

# Kew

PLANTS PEOPLE  
POSSIBILITIES



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SEPASAL is a database and enquiry service about useful "wild" and semi-domesticated plants of tropical and subtropical drylands, developed and maintained at the Royal Botanic Gardens, Kew. "Useful" includes plants which humans eat, use as medicine, feed to animals, make things from, use as fuel, and many other uses.

Since 2004, there has been a Namibian SEPASAL team, based at the National Botanical Research Institute of the Ministry of Agriculture which has been updating the information on Namibian species from Namibian and southern African literature and unpublished sources. By August 2007, over 700 Namibian species had been updated.

Work on updating species information, and adding new species to the database, is ongoing. It may be worth visiting the web site and querying the database to obtain the latest information for this species.

## Internet SEPASAL

New query

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 *Display help*In names list include:  synonyms  vernacular names and display: All  names per page*Your query found 1 taxon***Terminalia prunioides** M.A.Lawson [[1669](#)]

Family: COMBRETACEAE

## Synonyms

None recorded

## Vernacular names

Afrikaans	sterkbos [ <a href="#">1304</a> ] [ <a href="#">2136</a> ] [ <a href="#">3045</a> ] [ <a href="#">5082</a> ] [ <a href="#">5098</a> ]
Afrikaans (Namibia)	bloedvrugboom [ <a href="#">5087</a> ], deurmekaar [ <a href="#">1340</a> ] [ <a href="#">2136</a> ] [ <a href="#">5087</a> ] [ <a href="#">5098</a> ], deurmekaarbos [ <a href="#">5121</a> ], hardekoolboom [ <a href="#">1304</a> ] [ <a href="#">2136</a> ], vaalbos [ <a href="#">1304</a> ]
Barakwengo-Bushmen (Namibia)	kuù [ <a href="#">5087</a> ], tjérre [ <a href="#">5087</a> ]
Damara>Nama (Namibia)	llgaetab [ <a href="#">5095</a> ], llgaetahuo [ <a href="#">5095</a> ], †khee(r)as [ <a href="#">2136</a> ] [ <a href="#">5095</a> ] [ <a href="#">5098</a> ]
English	purple pod cluster-leaf [ <a href="#">5082</a> ], purple pod terminalia [ <a href="#">5082</a> ], lowveld terminalia [ <a href="#">1340</a> ]
English (Botswana)	purple-pod terminalia [ <a href="#">5092</a> ]
English (Namibia)	purple-pod terminalia [ <a href="#">5083</a> ] [ <a href="#">5088</a> ] [ <a href="#">5098</a> ] [ <a href="#">5121</a> ]
English (Southern Africa)	lowveld cluster-leaf [ <a href="#">3045</a> ]
Eunda (Namibia)	ohama [ <a href="#">5087</a> ]
Gciriku (Namibia)	uhama [ <a href="#">5087</a> ] [ <a href="#">5098</a> ]
German (Namibia)	Blutfruchtbaum [ <a href="#">5083</a> ] [ <a href="#">5087</a> ] [ <a href="#">5098</a> ] [ <a href="#">5121</a> ]
Giriama (Kenya)	mwanga [ <a href="#">50</a> ]
Heikum Bushmen (Namibia)	! eiaba [ <a href="#">5087</a> ]
Herero (Namibia)	omuhama [ <a href="#">5083</a> ] [ <a href="#">5087</a> ] [ <a href="#">5091</a> ] [ <a href="#">5095</a> ] [ <a href="#">5098</a> ] [ <a href="#">5121</a> ]
Himba (Namibia)	omuhama [ <a href="#">5087</a> ] [ <a href="#">5098</a> ]
Jul'hoan (Namibia)	!ù [ <a href="#">5088</a> ]
Khoekhoegowab (Namibia)	!eiaba [ <a href="#">5083</a> ], #khaiab [ <a href="#">5083</a> ], #kheas [ <a href="#">5083</a> ], #kheeras [ <a href="#">5083</a> ], heras [ <a href="#">5121</a> ], lgoo [ <a href="#">5083</a> ], llgaetab [ <a href="#">5083</a> ] [ <a href="#">5095</a> ], llgaetahuo [ <a href="#">5083</a> ]
Kung Bushmen (Namibia)	! eiaba [ <a href="#">5087</a> ], ! u [ <a href="#">5083</a> ] [ <a href="#">5087</a> ] [ <a href="#">5098</a> ]
Kwaluudhi (Namibia)	ohama [ <a href="#">5087</a> ]
Kwambi (Namibia)	ohama [ <a href="#">5087</a> ]
Kwangali (Namibia)	muhama [ <a href="#">5087</a> ] [ <a href="#">5098</a> ] [ <a href="#">5121</a> ]
Kwanyama (Namibia)	omuhama [ <a href="#">1304</a> ] [ <a href="#">5087</a> ] [ <a href="#">5098</a> ]
Kwanyama (Namibia) [plural]	omihama [ <a href="#">1304</a> ]
Kxoe (Namibia)	ku [ <a href="#">5083</a> ], tjerree [ <a href="#">5083</a> ]
Lozi	murumba [ <a href="#">1340</a> ]

