

***Avicennia marina*****Verbenaceae****Indigenous**

**COMMON NAMES:** **Bajun:** Mutu; **Digo:** Mudzwi; **English:** Mangrove; **Giriama:** Mtswi, Mudzu; **Swahili:** Mchu, Mtsu.

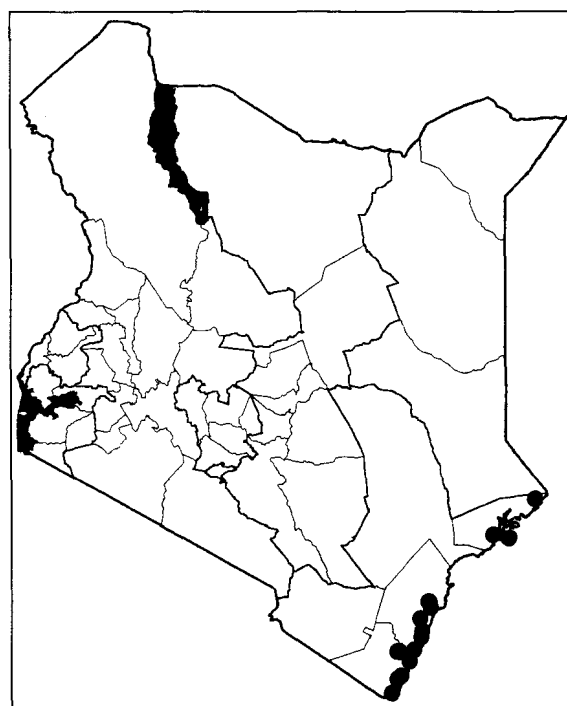
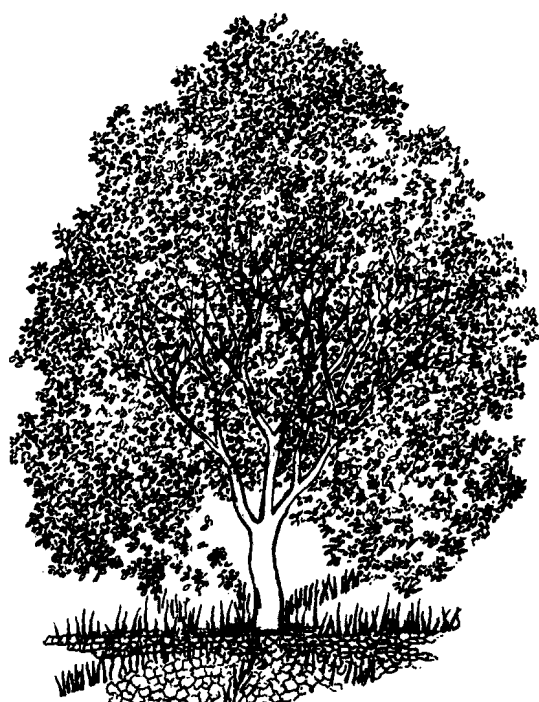
**DESCRIPTION:** An evergreen spreading mangrove shrub or tree, usually 3–5 m, with thick branches, dense foliage, **rounded crown and dense, pencil-like breathing roots**. It arises from the extensive horizontal underground root system. A forest of breathing roots **grows upwards emerging like fingers from the mud, 20–50 cm high**. **BARK:** Smooth and powdery, yellow-green. A resin exudes when cut. Young branches angular with short white hairs. **LEAVES:** Opposite, long-oval, 4–11 cm, **thick and stiff**, the tip usually pointed, narrowed to a **short stalk, grey-white below, but olive-green above**. **FLOWERS:** Very small and **fragrant, cream-yellow-orange** (turning black), rather fleshy, in **dense rounded heads** on branched stalks to 3 cm, square in section; borne towards branch tips. They have a **pungent scent** and are visited by ants. **FRUIT:** A **grey oval capsule**, flat and pointed, somewhat hairy, 1.2 cm across, splitting into 2 parts to release seeds. **The seeds germinate on the tree, producing a taproot**, before the fruit falls.

**ECOLOGY:** A mangrove tree found along muddy shores of the Red Sea and on suitable shores in East Africa, south through Mozambique reaching the northern parts of the coast of South Africa, where it forms a part of the mangrove complex; often dominant, found on the landward side of coral rag, mud and sand in the area between low and high tide. Also a pioneer in swamps. Silt and mud accumulate around its air roots, so changing conditions for later plant arrivals. Flowers in October and November.

**USES:** Firewood, charcoal, poles, posts, ribs for dhows, beehives, medicine (leaves and roots), fodder (leaves for

camels), fish feed and breeding habitat, coastal erosion control.

**PROPAGATION:** Root suckers, seedlings. Planting is usually not needed because natural regeneration is so successful.



## ***Avicennia marina* (cont)**

**SEED:** Seed germinates on the tree.

**treatment:** No treatment.

**storage:** No storage.

**MANAGEMENT:** Mangroves are rarely cultivated but their silviculture has been attempted in some areas of the world and is an established practice in some Asian countries. Most species seem to grow rapidly if conditions are conducive.

**REMARKS:** Leaves falling into the sea serve as fish feed. The wood is fairly dense and durable, suitable for poles and boat building. The bitter aromatic resin from the bark has medicinal uses in other parts of Africa. Mangrove charcoal is exceptional. It burns steadily, giving off intense heat without sparks. It has a very high calorific value and leaves little ash. The tree is being overexploited on Kenya's north coast for firewood and other uses.

Mangroves are shrubs or trees adapted to growing in the zone between the high- and low-tide areas of ocean coastlines, particularly in the more protected areas such as creeks. Each species occupies a specific niche within the moisture and salt gradient from the sea. Occasionally, mangroves form thick forests. True mangroves have special adaptations such as stilt roots (as in *Ceriops* and *Rhizophora*) or finger- or knee-shaped breathing roots (pneumatophores) arising from the mud or sand. Some have viviparous seeds (i.e. seeds that germinate while still attached to the mother plant).

Mangroves cover some 45 million hectares of shallow water and muddy tidal flats throughout the tropics and subtropics. These flats are sensitive ecosystems and therefore generally of great ecological importance. Mangroves need to be flushed with fresh water at least one season every year. Mangrove forests are unusual in that only a few species are found in each. They are normally free of undergrowth except around their margins, where other salt-tolerant plants abound. Over-use of mangrove forests is an issue of concern in most parts of the world where they occur.

**FURTHER READING:** Beentje, 1994; Bein et al., 1996; National Academy of Sciences, 1980, 1983; Noad and Birnie, 1989; Palgrave and Palgrave, 2002.