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TRANSFORMING LIVES AND LANDSCAPES

Acacia nilotica (L.) Del.

Taxonomy and nomenclature

Family: Fabaceae **(**Leguminosae), Mimosoideae
Synonym: *Acacia subalata, A. scorpioides, A. arabica, Mimosa arabica, M. nilotica.*
Vernacular/Common names: Tuwer (Somali), Nunga, Mgunga (Swahili), Babul (int. trade name).
Subspecies: 9 subspecies / varieties are recognised, the most important are subsp. *adstringens;* subsp. *kraussiana;* subsp. *nilotica; subsp. tomentosa.*

Distribution and habitat

Acacia nilotica is found throughout sub-Saharan Africa from west to east extending into southern Africa as far as Botswana and south-western Asia with common occurrence in Iran, Iraq, Pakistan and dry zone India. It has been introduced into cultivation in both Australia and southern America and Mexico.

Subsp. *nilotica* occurs grows in Sahel from Senegal over Sudan and the Arabian peninsula to India. Subsp. *kraussiana* is a more southern species.

Natural distribution range (countries) of *Acacia nilotica.*

The species occurs from 0-1340 masl with 200-1270 mm mean annual rainfall. It is light demanding, drought resistant and tolerate seasonal waterlogging. Its natural growth niche is particularly along rivers and streams, and near ponds. However, it also occurs abundantly away from water in dry areas.

Uses

Acacia nilotica is one of the most important multipurpose tree species of dryland Africa and South Asia. The wood is hard and used for general construction purposes and implements. It is fairly termite resistant. The wood yields an excellent fuelwood. Flowers are attracting bees and make a good base for apiculture. Pods are nutritious and make a high quality fodder for livestock especially during the dry season. The plant has alleged medical properties as the bark is used for treatment of cough, cancers, tumours of the ear, intestine pains an the roots to treat impotence.

Botanical description

Acacia nilotica is a small tree growing to 12-15 meters with a broad rounded (rarely umbrella shaped) crown. On pooorer soils it mainly grows as a shrub.

Bark dark brown, cracking, underbark rust red. Young branchlets light brown, hairy, covered with lenticels. Spines (thorns) in pairs, straight, thin, sharp, up to 10 cm long. Leaves bipinnately compound with 2-11 pairs of pinnae, 7-25 pairs of leaflets. Flowers in bright yellow globose heads, 1.2 – 1.5 cm in diameter.

Fruit and Seed description

Fruit: The fruit is an indehiscent pod, which shows large variation between different sub-species in terms of size, form and constriction between the seed. Subsp. *tomentosa* is deeply constricted between the seeds, while subsp. *nilotica* and subsp. *subalata* and *kraussiana* has a leathery appearance and not or very little constricted between the seeds. There are 8-12 seeds per pod, average approx. 11.
Seed: Seeds are extremely hard-coated. They are oblong, 6½-11 mm long, 12-14 mm wide and 3½-4 cm thick, dark brown to blackish brown. Pleurogram distinct, oblong, creamy white. Seed weight variable; 1000 seed weight 100 – 250 g, equivalent to 4000 to 10000 seeds per kg

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Flowering and fruiting habit

Flowers are nectar-less. Most flowers are functionally male with a few hermaphrodites and are mainly bee-pollinated. Temperature affects flowering and fruiting. In the Sudan *A. nilotica* flowers irregularly but generally between June and September and seed fall takes place from March to May. In Australia trees flower from March to June and green pods are produced within four months but ripe pods fall from November to February.

Harvest

Harvest by picking up pods under the trees or beating or shaking fruit bearing branches. Harvest time is not critical unless seeds are strongly attached by bruchids or pods are removed by browsers.

Processing and handling

Seeds are extracted from dried pods by pounding, threshing or other type of mechanical disintegration of pods. Different sub-species exhibit great variance in terms of ease of extraction. Seeds are very hard and are rarely damaged by mechanical extraction.

After disintegration of pods, seeds are extracted by a combination of sifting and winnowing.

Alternatively pods can be fed to goats and seeds, most of which pass undamaged, and extracted from the dung.

Storage and viability

The seeds exhibit orthodox storage behaviour, and dry seeds can be stored for several years even at ambient temperature. Bruchid infested seed can be damaged during storage but the insects rarely re-infest new seed in storage.

Dormancy and pretreatment

Seeds exhibits very strong physical dormancy and very few seeds will germinate without pretreatment. Manual pre-treatment by e.g. hot wire burning, filing or nicking is most effective. Dipping into boiling water may be used for non-stored seed but has very small effect on dry seed. Bulk treatment with concentrated sulphuric acid for 10-20 minutes is most efficient. There is no other known dormancy type.

Sowing and germination

Germination is epigeal. Seeds may be sown in pots or seed beds for later transplanting. Germination is usually fast with paracotyledons unfolding after 4-5 days

Selected readings

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Seedleaflets are a series of species wise extension leaflets for tropical forest species with special emphasis on seed technology. Leaflets are compiled from existing literature and research available at the time of writing. In order to currently improve recommendations, FLD encourage feedback from users and researchers who have experience with the species. Comments, corrections, improvements and amendments will be incorporated into future edited leaflets. Please write your comments to: SL-International@life.ku.dk