Fruits for the Future

Safou

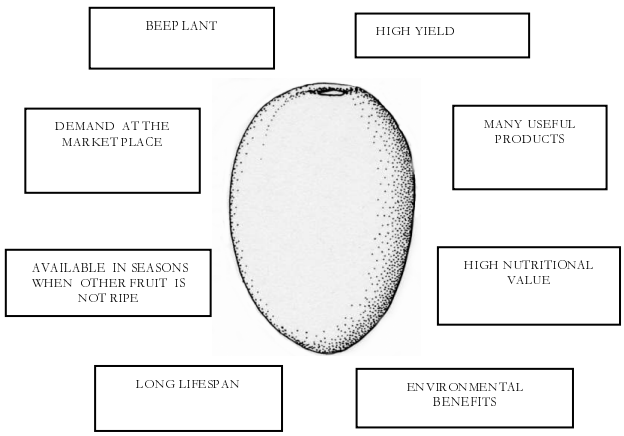
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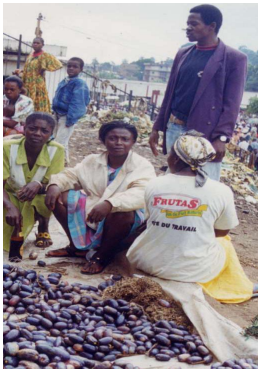
What is safou? - safou is a tropical fruit which belongs to the trees *Dacryodes edulis* L. and belongs to the family Burseraceae. The tree is an evergreen oleiferous tropical fruit tree which grows in the humid and sub-humid climates of West and Central Africa. It has a height of 20 - 30 m in the forest and 12 m in orchards/plantations, the trunk having an average diameter of 55 cm. The bark is scented, resinous and pale-grey in colour. The tree has a dense, compact, spherical crown with a short, slightly fluted bole and whorled branches. It is a fast growing tree with an average life span of 50-100 years. The flowers are small (0.6 cm) and borne in large terminal panicles. The species is dioecious, the flowers being unisexual after abortion of one sex. The fruit (drupe) or safou, is usually oblong-cylindrical in shape and is 1.5 - 7.0 cm length and 1.3 - 3.5 cm in diameter. The ripe fruit is bluish/black in colour and is filled with a rich, oily pulp containing one seed. The seed is large, contributing 25 - 45 % of the entire fruit and unlike many other fruit tree species, it has no seed coat or testa.



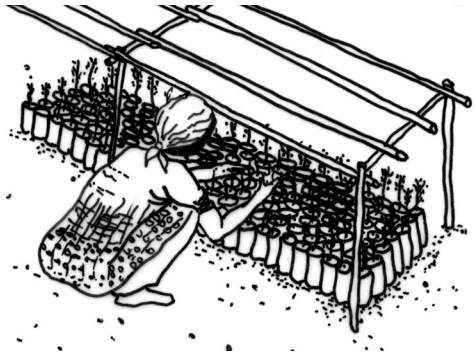
Where does the safou tree grow? - The genus *Dacryodes* contains thirty-four species, 2 in Tropical America, 19 in Africa and 13 species in the Malaysian archipelago. The safou tree is native to the humid lowlands and plateau regions of Central Africa and the Gulf of Guinea, but the species has now been introduced to parts of Malaysia. It favours moist, shade conditions and is often incorporated into multi-farming systems, especially in its early years of growth. It occurs in non-flooded forests in humid tropical zones, but in drier areas safou prefers slightly swampy ground. The soil moisture content is critical for good root growth, especially for young trees in their establishment stage. The tree favours acidic soils, with organic matter in the surface horizon, this improves its growth and production. Safou can grow to an altitude of 1000 m, but both mature and young trees are susceptible to frost.



Why should you grow the safou tree? - The tree is well known for its fruits (safou), which are rich in protein, fat, fibre, minerals and essential amino acids. The oil, which is extracted from both the pulp and the seed, is rich in palmitic, oleic and linoleic acids. The tree is easy to cultivate and can grow in a wide range of farming systems. It can provide a stable income from sale of the fruits and their products. The fruits are harvested when other crops are out of season and provides a staple food for 3-4 months of the year in some areas. The tree can produce an annual yield of about 223 - 335 kg of pulp per tree. The safou tree is not yet a plantation crop, but is currently grown in small orchards.



Economics of the safou tree - The safou tree is an economically important species (7 tonnes of oil per hectare is extractable from cultivated safou). High production of the safou exists in Cameroon, Congo, Gabon and Zaire to satisfy the demand at local markets. In Cameroon the total annual production of safou has been estimated at 118 603 tonnes in 1997, but less than 100 000 tonnes end up in marketing channels due to poor storage, poor transport links and home production. It is also commercially imported as a fresh fruit to certain European countries, such as France and Belgium, from production sites in Cameroon, where in 1999, 105 tonnes of safou were exported. Most producing countries do not grow the safou tree on a commercial scale and fruits are collected from trees that grow in the wild and in home gardens. Safou trade has expanded over the last decade and is continuing to do so.



How do you grow the safou tree? - The safou tree is commonly grown from seed, but is also propagated by vegetative propagation (air-layering and stem cuttings). Air layering is the most common method of vegetative propagation. A small area of bark is removed from a good quality tree. The cut area is covered with a soil mixture and kept in position with clear polythene film. After a number of weeks, the growing roots can be observed through the polythene film, the branch can then be severed and potted. Vegetative propagation by both air layering and stem cutting is relatively cheap and easy but results can be inconsistent (often dependent on the trees' phenological state prior to propagation). For seed propagation, fruits should be selected from trees with good production and quality. Seeds are recalcitrant and should be extracted from the fruit with care to avoid injury. The seeds should be planted approximately 2 cm deep in containers of acidic loam soils with a high humus content (germination occurs within 12 - 15 days). When planted out, young trees require adequate soil moisture to become well established (ripe fruit, however, has a short storage life in humid climates (2 - 8 days without refrigeration)). The trees will bear fruit in 4 - 5 years.



What are the uses of the safou tree? - It is a multipurpose tree, best known for its fruit pulp. The fresh pulp has a pear-like flavour and oily flesh. It is quite hard and usually consumed after boiling or roasting. It can be fried to produce a kind of butter and may also be consumed fresh. An oil can be extracted by distillation from the pulp and seeds. The oil is used for cosmetic and industrial purposes. The pulp and seeds are traditionally sun-dried or roasted to extend the shelf life, though this can effect the nutritional value increasing the acid content of the pulp and decreasing the iodine content. The seed kernel contains a high protein content and is often used as a livestock fodder. The timber is soft, elastic and grey-rose in colour. It is used to make tool handles, mortars and is suitable for carpentry, firewood and timber. Safou bark produces a resin that is used in local medicine for the treatment of parasitic diseases (skin) and jiggers. The resin can also be used as a varnish. The leaves, stem and root barks are also used in traditional medicine to treat leprosy, dysentery, anemia and tonsillitis. The tree can be planted as a homestead tree, used to reduce soil erosion, as a live fence in intensive cultivation systems, for shade (in young cacao, coffee and oil palm groves), in agroforestry systems (soil conservation/fertility/shade) and also as an ornamental in gardens.

Further Reading

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Kengue. J. (2001) Safou Extension Manual. International Centre for Underutilized Crops, Southampton, UK.

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Kapseu. C and Kayem G. J. (1998) Proceedings of 2nd International Workshop on the African Pear Improvement and other new sources of vegetable oils. Presses Universitaires de Yaounde. Cameroun.

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