

## INTRODUCING TROPICAL FRUIT TREES TO AUSTRALIA.

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Among the many new species of fruit trees now being introduced into Australia, I have selected twelve of potential future significance. Many exotic fruits, although native to and favoured in Southeast Asia and in tropical America, are virtually unknown in Australia.

Australia's diverse climate produces conditions which have proved quite suitable for the culture of many tropical and sub-tropical fruits. For example, litchi will grow from Cairns to Sydney, but mangosteen, durian, and rambutan will grow only in northern rainforests.

*Litchi chinensis* (Syn.: *Nephelium chinensis*) (litchi) is already well known in Australia where it has been cultivated since the turn of the century. It is already proving its worth as an economic crop in Queensland and Northern New South Wales. The tree bears red, warty fruits which have translucent white pulp and an agreeable sweet acid flavour. A proven method of propagation is by air layering. A 5 cm girdle of bark is cleanly removed, then a mixture of sphagnum moss, peat-moss, and sand is wrapped around the girdled area which is then completely sealed with a sheet of clear plastic. This treatment induces root growth. Clear plastic is used so we can observe root development. The air layers are ready for transplanting in 3 months. A lesser known method of propagation is by grafting. The apical wedge graft gives satisfactory results.

*Euphoria longan* (Syn.: *Nephelium longan*) (longan). The fruit is similar in appearance to litchi but has a darker skin. It develops into a neat tree some 10 to 20 m in height with a low trunk and spreading crown. The flowers grow in upright clusters. The flesh is white with a sweet pleasant flavour. Propagation is by air layering and apical wedge grafting. Its potential habitat extends from northern New South Wales along the Queensland east coast to Cairns.

*Manilkara zapota* (Syn.: *Achras zapota*) (sapodilla or chico) This tree is a native of the West Indies and Central America. It has become commercially important because of the milky latex which is used as a basis for a chewing gum. However, in Australia, the brown, egg-shaped fruit, tasting like brown sugar and honey will have marketable potential. It is propagated successfully by grafting or by cuttings. Again the apical wedge graft is used. The growing area is envisaged to be from Syd-

ney, along the coast to the Northern Territory, and in Western Australia.

*Averrhoa carambola* (carambola). Sometimes called the "five corner fruit" as it is a long oval or elliptic fruit with ribs arranged in such a way to make 4 or 5 sharp corners. When cut across, the outline resembles a star. It is already a popular fruit in Australia; however produced as seedlings the fruit is sour. Newly selected cultivars are sweet with a clear, watery juice. Propagation is by apical wedge grafting or by approach grafting. The East and North and West coasts of Australia are potential growing areas.

*Malpighia glabra* (acerola or Barbados cherry). A native of Brazil, the fruit is cherry-like, red to crimson in colour, with a thin skin. The pulpy flesh is soft, subacid, and juicy. It has a very high vitamin C content. Improved cultivars have no viable seed so propagation is by cuttings. It grows along the East, North, and West Coasts of Australia.

*Garcinia mangostana* (mangosteen). This is a slow-growing but long-lived tree. Mangosteen will reproduce true-to-type from seed, but it will take about 15 years to bear. Unlike most other fruits the mangosteen is parthenogenetic; that is, the fruit is produced without fertilisation. The fruits are round but slightly flattened at each end. It has a smooth, thick, firm rind which ripens to a red purple colour. Enclosed in the rind are 5 to 8 fleshly segments which are snowy white in colour. The flavour is slightly acid and indescribably delicious. It is, in fact, unique; only those who have tasted the fruit understand why the mangosteen is such a favourite. Propagation is by seed or the apical wedge graft. Its range is limited to the wet tropics of Australia.

*Nephelium lappaceum* (rambutan). Also termed the hairy litchi, because it has soft, hairlike spines on the surface of the rind. The white, firm flesh is juicy, sweet and subacid. Propagation is by air layering and patch budding. It is anticipated that this tree will do well along the coast north of Rockhampton.

*Durio zibethinus* (durian). The durian would win no popularity contest for its looks or odor. It has been compared to a "French custard passed through a sewer pipe". The flesh is enclosed in a thick skin which bears a number of rough spines. Its cream coloured flesh resembles custard in texture and colour. If the smell can be overlooked, the taste is unsurpassed. It will only grow in Australia in rainforest areas north of Townsville. Propagation is by approach graft and patch budding.

*Myrciaria cauliflora* (jaboticaba) is a slow growing ever-

green tree with an unusual fruiting pattern. The purple black fruits are produced in clusters along the central trunk and larger branches. The tree bears in spring and is followed by 2 or 3 lighter crops at monthly intervals. It can be propagated by cuttings or by grafting, using the apical wedge graft. Its potential growing areas are coastal regions around Australia, except in the south.

*Synsepalum dulcificum* (miracle fruit) is not recommended for its food value. Its unique property is that once eaten, it causes partial ageusia, so that everything eaten or drunk for about an hour afterwards tastes immensely sweet. A lime or lemon can be eaten as if it were a sweet orange. This chemical property is being researched so that it may be used as a substitute for sugar. It is propagated by cuttings or the apical wedge graft.

*Chrysophyllum cainito* (star apple). This is native to Central America. As well as having an edible fruit, it makes a striking ornamental tree with a silky golden brown colour under the green leaves. The round fruits, up to 4 in. in diameter are green or purple when ripe. When the fruit is cut the starlike appearance of the core gives it its common name. The flesh is white or purple and is sweet in flavour. Well known in Asia, its popularity is spreading throughout the Western world. Its propagation is by cuttings or the apical wedge graft. Its potential growing areas in Australia are envisaged to be from coastal Northern New South Wales, around Cape York to Broome.

*Pourouma cerropiaefolia* var. *uvilla* (Amazon tree grape). A native of South America, it has large racemes of purple grape-like fruit. It has a sweet white pulp and can be eaten raw or made into wine. At present, propagation is only by seed.

*Quararibea cordata* (South American sapote). Fast growing, medium-sized tree native to South America. Eight months after blooming "top shaped", brownish-green sapotes mature. The orange-coloured pulp has a sweet mango-melon flavour. Its propagation is by seed or cuttings. It should grow throughout Queensland, in frost-free locations.

In conclusion, I hope I have whetted the appetite of many future growers and consumers. A great deal of research has to be done before plantations of such fruit are seen throughout Australia. With many Asian people migrating to this country and with international travel, the taste buds have been titillated. A demand is developing and we now have to fill this market.

I will end with a famous quote from Thomas Jefferson: "The greatest service that can be rendered to any country is to add a useful plant to its culture".