Lozi (Namibia)	milumba [5083], mulumba [5083] [5087]
Mbalantu (Namibia)	omuhama [5087]
Mbukushu (Namibia)	mutororo [1340] [5087] [5098]
Nama (Namibia)	‡kheab [5087], ‡niob [5087]
Ndebele	ivikani [1340]
Ndonga (Namibia)	omuhama [5087] [5098]
Ngandjera (Namibia)	ohama [5087]
Nkolonkadhi (Namibia)	ohama [5087]
Nkumbi (Angola)	muhama [5087], omuhama [5087]
Norekau Bushmen (Namibia)	! oo [5083] [5087]
Oshiwambo (Namibia)	omuhama [5083] [5121]
Rukwangali (Namibia)	muhama [5083]
Rumanyo (Namibia)	uhama [5083]
Shambyu (Namibia)	uhama [5087] [5098]
Shangana	shashandzawu [1340]
Subiya	mochara [1340]
Taita (Kenya)	mwangati, mwalambe [50]
Tawana	machihara [1340]
Thimbukushu (Namibia)	ghutororo [5083]
Thimbukushu (Namibia) [fruit]	mutororo [5083]
Tjimba (Namibia)	omumama [5087]
Tonga	muvumbu [1340]
Tswana	mociara [1340]
Tswana (Botswana)	motsiara [5092]

## Distribution

Plant origin	Continent	Region	Botanical country
Native	Africa	East Tropical Africa	Kenya [3] [50] [1362], Tanzania [3] [50] [1362]
		South Tropical Africa	Angola [3] [1362], Mozambique [3] [1279] [1362] [5480], Zambia [3] [1362] [5481], Zimbabwe [3] [1279] [1362] [5419]
		Southern Africa	Botswana [3] [1279] [1362] [1669] [5104], Caprivi Strip [5121], Namibia [3] [1279] [1362] [1669] [5104], Transvaal [3] [1279] [1362] [1669] [5104]

## Descriptors

Category	Descriptors and states
DESCRIPTION	Deciduous [3] [50] [5121]; Erect; Multistemmed [3045]; Terrestrial; Shrub [3] [1279] [1362] [2136] [3045] [5082] [5098] [5104] [5121]; Tree [3] [50] [554] [1279] [1304] [1362] [2136] [3045] [5082] [5091] [5098] [5104] [5121]; Perennial [5104]; Thorny/Spiny - stems [1610];

