Blighia sapida

Konig

Sapindaceae

LOCAL NAMES
Creole (arbe fricasse); English (breadfruit,akee apple,akee,ackee); French (fisanier,aki,Abre-à-fricasser); Spanish (seso vegetal)

BOTANIC DESCRIPTION
Blighia sapida may reach 13 m high, has a spreading crown and ribbed branchlets.

Leaflets 2-5 pairs, the upper ones largest, obovate. Leaves oblong or sub-elliptic, acute to rounded base, 3-18 cm long, 2-8.5 cm broad, pubescent on the nerves beneath.

Flowers bisexual, aromatic and greenish white in colour, borne on densely pubescent axillary racemes, 5-20 cm long.

Fruit capsule shaped, leather like pods contain a seed in each of 3 chambers or sections. A thick fleshy stalk, rich in oil, holds the seeds. When ripe, the fruit sections split and the seed becomes visible. The fruit turns red on reaching maturity and splits open with continued exposure to the sun.

Seeds shiny black with a large yellow or whitish aril.

The generic name Blighia honours Captain William Bligh who introduced the plant to the English scientific community at Kew in 1793. The specific epithet is in reference to the presence of substances in its seeds which turn water soapy or frothy.

BIOLOGY
There are two fruit bearing seasons between January-March and June-August. Flowers are bisexual.

Blighia sapida (Lovett)

Fruit and foliage (Trade winds fruit)

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ECOLOGY
Found in areas outlying forests in the savanna regions and in drier parts of the eastern half of the West African region, B. sapida is a climax forest species commonly associated with Strombosia pustulata.

DOCUMENTED SPECIES DISTRIBUTION

Native: Cameroon, Cote d'Ivoire, Ghana, Liberia, Nigeria, Senegal, Togo
Exotic: Antigua and Barbuda, Barbados, Cuba, Grenada, Haiti, India, Puerto Rico, Surinam, Trinidad and Tobago

The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Food: This delicacy is enjoyed by many at breakfast or as an entree. Parboiled and then fried, it has a nutty flavour, excellent with fish or bacon. Cooked, it resembles a "vegetable brain." The canned product is exported to ethnic markets worldwide and continues to be enjoyed by both visitors to the island and Jamaicans residing overseas.

Apiculture: The flowers are visited by bees for pollen and nectar.

Fuel: Good quality charcoal is produced from B. sapida wood.

Timber: Timber from B. sapida is used in making furniture.

Lipids: The purified oil from the fruit has high nutritive value and makes an important contribution to the fatty acid intake of many Jamaicans and West Africans. Linoleic, palmitic and stearic acids are the major fatty acids observed in the arillus with linoleic accounting for over 55% of the total fatty acids.

Poison: While its popularity has never faltered, the fruit killed around five thousand Jamaicans between 1886 and 1950. Consumers of the unripe fruit sometimes suffer from 'Jamaican vomiting sickness syndrome' (JVS) allegedly caused by the unusual amino acid components, hypoglycin A and B. Levels of hypoglycin A in the arilli peak at maturity but rapidly diminish to non-detectable levels in the opened fruit making it safe for consumption. Although JVS has resulted in some fatalities in the past with symptoms including vomiting and severe hypoglycaemia, nowadays such incidences are rare with the increased awareness of the necessity for consuming only ripe, opened fruits. The rind contains saporin and may be used to poison fish so that they will be rendered easier to catch. The seeds, aril, and oily stalk are highly poisonous. If seeds are swallowed, sudden and violent vomiting occurs, followed by convulsions, coma and death. Because of its potential danger, the Jamaican government has banned the fruit canning for export.

Medicine: In Ghana several uses are recorded for B. sapida; the bark is one of the ingredients in a concoction administered for epilepsy. Leaf juice is used for washing or as drops for sore eyes, conjuntivitis and trachoma. The pulp of twiggy leaves is applied on the forehead to treat migraine/ headache.

Other products: The ash obtained from dried husks and seeds, is used for soap making in West Africa. Fruits have the property of producing saponin, which lather in water and are used for washing.

SERVICES
Erosion control: B. sapida roots protect soil from water erosion.

Shade or shelter: It is a useful shade tree in homes, parks and gardens.

Soil improver: Soils under the B. sapida canopy have more organic matter and greater potassium contents (Muoghalu & Awokunle 1994).

Ornamental: Commonly planted along avenues, it enhances aesthetic value of urban landscapes.

TREE MANAGEMENT
Traditionally between January-March and June-August the fruits are harvested and the arils removed and cleaned in preparation for cooking.

FURTHER READNG

Abbiw D. 1990. Useful plants of Ghana. Intermediate Technology Publications and the Royal Botanical Gardens, Kew.

http://people.delphi.com/eide491/akee.html

Muoghalu JI and Awokunle HO. 1994. Spatial patterns of soil properties under tree canopy in Nigerian rain forest region. Tropical Ecology. 35(2): 219-228.

SUGGESTED CITATION

Orwa C, A Mutua, Kindt R , Jamnadass R, S Anthony. 2009 Agroforestree Database:a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp)