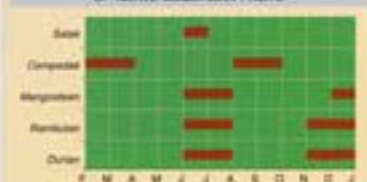


AREA UNDER NATIVE FRUITS IN PENINSULAR MALAYSIA AND EXPORT WEIGHT AND VALUE (1996)

STATE	AREA (ha)	WEIGHT (t)	VALUE (RM '000)	COUNTRIES EXPORTED TO
Johor	110 078	22 810	10 136	Singapore, Hong Kong, Brunei
Mangosteen	7916	2686	2077	Singapore, Hong Kong, Japan
Langsat	2671	890	0.78	N.A.
Duku	14 466	810	0.78	Thailand, Singapore, Brunei
Dokong	11 127	810	0.78	Thailand, Singapore, Brunei
Rambutan	18 202	3271	1460	Singapore, Brunei
Pulasan	228	4.8	4.4	N.A.
Cempedak	6486	2603	2350	Singapore, Thailand, Hong Kong, Brunei
Salak	967	4.8	4.4	N.A.

Source: Malaysian Agricultural Research and Development Institute (MARDI), 1997

ANNUAL FRUITING SEASONS OF NATIVE MALAYSIAN FRUITS



Eight common native fruits

Rambutan and pulasan: Two relatives

The rambutan tree (*Nephelium lappaceum*) is native to Malaysia and Indonesia. Its name is derived from the Malay word rambut, which means 'hair'. The tree is medium-sized, reaching a height of 25 metres when fully grown. Inflorescences occur in spikes, bearing either male or hermaphrodite flowers on different trees, although sometimes both male and hermaphrodite flowers are found on the same inflorescence. Small, yellow-green flowers emit a pleasant fragrance. The shape of the fruit ranges from round to ovoid to oblong, and the fruit turns yellow or red when ripe. Soft yet firm, the juicy, translucent flesh tastes sweet. It peels off easily from the seed, and the seed coat may come off with it. The fruits are moderately high in vitamin C, and are best eaten fresh. The flesh can be canned or made into jam.



A sectioned rambutan showing (1) the skin, (2) the fleshy aril, and (3) the seed and (4) the seed.

Pulasan (*Nephelium ramboutan-ak*) is a close relative of the rambutan. Wild trees are found in the forests, but crops are mainly cultivated in gardens and orchards. The oblong pulasan fruits differ from the rambutan in that their skin is thicker and the spines shorter and a darker red. In the fruits of some trees, the soft flesh peels off cleanly from the seed. Pulasan trees used to be grown from seed, but now they are propagated by grafting.



Whole and sectioned pulasan showing (1) the skin, (2) the fleshy aril and (3) the seed.

Cempedak

Belonging to the family Moraceae, the cempedak (*Artocarpus integer*) is indigenous to Peninsular Malaysia. A strictly tropical fruit, it requires fertile, well-drained sandy to loamy soil. It is grown in home gardens and orchards, mostly in Kedah, Perak, Pahang and Terengganu.

The cempedak tree is evergreen, reaching a height of 20 metres at maturity. Dotted trees, however, are usually shorter than 5 metres. Seedlings take about 4-6 years to bear fruit, whilst vegetatively propagated plants take 2-3 years. Male and female flowers are borne on separate inflorescences. The fruits are yellowish green to brown, covered with closely set, firm and obtuse prickles. As the fruits mature, the spines flatten, the fruit changes colour and emits a characteristic smell. Inside are light yellow to golden orange flesh balls, which are attached to the fruit core. The carbohydrate and protein-rich flesh is eaten raw or covered with rice flour and deep fried. The seeds can also be eaten after boiling or roasting.



A whole cempedak fruit (left) and an opened one (right) showing the numerous flesh balls.

Salak

In Malaysia, salak (*Salacca glaberrima*) is grown mainly in Terengganu. It is a short and rather dumpy palm that does not form a trunk, but sprouts its leaves from ground level. Individual plants are unisexual. The round or ovoid fruits are arranged in a compact bunch at the base of the palm frond. The dark brown fruit skin is covered with overlapping scales, the white, firm flesh surrounding each seed is sweet and fragrant.

Salak enjoys Malaysia's tropical climate and grows up to an altitude of 300 metres. It thrives in well-drained soil that contains a high percentage of organic matter. Previously propagated by seed, cultivators have found that this method does not guarantee the quality or sex of the offspring. Salak is now vegetatively propagated using its suckers.



A section of a bunch of mature salak, revealing (1) the woody rind, (2) the white flesh and (3) the hard, round seed.

Mangosteen

The mangosteen (*Garcinia mangostana*) is believed to have originated in Peninsular Malaysia. Of the 400 species of the genus *Garcinia*, about 30 are found in Malaysia. The mangosteen tree flourishes in the wet, tropical climate and prefers clay or sandy soil with a high level of organic matter. Most mangosteen trees are found in mixed orchards, or durian, in Kuala Kangsar in Perak, Muar and Segamat in Johor, Ulu Langat in Selangor and parts of Negri Sembilan and Pahang.

Because it has a weak root system, the tree is a slow-growing plant. It reaches a height of 10-25 metres. Only female flowers exist on cultivated trees, and male flowers are very rarely found. Interestingly, there is no need for fertilization before the fruit is formed. Single or clustered, the bright red female flowers are found at the tips of young branches. The fruits have a smooth skin that is thick and pale green when young, turning purple when ripe. When mature, the flesh is white, very sweet and soft and has a pleasant aroma. Larger fruit segments might contain a seed. Mangosteens are usually consumed fresh, but are also made into jam and juice. They are sold both in Malaysia and exported to countries such as Singapore and Japan.



An opened mangosteen with (1) soft and thin purple skin and (2) firm, translucent segments.

Langsat, duku and dokong

Langsat, duku and dokong belong to the same species, *Lansium domesticum*. They are native to Malaysia, as well as Indonesia, the Philippines and Thailand. The langsat tree is 10-20 metres tall, and is slender with a straggly crown. Small, spirally arranged flowers occur in spikes. The skin of the fruit is thin and yellow and contains a milky sap. The flesh has a slightly sour taste.

Duku trees are large, growing up to 40 metres. A brownish yellow skin covers the fruit. The translucent, sweet-sour flesh is sometimes tinged pink. Dokong trees are even bigger, reaching up to 50 metres. They are mainly cultivated in Kelantan, Terengganu and Johor. Medium and small fruits do not have a seed. The flesh is acidic and sweet.



A peeled duku showing (1) the thick, brown skin and (2) the firm, translucent flesh.



Langsat occur in bunches of about 20 fruits. Langsat trees are grown across Peninsular Malaysia, but mainly in the northern states.



These bunches of dokong on the tree are ready to be harvested.