	Foetid/Unpleasant - inflorescences [1279] [1340] [3045] [5092] [5121]; Plant Height 3-15 m [3] [1279] [1362] [5082] [5104]
CLIMATE	Not Frost Tolerant [388]; Frost Tolerant [5121]
SOILS	Deep [5082]; Limestone Parent Material [5121]; Shallow [5092]; Saline [388]; Gravels/Stony [5092] [5121]; Alluvial Soils [1279] [5082]; Sandy [388] [5121]; Dry [5092] [5121]; Clayey [5092]
HABITAT	Coastal Regions [3] [50]; Lowland [50] [1279] [5082]; Non-Coastal Regions [5082] [5121]; Woodland [3] [554] [1279] [5082]; Shrubland/Bushland/Scrub [5082]; Dominant within Stands of Natural Vegetation [5121]; Grassland/Forb-Land [50]; Invasive Species [5121]; Hillsides/Slopes [1279] [5082] [5121]; Outcrops/Kopjes/Inselbergs [5121]; Termitaria [5121]; Rocky Shores [1279]; Watercourses [1362] [5082]; Non-Permanent Watercourses [5121] [5327]; Flats [5092]; Pans [5121]; Plains [5121]; Altitude 30-1400 m a.s.l. [388] [1362]
PHYSIOLOGY	Drought Tolerant [5121]
WOOD PROPERTIES	Heartwood Brown/Shades of Brown [50]; Finish - Good [5092]; Durable in Marine Conditions [50] [1610]; Durable [50] [1257] [1610] [5092]; High Density [50] [1279] [1610]; Workability - Difficult [5092]
PRODUCTION AND VALUE	Traded Locally [5095]
SOURCES OF PLANTING MATERIAL	RBG Kew Seed Bank; Other Seed Sources [5181]
FURTHER DATA SOURCES	Botanical Illustration [3] [5092] [5121]; Additional References [5351] [5370]; Regional Distribution Map [3045]; Botanical Photograph [2136] [3045] [5088]; Databases [5123] [5327] [5341]; Habit Illustration/Photograph [5092]; Use Related Illustration/Photograph [5092]; Grid Map [5121] [5123]
SEPASAL DATASHEET STATUS	All Data Transferred from SEPASAL Paper Files; Nomenclature Checked [2963]
CHEMICAL ANALYSES	Nutritional Analyses - stems [1610]; Nutritional Analyses - leaves [1610]

## Uses

Major use	Use group	Specific uses
FOOD	Stems	leafy stems/branches, tea substitutes [5091] [5095]
	Leaves	tea substitutes [5088] [5121]
	Infructescences	fruits, dessert fruits [1610]; fruits, tea substitutes [5088] [5121]
	Seeds	entire seeds, coffee substitutes [5095]; entire seeds, raw [5095] [5103]; testa, raw [5095] [5103]
	Exudates	snack food [5095]; gum [5092] [5095]
FOOD ADDITIVES	Leaves	infusions/tisanes [1257]; flavourings [2136] [5095]
ANIMAL FOOD	Unspecified Parts	game mammals, browse [3045] [5121]
	Bark	game mammals [5092]
	Fertile Plant Parts	fruits, mammals [5091]; fruits, mammals, fodder [5095]; seeds, primates [5092]
	Aerial Parts	leaves, game mammals, browse [1519] [1610] [5092]; stems, game mammals, browse [1519] [1610]; goats, browse [1610]; leaves, mammals, browse [5091]; leaves, mammals, fodder [5095]; leafy stems/branches, game mammals, browse [5092]
BEE PLANTS		nectar source [5121]

[1610]

MATERIALS	Fibres	bark, woven material, clothing [1304]	
	Wood	beehives [1610]; poles (from wood) [1610]; huts [1279] [1610] [5082]; walking sticks [1610]; tool handles [1257] [1279] [1610] [5082]; tools; boat keels [1610]; dugout canoes [50] [1610]; turned wood; wood, huts [3045]; wood, constructions [3045]; trunks, fences [1304]; wood, toys/games [1304]; defoliated stems/branches, gates [1304]; wood, wagons/carts [1304] [5121]; wood, weapons [1304] [5095] [5121]; wood, buildings [5092] [5121]; wood, fences [5092] [5121]; wood, tool handles [1340] [3045] [5092] [5121]; wood, timber, axles [1340] [5092]; wood, axe handles [5092]; wood, poles (from wood), buildings [554]	
	Other Materials/Chemicals	bark [1304]; heartwood, cosmetics [5088] [5121]	
FUELS [1279] [1340] [1610] [5092] [5095] [5121]	Fuelwood		
	Charcoal	wood [1610] [5092] [5121]	
SOCIAL USES	'Religious' Uses	leafy stems/branches, ritual/religion/magic [5091]; bark, ritual/religion/magic [5095]	
MEDICINES	Digestive System Disorders	bark, humans, diarrhoea, oral ingestion [5095]; roots, humans, constipation, oral ingestion [2136]; roots, humans, intestine, oral ingestion [5098]; roots, humans, stomach [5098]; bark, humans, stomach, oral ingestion [5095]	
	Infections/Infestations	'roots', humans, digestive system [1610]; roots, humans, colds, oral ingestion [2136] [5095] [5098]; roots, humans, colds, teas [5098]; roots, humans, bronchi, infections [5098]	
	Injuries	bark, humans, injuries, poultices [5095]	
	Pain	bark, humans, throat, oral ingestion [2136] [5091]; bark, humans, stomach, oral ingestion [2136] [5091]; bark, humans, neck, prophylactic, neck bands [5095]; sap, humans, throat, oral ingestion [5098]; sap, humans, stomach, oral ingestion [5098]	
	Pregnancy/Birth/Puerperium Disorders	bark, humans, pregnancy, miscarriages [5095]	
	Respiratory System Disorders	bark, humans, coughs, oral ingestion [2136] [5091]; sap, humans, coughs, oral ingestion [5091] [5098]; roots, humans, coughs [5095] [5098]	
	Sensory System Disorders	roots, humans, eyes [5098]	
	Skin/Subcutaneous Cellular Tissue Disorders	wood, humans, rashes, external applications [5095]	
	ENVIRONMENTAL USES [5121]	Shade/Shelter	
		Soil Improvers	leaves, green manures [1610]
	Ornamentals	unspecified aerial parts, everlasting 'flowers'; fruits, everlasting 'flowers' [5121]; live plant in situ, everlasting 'flowers', gardens [5121]	
	Boundaries/Barriers/Supports	animal barriers [1304]	

## Picture

None recorded

## Notes

## NOMENCLATURE/TAXONOMY

### *Name derivation:*

"Terminalia", from "terminalis" (Latin), refers to the dense grouping of leaves at the ends of the twigs. "prunioides" is derived from "prunus" Latin, "plum" and "oides" Greek, meaning "resembling". Doubtless alludes to the plum-red fruits [5092] .

## VERNACULAR NAMES

### *Damara>Nama (Namibia):*

Names refer to how you easily get hooked on the thorns (llgae means hook) [5095] .

### *Afrikaans (Namibia):*

The names "hardekoelboom" and "vaalbos" are given for this species, but these names more commonly refer to other species [6166] .

## DISTRIBUTION

### *Namibia:*

Widespread and common to abundant in the northwest and central north. Uncommon in the Cuvelai, along the Okavango River and in eastern Caprivi, common in the Nyae Nyae area. Often the dominant species, especially in the eastern Karstveld and parts of Kaokoveld [5121] .

## RARITY/CONSERVATION

### *Namibia:*

Subject to bush-clearing and charcoal production in some areas [5121] .

## DESCRIPTION

### *Height:*

7-15 m [3] .

### *Height:*

Up to 7 m [554] .

### *Height:*

Up to 9 m [1304] [2136] .

### *Leaf fall:*

Leaves are present from November to June, with young leaves from October to January [5121] .

### *Leaves:*

Clustered on dwarf branchlets, obovate-elliptic, dark green above, paler below, base running into petiole [5121] .

### *Leaves:*

Crowded on spur shoots, grey-green, obovate, usually 6 cm long or shorter [1304] .

### *Leaves:*

Greyish, oval, 2-5 x 1-2.5 cm with short hairs on both sides [2136] .

### *Leaves:*

Small, dark to bluish-green. Obovate [5092] .

### *Lifeform:*

The shrubs in Namibia are mainly in the 1-3 m height class and the trees in the 3-8 m height class, although both trees and shrubs can be taller [5121] .

### *Leaves:*

Clustered at the ends of dwarf branchlets [1279] .

### *Odour:*

The flowers have an unpleasant odour which taints the air for some distance (Codd 1951) [1340] .

### *Bark:*

Brownish to grey, rough, vertically striated to fluted, fibrous [5082] .

### *Flowers:*

White or cream to pale yellow, with a strong, rather unpleasant smell, in slender axillary spikes 4-8 cm long, clustered on spur-branchlets [5082] .

*Stems:*

Often multistemmed with a rather untidy crown and long, drooping branches [3045] .

*Fruits:*

Very striking, 4-6 x 2-3 cm, bright plum-red or purple-red, making the trees conspicuous in autumn and winter [5082] .

