

**LOCAL NAMES**

Amharic (bisana); English (broad-leaved croton); Luganda (musogasoga); Shona (tambukh); Tigrigna (tambush,tambuk,islami)

**BOTANIC DESCRIPTION**

*Croton macrostachyus* is a deciduous tree 3-25 m high, although more commonly 6-12 m; crown rounded and open with large spreading branches. Bark pale gray or gray-brown, finely reticulate, fairly smooth, finely fissured with age; slash reddish; shoots densely and shortly hairy.

Leaves large, green, turning to orange before falling, ovate, base subcordate or rounded, apex acuminate, margin crenulate-serrulate or subentire, 5-19 x 3.5-15 cm, stellate hairy but more densely so beneath on long stems crowded at the ends of branchlets; veins prominent with 2 stalked glands just visible at the base of the leaf, paler below due to soft hairs; texture more or less furry, margin slightly toothed.

Flowers creamy to yellow-white, sweetly scented, to 3 mm long, dioecious or at least on separate shoots, in erect spikes, all over the tree, sometimes a few females accompanying the males, appearing only briefly with the flower spike turning down as fruits mature. Male inflorescence up to 25 cm long, flowers pedicellate. Female inflorescence usually less than 10 cm long and subsessile.

Fruits green when young, turning grey at maturity, on drooping spikes to 30 cm long, 3-lobed, 8-9 x 8-10 mm, stellate-pubescent covered at 1 end by a soft, creamy envelope. Fruits mature when still on the tree, splitting open with a sharp noise to release seeds. Each pea-sized capsule contains 3 shiny grey seeds with a soft, cream aril.

The generic name is derived from the appearance of the seed, for 'croton' is based on the Greek word for a tick. The specific epithet is from the Greek macro- (large) and -stachyus (relating to a spike) hence "with a large spike".

**BIOLOGY**

In Kenya, flowering is observed in Kakamega District in March and April; in Nyeri, Meru and Kericho Districts in June and July; and in Pokot District in August and September. In Nigeria, flowering occurs in March to May and fruiting from January to March. After pollination by insects, fruit development takes 3-5 months.



*C. macrostachyus*: A representative tree at Kakuzi Ranch, Kenya. (Paul K.A. Konuche)



Shade trees: *C. macrostachyus* shade trees in pastureland, Kakuzi, Kenya. (Paul K.A. Konuche)



Pure stand: *C. macrostachyus* growing as a pure stand at Kakuzi Ranch, Kenya. (Paul K.A. Konuche)

**ECOLOGY**

*C. macrostachyus* is common in secondary forests, on forest edges along rivers, around lakes, in moist or dry evergreen upland forests, woodlands, wooded grasslands or clump bushland and along roadsides. It is associated with Juniperus-Podocarpus habitats and also occurs in the warmer parts of the montane rain forests and semi-tropical rain forests. Outside the forests, in wetter areas, the species is widely distributed. It is frequent in Uganda and common in the impenetrable Bwindi and in Kibale Forests.

**BIOPHYSICAL LIMITS**

Altitude: 200-2000 m, Mean annual rainfall: 150-1200 mm

**DOCUMENTED SPECIES DISTRIBUTION**

Native: Eritrea, Ethiopia, Kenya, Nigeria, Tanzania, Uganda

Exotic:



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**

Fodder: Leaves can be used as fodder.

Fuel: Mainly used for firewood and the production of charcoal, but it burns with a rather unpleasant spicy odour.

Apiculture: This species produces a dark-ambered honey with strong flavour.

Timber: The wood is of medium weight, moderately soft, perishable and susceptible to attack by wood borers. It is used for heavy-duty flooring, poles and tool handles.

Poison: Seeds and resin are poisonous.

Medicine: Boiled leaf decoction is drunk or ashes taken orally as treatment for cough; juice from fresh leaves is applied on wounds to hasten clotting. Root decoction is used as an anthelmintic for tapeworm, as a purgative, and for malaria and venereal diseases. Bark from the stems and roots is boiled in water and newly born babies are bathed in the mixture as a remedy for skin rash.

**SERVICES**

Erosion control: *C. macrostachyus* is employed in soil conservation.

Shade or shelter: Trees are commonly planted for the useful shade that they provide.

Soil improver: Leaf fall provides mulch and green manure.

Ornamental: The attractive tree can be planted in amenity areas.

Intercropping: *C. macrostachyus* is suitable for intercropping.

**TREE MANAGEMENT**

Trees are fairly fast growing on good sites but grow slowly on drier sites. Lopping, pollarding and coppicing are suitable practices.

**GERMPLASM MANAGEMENT**

Fruits are sun dried to release seeds and can be stored for some months if kept cool, dry and free from insects. Seeds can be stored for at least 2 years when dried to below 8% mc and stored cool (20 deg. C or less). There are about 16 000-27 000 seeds/kg.

**PESTS AND DISEASES**

Insects usually damage seeds while still on the tree.

**FURTHER READNG**

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**SUGGESTED CITATION**

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