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Azanza garckeana (F. Hoffm.) Exell & Hillc.

Taxonomy and nomenclature

Family: Malvaceae

Synonyms: *Thespesia garckeana* F.Hoffm., *Shantzia garckeana* (F. Hoffm.) Lewton

Vernacular/common names: snotappel (Afrikaans); chinga, mukole (Bemba); African chewing gum, azanza, quarters, snot apple, tree hibiscus, wild hibiscus (English); muneko (Lozi); mukole (Lunda); uxhakuxhaku (Ndebele); mkole (Nyanja); mutohwe (Shona); mtobo (Swahili); muneko (Tongan); morajwa (Tswana);

Distribution and habitat

Indigenous to Eastern and Southern Africa. From the South of Kenya into Tanzania, Malawi, Zambia, Zimbabwe, Mozambique extending into Northeastern Transvaal in South Africa and to the west into the Eastern-most part of Botswana around Francistown and in the Caprivi Strip. To the north found in Sudan, in the Jebel Marra and Nuba Mountains at altitudes of 1150-1350 m. It has possibly been introduced and naturalised in Nigeria.

Common in dry forest types such as miombo woodlands, wooded grassland and *Acacia* woodlands from sea level to 2000 m altitude with annual rainfall of 250-1250 mm. It is a pioneer tree found in fallow land and on termite mounts. As a typical pioneer species, it is highly light-demanding. It is drought resistant and tolerates light frost.

Uses

The fruits have a very high energy content, about 8.1 kJ/g. They are consumed fresh or dried and stored and used in porridge as a relish. The fruits are often marketed locally. The wood is easily worked but generally only suitable for small building needs such as house frames, poles and oxen yokes. It is highly valued for smaller items such as spoons, carvings, combs and tool handles. The wood is also used for firewood and charcoal. The inner bark is used to produce good quality rope fibre.

Free ranging cattle browse the tree and it may have a potential as a fodder. In a preference trial *Azanza garckeana* leaves was eaten by cattle together with leaves from well-known fodder species. However, low digestibility due to secondary compounds may complicate the use as fodder.

Botanical description

A small to medium sized tree, normally 3 - 13 m tall and up to 25 cm diameter at breast height. It has been found as tall as 20 m and as thick as 45 cm DBH. The bark is rough, dark-grey or brown in colour and cracks lengthwise and becomes flaky. The leaves are alternate, simple, up to 20 x 20 cm, but usually about 8 to 12 cm long. The upper surface is covered with harsh stellate hairs and the lower surface with soft hairs. Flowers are showy, yellow aging to orange-red, with a dark reddish-purple patch at the base of each petal. The flowers are up to 6 cm in diameter but do not expand fully. They are borne solitary in the axils of the leaves near the branch-ends. The flower is bi-sexual with all parts in fives.

Fruiting branch. Tanzania. Photo: Mogens Krog

Fruit and seed description

Fruit: the fruit is an almost spherical woody capsule, 2.5 to 4 cm in diameter, with dense short hairs. It is divided into five sections and when mature it is yellowish to brownish-green in colour. It opens slowly. The fleshy and sticky pulp inside contains five seeds, one in each chamber.

Seed: the seed is hemispherical 7 x 10 mm and covered in brownish woolly floss.

Flowering and fruiting habit

The trees are evergreen when growing in warmer areas but in colder regions semi-deciduous. Already two years after establishment the tree begins to produce fruits. Flowering generally takes place during the rainy season and fruits ripen in the dry season. It takes 6 months from flower fertilisation until the fruit is ripe. Time of flowering differs between locations within the area of distribution. To the north in Sudan flowering begins in October and ends in January and in Southern Africa it flowers from December to May.

Harvest

The fruits stick to the tree when mature and have to be picked. Competition from local people picking the fruit may be a problem.

Processing and handling

The fruit is split open by hand to release the seed. After cleaning, the seeds are dried in the sun. 10 kg of fruits produce 1 kg of seeds or about 4000 seeds.

Storage and viability

The seeds are orthodox, and when dried to 7-10% moisture content and stored in air-tight containers they retain high viability for several years.

Dormancy and pretreatment

Normally the seed does not need pretreatment but in some cases scarification, e.g. by nicking may be necessary.

Sowing and germination

The seeds can be sown in seedbeds or in containers. Direct sowing is also possible. Germination is very good and uniform without treatment. It reaches 40% after 15 days and 80% after 20 days from sowing. 100% germination has been found after scarification.

Selected readings

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Small tree. Gairo, Tanzania. Photo: Mogens Krog

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