*Height:*

Usually 3-7 m but sometimes reaching 13 m [5082] .

*Leaves:*

Clustered, often almost in whorls at the ends of dwarf spur-branchlets; broadly obovate to obovate-elliptic usually 2-7 x 1.5-3 cm, thinly textured, dark green above, paler below, often with short soft hairs when young; 3-7 pairs of lateral veins slightly indented above, apex rounded or notched; base tapering; margin entire; petiole 2-10 mm [5082] .

*Branches:*

Frequently long, thin, drooping and often somewhat tangled; dwarf branchlets with clusters of leaves spirally arranged all round the main branches; paired or single spines sometimes present at the base of short lateral branchlet or spur-branchlets [1279] [5082] .

*Bark:*

Dark, rough, vertically striated and fibrous [5121] .

*Bark:*

Old bark is longitudinally fissured. It is pale to dark grey, but brown in the grooves [5092] .

*Bark:*

Pale-grey to grey-black, deeply fissured [3] .

*Branches:*

Long and drooping. Branchlets spine-tipped [5092] .

*Branches:*

The branchlets are almost straight, not or scarcely zigzag, usually non-spinous [554] .

*Branches:*

Young branchlets plum-coloured, often long and becoming entangled with each other, sometimes with spinescent dwarf branchlets [5121] .

*Crown:*

Narrow-ovoid to rounded [3] .

*Flowers:*

Cream, in long, slender spikes on ends of dwarf branchlets [5121] .

*Flowers:*

Creamy-yellow, small, red when in bud stage. Packed in solitary, cylindrical spikes [5092] .

*Flowers:*

In slender axillary spikes, greenish white to cream, often tinged with pink [3045] .

*Fruits:*

A flattened, winged nut, 40-60 x 20-30 mm, bright red to purple red, drying to brown [3045] .

*Fruits:*

Plum-red, oval, with a hard, thickened central part encircled by a pergamentaceous wing. Initially green [5092] .

*Fruits:*

Red, shield-shaped [5091] .

*Fruits:*

Up to 60 mm long, with bright plum-red to purple wing [5121] .

## FOOD - STEMS

*Leafy stems/branches, tea substitute:*

Young twigs can be boiled in water and drunk by Herero and Himba as a tea [5091] [5095] .

## FOOD - LEAVES

*Leaves, tea substitute:*

The leaves yield a type of tea. Only hot water and fresh leaves are needed to prepare this beverage [5088] [5121] .

## FOOD - INFRUCTESCENCES

#### *Fruits:*

The fruits are often preferred for the tea because the leaves seem to make the tea bitter [5088] .

#### *Fruits, tea substitute:*

The fruits yield a type of tea. Only hot water and ripe fruits are needed to prepare this beverage [5088] [5121] .

### **FOOD - SEEDS**

#### *Entire seed, coffee substitute:*

The seeds are roasted, ground and used like coffee. They are boiled and milk and sugar are added [5095] .

#### *Entire seed, testa, raw:*

The seed and seed coat are eaten raw by Damara people of Namibia [5095] [5103] .

### **FOOD - EXUDATES**

The exudate is consumed by Damara people in Namibia as snack food [5095] .

#### *Gum:*

The gum is eaten by Dobe-area !Kung (Lee 1979) [5095] .

#### *Gum:*

The tree exudes an edible gum [5092] .

### **FOOD ADDITIVES - LEAVES**

#### *Tisanes:*

Sometimes used in Botswana, but it is not commercially harvested as there is insufficient demand [1257] .

#### *Flavourings:*

The leaves are added to tea to improve its flavour [2136] [5095] .

### **ANIMAL FOOD - UNSPECIFIED PARTS**

#### *Game mammals, browse:*

The plant is browsed by game [3045] .

#### *Game mammals, browse:*

The plant is heavily browsed by game, including antelope, giraffe and elephant [5121] .

### **ANIMAL FOOD - BARK**

#### *Game mammals:*

Elephants eat the bark [5092] .

### **ANIMAL FOOD - FERTILE PLANT PARTS**

#### *Primates, seeds:*

Monkeys remove the seeds and eat them while the fruit is still green [5092] .

#### *Fruits, mammals, fodder:*

The pods provide important livestock fodder throughout former Damaraland in Namibia [5095] .

