

# SPECIES

SEEDBALLS from Kenya for East Africa



## DRYLAND TREE SPECIES THE ACACIAS

### Acacia kirkii

Kirk's Acacia/Flood Plain Acacia



Flood Plain Acacia. Moist areas, medium sized 2-15m branching from base. Grows from 1,500-2,500m in wooded grasslands and river valleys. Fast growing with green/yellow bark on young trees brown on old ones. Fuelwood, charcoal, tea from the bark and the pods are fodder for livestock and wildlife. Also an excellent source of forage for bees.

### Acacia senegal

v. kerensis



A small tree, growing to about 2-6m high, occasionally becoming taller under optimal climatic conditions. The plant is usually low branched with a short stem and many upright twigs that form umbrella-shaped crown. The grey-barked Acacia senegal, which is a thorny leguminous tree produces the highest quality Gum Arabic.

### Acacia xantho

v. kerensis



Fever Tree or Naivasha Thorn. Acacia xanthophloea is a large tree, 15-25 m tall, with a crown that is somewhat spreading, branching fairly up the trunk. Bark smooth, slightly flaking, yellow to greenish-yellow.

### Acacia tortilis

Umbrella acacia



Alkaline and volcanic soils, drought resistant, slow growing hardwood and large when mature. 5-21m tall, dark brown fissured bark. Amboseli and similar semi-arid environments.

### Acacia nilotica



A perennial shrub or tree, 2.5-10 (-20) m tall. Branches spreading, forming a dense flat or rounded crown with dark to black coloured stems. Bark thin, rough, fissured, deep red-brown. Thorns thin, straight, light-grey in young trees, mature trees commonly without thorns. Flowers prolific & golden yellow. Used as forage during drought, foliage and seeds are eaten by a wide range of herbivores. Highly valued as fodder and fuelwood in regions of semi-arid Africa and India. Used as a pioneer

### Acacia gerrardii



Grows to 15 m tall, less frequently remaining as a shrub. Has deep roots; trunk to 20-30 cm in diameter; bark rough and fissured, grey to blackish brown or black; crown flat, umbrella-shaped or irregular, usually narrow and open. Thorns are paired and grey, usually up to 1.5 cm long. Flowers are white or cream & scented. The bark can be used for making rope and twine, the leaves and pods are eaten by livestock. Acacia gerrardii is considered a useful tree in grazing land as it provides only light shade and does not depress growth of the fodder species beneath. The thorny branches are used to make fences for

species in land rehabilitation and as a barrier to desertification. Non-forage/timber uses include gum/resin, tannin /dyestuff & traditional medicine.

livestock enclosures ('bomas'). The wood is used as timber, for carvings, small furniture, poles, posts, tool handles, for charcoal production, and as fuelwood. A soup is made from the bark. Honey bees feed on the flowers.

## Acacia seyal

Red Acacia



A small to medium-sized tree, growing to 17 m tall and a characteristic feature of the tree is its rust-coloured powdery bark. Grows well in arid and semi-arid areas. (Sidenote; the wood was used by ancient Egyptians to make the Pharaohs' coffins).

## Acacia mellifera



A common and wide-spread low and spreading Acacia species valued for charcoal, browse (both wildlife and domestic animals) and honey production. Acacia mellifera is commonly called Blackthorn or Wait-a-Bit thorn due to distinctive curved 'cats claw' thorns, useful as security barrier along fence-lines. It's considered a robust dryland tree, rarely exceeding 7m in height. Seeds are relatively large, germination and early growth is rapid.

## Delonix elata



Delonix Elata - cream peacock flower Delonix elata is a deciduous tree with a rounded spreading crown and drooping branches, usually growing 5 - 15 metres tall

The tree is harvested from the wild for local use for food, medicine, wood etc - the leaves are sometimes sold as a food in local markets. A distinct, magnificent tree in bloom, it is suitable for cultivation in gardens, avenues and amenity parks

Delonix elata has a widespread distribution and is also cultivated for shade, green manure, among other things.

### Habitat

East tropical Africa - Deciduous thickets and bushland, often in hot dry Acacia-Commiphora bush and on rocky slopes or by streams or dry river beds, at elevations from 400- 1,400 metres

The tree is used for shade and is widely grown as a live fence in East Africa

The tree has potential use in soil conservation projects It has been successfully used in protecting channel and river banks

Fast-growing and fixing atmospheric nitrogen, it is a good tree for reforestation of difficult sites and, with its low crown, is effective as a shelter belt. The leaves are used as a green manure. Rich in Magnesium, they yield 50 - 200 kg of mulch per year

The yellow wood is even-grained and easily worked It is used traditionally for tool handles, grain mortars, beer containers, milk pots, beehives, clogs, wooden spoons and cups and is also suitable for cabinet work, carvings and utensils

The wood is used for fuel. A very good fuel wood, it has high density, calorific value and carbon percentage, with low silica and nitrogen.

## Vachellia elatior



is a spiny, evergreen tree with a rounded or flattish crown of pendulous branches; it can grow 7 - 40 metres tall.

The tree is harvested from the wild for local use as a medicine and source of wood. It can be planted along rivers to stabilize the soil.

East tropical Africa Sandy riverbanks in short grass savannah, often with Acacia tortilis; along rivers and lakes, also near dry luggas and drainage lines; at elevations up to 1,750 metres It is found in areas where the mean annual rainfall is within the range 500 - 1,200mm Grows best in a sunny position. The fastest growth occurs on sites such as river beds where there is a good supply of moisture in the soil

This species has a symbiotic relationship with certain soil bacteria, these bacteria form nodules on the roots and fix atmospheric nitrogen. Some of this nitrogen is utilized by the growing plant but some can also be used by other plants growing nearby.

A decoction of the bark is used to treat diarrhoea and gonorrhoea, and also as a remedy for coughs

The bark of all Acacia species contains greater or lesser quantities of tannins and are astringent. Astringents are often used medicinally - taken internally, for example, they are used in the treatment of diarrhoea and dysentery, and can also be helpful in cases of internal bleeding. Applied externally, often as a wash, they are used to treat wounds and other skin problems, perspiring feet, some eye problems, as a mouth wash etc. Many Acacia trees also yield greater or lesser quantities of a gum from the trunk and stems.

The tree can be planted along the banks of rivers in order to stabilize the soil

The wood is used to make drinking vessels - The wood is a good fuel and produces a good quality charcoal



Our favorite multi-use tree:  
The generic name 'acacia' comes from the Greek word 'akis', meaning 'point' or 'barb', these are an in-built self defense mechanism to protect themselves against browsers.

## Acacias

All of these acacias provide the following uses;

### COMMERCIAL USES

**FODDER-** Foliage and seed pods provide food for wildlife, birds and livestock.

**APICULTURE-** Acacia trees produce excellent bee forage.

**FUEL-** Very good quality firewood and charcoal.

**TIMBER-** The wood is typically hard and heavy in mature trees with a beautiful grain. They can also be used to make poles and posts.

**MEDICINE-** Acacia trees are renowned for their use in traditional medicine in Kenya.

### ECO-SYSTEM SERVICES

**SHADE OR SHELTER-** Acacias provide some of the only shade in many parts of Kenya and are also nesting sites for birds and many insects.

**NITROGEN FIXING & EROSION CONTROL-** All acacias fix atmospheric nitrogen and their excellent root systems help stabilize the soil.

**ORNAMENTAL-** This well shaped decorative tree is a good candidate for keeping the natural look to amenity areas.

**BOUNDARY, BARRIER & SUPPORT-** Trees well suited to being planted as live fences and to beautify roadsides. 2-15m branching from base. Grows from 1,500-2,500m in wooded grasslands and river valleys. Fast growing with green-yellow bark on young trees, brown on old ones. Fuel wood, charcoal, tea from the bark and the pods are fodder for livestock and wildlife. Also an excellent source of forage for bees.

# HIGHLAND TREE SPECIES

## Dombeya torrida



Dombeya is a fast-growing highland hardwood, native to areas within East Africa between 1500 to 3000 m altitude. Its profuse seasonal flowering is of value to bees and the honey industry. Dombeya wood is used for fuel including charcoal, and a variety of traditional tools, including bows. Seeds germinate quickly upon distribution after the onset of rainy

## Sesbania sesban

### Sesbania



A narrow-crowned, deep-rooting single or multi stemmed shrub or small tree, 1-7m tall. The trees usually have a main stem but may develop many side branches if widely spaced. S. sesban grows well all over Kenya and is significant in extending the nitrogen-fixing forage trees into cooler, higher elevation regions of the tropics. It has outstanding

## Acacia abyssinica



Acacia abyssinica, known as the 'Paperbark acacia' is a mid to highland species (500-1800m) within semi-arid areas of East Africa. It is a tall Acacia, up to 20m with flaky red to yellow bark, and is useful for wildlife browse, as well as wood and charcoal fuel. The white 'pompom' flowers are favoured by bees. Abyssinica is quick to germinate with the

seasons and establish quickly. Dombeya trees are important for stabilizing soil in hilly terrain.

ability to withstand waterlogging and is ideally suited to seasonally flooded environments. It is common along streams, swamp banks and moist and inundated bottomlands and old quarries.

onset of rains and co-exists well with other species of trees in a semi-arid environment.

## Olea Africana - African Olive

**Boran (Ejarse); English (brown olive, wild olive, Indian olive, African wild olive, olive); kamba (Muthata); Keiyo (Yemit); Kikuyu (Mutamaiyu); Kipsigis (Emitiot); Bukusu (Kumunyubuti); Luo (Kang'o); Maasai (Oloirien) Marakwet (Yemit); Meru (Muthata); Nandi (Emidit); Ogiek (Yemdit); Sabaot (Yemit); Samburu (Tamiyai); Somali (Wera); Taita (Mkumbi); Tugen (Yemit); Turkana (Euripei)**



African olive is a slow-growing evergreen shrub or a small tree with a dense, rounded crown; it usually reaches a height of 5 - 10 metres, but occasional specimens can be up to 18 metres tall

The tree is harvested from the wild as a source of food, medicines and wood for local use. It is planted for reforestation and is also grown as an ornamental

### Habitat

Widely distributed in its native range of southern Africa occurring in a variety of habitats, usually near water, on stream banks, in riverine fringes, but also in open woodland, among rocks and in mountain ravines

A plant of moist to semi-arid areas of the tropics and subtropics, where it can be found at elevations up to 2,700 metres Plants grow best in areas where the mean annual temperature falls within the range 22 - 28°C, though they can tolerate 15 - 35°C Plants can resist some frost - dormant plants are killed by temperatures of -4°C, whilst young growth can be damaged at -1°C Prefers a mean annual rainfall in the range 500 - 1,000mm, tolerating 300 - 1,500mm

Requires a sunny position, succeeding in most soils so long as they are well-drained. Plants can succeed in soils of low fertility. Established plants are very drought tolerant Prefers a pH in the range 6.5 - 7.5, but tolerates 6 - 8.5

Fruit A much thinner flesh, but it can be used in the same way as olives The ovoid, thinly fleshy fruit is about 10 x 8 mm tapering to a sharp tip, dark brown or black when mature ; An oil is extracted from the seed -as good quality as the ordinary olive oil; The leaves are soaked in a pot containing local brew to make it strong

The dried leaves are used as a tea substitute. A root or bark decoction is used as a remedy for malaria

The tree is planted for reforestation Its high drought tolerance suggests that it is a good candidate for reforestation in semi-arid zones

The heartwood is dark brown or red-brown to yellow with dark figuring; the sapwood is light brown. The wood is fine-textured, hard, heavy, close and even grained. It polishes and finishes well. It is highly prized for turning, and is often used to make ornaments such as wall clocks and vases. Jewellery items such as beads, brooches and bangles are also made from wild olive wood. Although the tree does not usually produce sawable logs or branches, there are still several furniture makers that, with great effort produce furniture from the limited quantities of timber. The wood is also used locally for building poles, flooring, carvings, pestles and fencing posts. The wood is used as a fuel and to make charcoal.

## Erythrina abyssinica



Erythrina abyssinica is a much-branched, deciduous shrub or tree with a usually rounded, spreading crown. It grows from 1 - 15 metres tall, with occasional specimens as much as 24 metres tall. The bole is usually short and up to 60cm in diameter; it is armed with woody bosses; the bark is corky; and the branches are armed with spines 4 - 8 mm long and densely clothed with fine tomentum. A veritable multipurpose tree, it is grown to protect the soil and provide shade, has a wide range of medicinal uses and supplies a number of other commodities including dye material, live fencing, craft material, wood and fuel. It is widely cultivated as a living fence and is also sometimes grown (especially in Cuba) as a medicinal plant. It is often grown as an ornamental and shade tree in tropical areas both within and outside its native range. The seeds contain a curare-like poison - If injected into the bloodstream, it acts as an anaesthetic that may cause paralysis and even death by respiratory failure. Found in various habitats including open woodlands, forest clearings, grasslands, and lowland woodlands from around 60 metres up to elevations of 2,000 metres or more except in very dry or high altitude areas. The flowers provide nectar and pollen for bees at the end of the dry season, strengthening bee colonies in this difficult period.

# GRASS SPECIES

**Eragrostis superba**

**Enteropogon  
macrostachyus**



#### Derivation of name and historical aspects

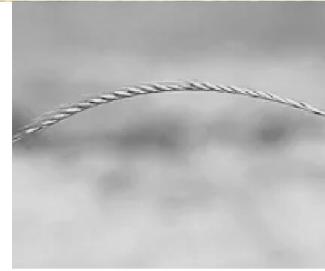
Eragrostis comes from the Greek eros meaning love and this possibly refers to the heart-shaped spikelets; agrostis means a grass. The species name *superba* is the Latin for splendid and is probably descriptive of the spikelets.

#### Description

Perennial up to 1 m tall, erect or lower culms (stems) bent; inflorescence variable as it is either a contracted (narrow) or open panicle, when open, then branches long and flexuous. The common names are very descriptive of the spikelets which are large, being up to 16 mm long, flat, have jagged edges, green, often flushed purple and when mature, break off as a complete unit. Flowering time is from August to May.

#### Distribution and habitat

This grass is found from the Free State and Kwazulu-Natal northwards to the Sudan usually on sandy or gravel soils occasionally on clay. Found mainly in disturbed places in the veld and roadsides, also grows on termitaria.



A tufted perennial about 90 cm high and inflorescence about 15 cm long. Occurs at 0 – 1800 m Above sea level. It's frequently found in bushed lands/dense bush. Prefers loose sandy loams and loams, but will grow on alluvial silts and rocky soils. Rainfall of about 575mm per annum. Drought tolerant. It prefers loose sandy loams and loams, but will grow on alluvial silts and rocky soils. Rainfall of about 575mm per annum. Drought tolerant.

Due to high germination capacity, the species fully covers the ground within a few seasons, and it can be planted in mixtures with other range grasses such as *Cenchrus ciliaris*. It is highly palatable and is normally commonly overgrazed due to high preference by livestock.

## Cenchrus ciliaris L



#### Distribution and habitat

It occurs in the more arid parts of southern Africa and tropical Africa, the Mediterranean areas, and in Arabia to India. Introduced to Australia and other hot, drier areas of the world where it has been imported as cultivated pasture. Foxtail buffalo grass grows in dry, warm parts. It grows in all types of soil, but mostly in sandy soil and other well-drained soil types. It is often found along roadsides where it utilizes the additional runoff rainwater.

#### Derivation of name and historical aspects

*Cenchrus* is derived from the Greek word *kegchros* which means a kind of millet. The species epithet *ciliaris* is Latin and means like an eyelash, or short hairs, possibly alluding to the hairy bristles surrounding the spikelets. The genus *Cenchrus* has 22 species, tropical and warm temperate; 1 species indigenous and 3 species naturalised in southern Africa; *C. ciliaris* is the only widespread species.

#### Ecology

Common in hot dry areas, especially on sandy soils where it is often ruderal (grows in waste places), and also often on termitaria, on all types of soil. *Cenchrus ciliaris* is wind-pollinated. It is adapted to fairly heavy grazing and a wide variety of conditions.

#### Uses

*Cenchrus ciliaris* is a palatable species with a high leaf production. It is one of the most popular cultivated pastures, especially in the more arid parts, with many commercially available cultivars. Foxtail buffalo grass can endure trampling.



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