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Acacia mellifera (Vahl) Benth.

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SEED LEAFLET

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TRANSFORMING LIVES AND LANDSCAPES

Acacia mellifera (Vahl) Benth.

Taxonomy and nomenclature

Family: Fabaceae (Leguminosae), Mimosiodeae
Synonym: *Acacia detinens* Burch.; *Acacia senegal* ssp. *mellifera* (Vahl) Roberty; *Mimosa mellifera* Vahl.
Vernacular/Common names: Black thorn, hook thorn, wait-a-bit thorn (Engl.); kikwata (Swahili); bilel, lanen, laner (Somali); swartaak, swarthook (Afrikaans); kedad, kitir, kitr (Arabic).

Distribution and habitat

Acacia mellifera has two separate distribution areas in Africa: Its largest distribution is in the Sahelian east Africa extending into the Arabic peninsula; another distribution area is dry southern Africa in Namibia and Botswana.

The species commonly occurs in dry savannah sites in western, eastern and southern Africa with mean annual rainfall 250-650 mm; sometimes extending up to 1500 masl on rocky hillsides. It thrives on a variety of soil types from sandy to heavy clay including vertisols. It can grow in mixed stands with e.g. *Commiphora*, *Salvadora*, *Balanites aegyptiaca* and other acacias. It is a strong regenerator both by seed and root suckers and sometimes form large stands of 2-3 m high, dense, impenetrable thickets. Absence of grass fires tends to promote regeneration by *A. mellifera*.

Uses

Acacia mellifera is a multipurpose tree species of the dry and harsh environment. Wood is small and only applicable for small construction purposes e.g. native huts and fuel. Foliage and pods are eagerly browsed by camels and goats. Flowers are a good source of honey for bees. The plant has alleged medical properties as the bark is used for stomach-ache, sterility, pneumonia, malaria and syphilis.

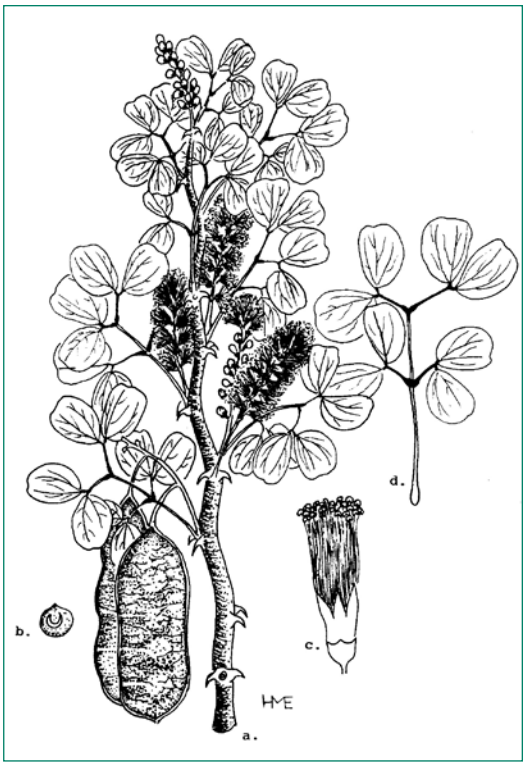
The plant has a shallow and aggressive root system, limiting its use in farms with crops.

Botanical description

Acacia mellifera is a low branched tree or shrub, rarely more than 5-6 m. The bark is smooth and light brown, turning blackish with age. Thorns in pairs, small, black, sharp and hooked.

Compound leaves with two pinnae, each with a single pair of leaflets. Leaflets elliptic 0.6-2 cm long and 0.6-1.2 cm wide, glabrous.

Flowerbuds reddish, flowers white or cream coloured in elongated spikes, up to 3.5 cm long. Individual flowers small with ½-1½ mm pedicel, 1 mm calyx and 2½-3½ mm corolla.



A mellifera flowering and fruiting branch. From: El Amin 1990.

Fruit and Seed description

Fruit: The fruit is a dehiscent pod containing 2-3-seeds. It is papery and reticulate, straw-coloured, flat, elongated, 2½-5½ cm long, 18-23 mm wide with pointed apex.
Seed: Seeds are hard-coated. The form is circular to lenticular, 7-9 mm long, 5-6 mm wide, compressed, 1.5-1.8 mm thick. Light brown-olive green, smooth. Pleurogram horse-shoe shaped. Funicle redbrown. 1,000 seed weight, 42-47g; there are approximately 20 000 seeds/kg

Flowering and fruiting habit

Reproduction may start after 3 years. Flowering takes place in the dry season, usually before leaf flush, - in bimodal climates two flowering events may take place. Development from flowering to fruit takes about 3-4 months.

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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

Pods will open upon drying and seeds can be released with gentle mechanical impact on the pods. Pods are light and papery. Most of them can be removed by hand. Small pieces of pod and other light debris can be removed by winnowing or other air blowing method.

Storage and viability

The seed 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. Viability can be maintained for several years in hermetic storage at 10°C with 4.5-9% mc..

Dormancy and pretreatment

Seeds exhibit moderate physical dormancy, with about 10% fresh seed germinating w/o pretreatment. Bulk pretreatment by submerging seeds in boiling water and letting the seeds cool and imbibe in water overnight. Alternative is 5-15 minutes in concentrated sulphuric acid followed by careful rinsing.

Sowing and germination

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

Branchlet with flowers. Photo: James Wolstencroft

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