#### *Fruits, mammals:*

Fruits are eaten by large and small stock [5091] .

### **ANIMAL FOOD - AERIAL PARTS**

#### *Leafy stems/branches, game mammals, browse:*

The leaves and shoots are eaten by elephant, giraffe, kudu and impala [5092] .

#### *Leaves, mammals, browse:*

Leaves are browsed by large and small stock [5091] .

#### *Leaves, mammals, fodder:*

The leaves provide important livestock fodder throughout former Damaraland in Namibia [5095] .



*Leaves, stems, game mammals, browse:*

Browsed by elephants, rhinos, giraffes, impalas and dikdiks [1610] .

*Leaves, leafy stems/branches, game mammals:*

It was observed that elephants browse twigs in Voi, Kenya, April 1962 [1519] .

## **BEE PLANTS**

*Nectar source:*

Bees produce good honey from the nectar [5121] .

## **MATERIALS**

*Wood properties:*

1240 kg/m<sup>3</sup> [1610] .

*Wood properties:*

Hard and tough [1279] [1340] [3045] [5082] .

*Wood properties:*

The wood is light but strong [1304] .

*Wood properties:*

The wood is yellow-brown, undifferentiated, very hard, tough and durable. It is exceptionally heavy (air-dry 1120 kg/cub meter). Although it is difficult to work, it produces a smooth finish [5092] .

## **MATERIALS - WOOD**

*Poles (from wood), buildings:*

The wood makes a good building pole [554] .

*Dugout canoes:*

Used for canoes, especially in Tanzania [50] .

*Timber, axles:*

The explorer Chapman made axles for his wagons from the timber (Miller 1948) [1340] [5092] .

*Tool handles, axe handles, fences:*

The wood is suitable for pick and axe handles and as fencing posts [5092] .

*Tool handles, weapons, buildings, fences:*

The wood is, amongst other uses, used for implement handles, knobkerries, building and fencing [5121] .

*Tools handles, hut, constructions:*

The wood is used for implement handles and in hut construction [3045] .

*Toys/games:*

Toy bow and arrows are made for children from this species [1304] .

*Wagons:*

The wood is used for wagon parts [1304] [5121] .

*Weapons:*

Knobkerries are made from the wood [1304] [5095] .

*Buildings:*

As building material, the wood is reputed to be almost imperishable [5092] .

*Fences, trunks:*

Trunks are used for kraal fences [1304] .

*Gates, defoliated stems/branches:*

Forked sticks are used to support the main kraal entrance [1304] .

## **MATERIALS - OTHER MATERIALS/CHEMICALS**

*Neck bands:*

The spines are made into necklaces worn at night to keep the neck straight when sleeping [5095] .

*Bark:*

Belts are made from the bark, especially for boys pants or formerly their aprons made from hides [1304] .

*Cosmetics, heartwood:*

The rotten heartwood is sometimes pulverised and used as a fragrance for cosmetic purposes [5088] [5121] .

## **FUELS - FUELWOOD**

The wood is an important firewood for the Damara in Namibia [5095] [5103] .

## **FUELS - CHARCOAL**

The wood makes good fuel and excellent charcoal [5092] .

## **SOCIAL USES - 'RELIGIOUS' USES**

### *Ritual:*

When a Herero or Himba girl menstruates for the first time, a long branch of this tree, preferably with the red fruit on it, is wound around the supporting pole of the otjiranda, the ceremonial shelter for ritually impure women. This first menstruation, euphemistically called "wateya omuhama" (she has broken the omuhama), coincides with the rite of passage whereby the girl attains adult status. During the ceremony she must remain in the otjiranda and all gifts brought by her friends are hung on the spines of the omuhama branch [5091] [5095] .

Bark twine is tied tightly around the belly of a pregnant woman in the belief that this will help prevent miscarrying [5095] .

## **MEDICINES - UNSPECIFIED MEDICINAL DISORDERS**

### *Leafy stems/branches, humans, vapour baths:*

When a Herero or Himba child is sick the father must cut a branch and tie it horizontally above the hut door. He then puts a pot of meat in front of the door and he and the child's mother stand on either side of the pot with the mother nearest the door. The lid is removed from the pot and the child is passed back and forth over the pot so that it is bathed in the steam. The whole process is called "ongaripira", and requires the "omuhama" branch for its special healing powers [5095] .

