



Agroforestry Facts
Indian-laurel



Botanical Name	<i>Calophyllum inophyllum</i> L.
Name in English	Indian-laurel
Name in Kannada	Surahonne
Family	Clusiaceae
Seeds Collection	In Tamil Nadu along the east coast ie. Cuddalore, Chennai, Nagai districts the fruit collection period is from July to September while it is during October to December in Kanyakumari and Tirunelveli district. In Kerala along West coast mature fruits can be collected from July to September. 34 Pick fruits at appropriate maturity i.e., pale yellow pericarp stage by plucking from the branches. Cut open the pericarp to release the seeds for raising nursery.
Seeds Processing & Treatment	No particular seed treatment required
Nursery	Fresh nuts germinate after 60 days giving 95% germination when sown in mother bed under green shade net. Regular watering is essential. 30 days after

	germination the seedlings can be transplanted to polybags of size 12 cm x 25 cm. The seedlings need to be hardened for at least three months before field planting.
Plantation Management	<p>It grows in warm temperatures in wet or moderate conditions. It is not suited to high elevations, cool areas, or very dry conditions. Mean annual rainfall required is 1000 mm with summer, winter, or uniform rainfall patterns. Dry season duration (consecutive months with less than 40 mm rainfall) is 4–5 months. Mean annual temperature of 18–33°C is preferred with mean maximum temperature of hottest month of 22–37°C and mean minimum temperature of coldest month of 12–17°C. It tolerates a wide range of soils. It grows best in sandy well drained soils in coastal areas but will tolerate clays, calcareous soils, and rocky soils. The soil is generally dry at the surface, but the water table is usually only a few decimetres down, although the water it taps is often brackish. It is also found higher up the rivers along river margins. The tree demands light and prefers full sun, and only less shade is tolerated. It is sensitive to frost and fire. It tolerates occasional waterlogging in coastal areas.</p> <p>Watering until two years is essential. Drip irrigation is preferable. Regular weeding is necessary until the crop is established especially once in six months' interval. After three months of planting the soil need to enriched with 250 g neem cake / plant or 500 g farm yard manure. This can be repeated at one-year interval. If termite problem exists in the soil, the plants can be provided with soil drenching of 500 ml (0.2%) chlorpyrifos. At the end of two years pruning can be done so as to increase branching and thereby higher fruit yield.</p>
Model/Spacing	Ideal spacing is 4 x 4 m with 2' x 2' pit.
Pests, diseases and Management	No major pests and diseases
Plant Rotation	10 – 12 years
Yield	It is one of the important TBO species with an annual average nut yield of 12 kg/ tree (5-year old) and 100 kg in 20 year old tree. Fruiting starts at 4-5 yrs. a five-year old tree yields 3 kg kernel, ie.2.1L oil per tree. A 5 year old plantation with just 35 trees can yield 75 L oil, provided superior clones are planted. Less than 0.25 acres is sufficient for annual requirement of 75L oil. In 1 acre at 4x4 m 250 trees can be accommodated.
Uses	It is a potential species valued for its seed oil. It is a good alternative to Casuarina as a beach windbreak, for soil

	<p>stabilization and to control soil erosion. It is amenable for agroforestry and is also intercropped with <i>Acacia</i> spp.</p> <p>Its kernel yields 50-70% oil which is directly being used as fuel in diesel engines without undergoing the transesterification process. Trans-esterified oil can also be used as biodiesel. Seed oil also called as Tamanu oil has medicinal uses in treating skin diseases and fetches high price (\$4-\$40/ 30 ml) in international market. With recently discovered plant properties like anti-HIV and anti-cancer active compounds, <i>Calophyllum inophyllum</i> can be placed amongst the most important multipurpose trees. The timber of this species referred to a 'Bintagor' is of superior quality and is popularly traded in South-East Asian countries. It has demand for carving, furniture making, boat building, and flooring. It is a durable multi-purpose timber (density 560-900kg/m³).</p>
Buyers /Industries	In Soap, Cosmetics, pharmaceutical and in aromatherapy industry.
Harvesting	After 5 years an annual average nut yield 12 kg/ tree and 100 kg in 20 years old tree.
Economic Returns	<p>4 kg nuts give 1 kg kernel. 1 kg. kernel costs Rs.30/-.</p> <p>Extraction cost for oil Rs.5/- (Rs.30-5) =Rs.25. Cost price of oil from 1 kg kernel: Rs.39/- for 700 ml. Cost price of oilcake 400g: Rs.8/-</p> <p>Hence from 1 kg kernel or 4 kg nuts the earning is Rs.47/-. Nut yield from one acre (250 trees): 3000 kg. Kernel yield from one acre (250 trees): 750 kg. Annual income from one acre: Rs.47 x 750 = Rs.35250/- in the fifth year. The income gradually increases as the tree matures.</p>
Current Market Rate	Rs. 55 per L. Rs. 20 per kg oilcake