## **MEDICINES - DIGESTIVE SYSTEM DISORDERS**

### *Roots, humans, constipation, oral ingestion:*

In Botswana a root decoction is drunk for constipation [2136] .

### *Roots, humans, intestines, oral ingestion:*

A root decoction is taken by the Bushmen for gasro-intestinal complaints [5098] .

### *Roots, humans, stomach:*

A root decoction is regarded by the Himba of Namibia as an effective remedy for stomach upset [5098] .

### *Bark, humans, diarrhoea, oral ingestion:*

A decoction from plant parts, especially the bark, is drunk by Damara people in Namibia especially for children to treat stomach disorders such as diarrhoea, 1 teaspoon is taken twice a day for 3 to 4 days [5095] .

### *Bark, humans, stomach, oral ingestion:*

Bark, cooked or uncooked, is chewed to aid digestion and for stomach cramps [5095] .

## **MEDICINES - INFECTIONS/INFESTATIONS**

### *Roots, humans, colds, brochi:*

A root decoction is regarded by the Himba of Namibia as an effective remedy for colds and brochitis [5098] .

### *Roots, humans, colds, oral ingestion:*

The root is chewed or drunk as a decoction by Damara people of Namibia to treat colds [2136] [5095] .

### *Roots, humans, colds, teas:*

A root tea is taken by the Himba for cold-related illnesses [5098] .

## **MEDICINES - INJURIES**

### *Bark, humans, injuries, poultices:*

The bark is heated and placed as a poultice on injuries to reduce swelling [5095] .

## **MEDICINES - PAIN**

*Roots, humans, chest:*

The roots are pounded and cooked for cough mixture and to treat chest pains [5095] .

*Sap, humans, throat, stomach, oral ingestion:*

The Ovahimba swallow the sap of chewed-up roots for sore throat and stomach pain [5098] .

*Bark, humans, chest, prophylactic, neck bands:*

The bark twine is worn around the neck by Damara people of Namibia to prevent neck pain [5095] .

*Bark, humans, throat, stomach, oral ingestion:*

The bark is chewed and the sap swallowed for sore throats and stomach cramps [2136] [5091] .

## **MEDICINES - PREGNANCY/BIRTH/PUERPERIUM DISORDERS**

*Bark, humans, miscarriages, pregnancy:*

Bark twine is tied tightly around the belly of a pregnant woman in the belief that this will help prevent miscarrying [5095] .

## **MEDICINES - RESPIRATORY SYSTEM DISORDERS**

*Roots, humans, coughs:*

A root decoction is regarded by the Himba of Namibia as an effective remedy coughs [5098] .

*Roots, humans, coughs:*

The Damara pound and cook the root to make a cough remedy [5095] [5098] .

*Sap, humans, coughs, oral ingestion:*

The Ovahimba swallow the sap of chewed-up roots for coughs [5098] .

*Bark, humans, coughs, oral ingestion:*

The bark is chewed and the sap swallowed for coughs [5091] .

## **MEDICINES - SENSORY SYSTEM DISORDERS**

*Roots, humans, eyes:*

The Himba crush the root rind and place it in a cloth, which is then applied to diseased eyes [5098] .

## **MEDICINES - SKIN/SUBCUTANEOUS CELLULAR TISSUE DISORDERS**

*Wood, humans, rashes, external applications:*

Fragrant rotten wood from this tree is rubbed onto rashes on babies [5095] .

## **ENVIRONMENTAL USES - SHADE/SHELTER**

A good shade tree [5121] .

## **ENVIRONMENTAL USES - ORNAMENTALS**

*Live plant in situ, gardens:*

The plant is already in limited use in gardens in Windhoek, Namibia and elsewhere, but has greater horticultural potential [5121] .

*Fruits, everlasting flowers:*

The tree has attractive flowers and fruit [5121] .

*Gardens:*

The species is a successful garden plant, but one should bear in mind that the nauseating odour of the flowers could be quite overpowering [5092] .

## **ENVIRONMENTAL USES - BOUNDARIES/BARRIERS/SUPPORTS**

*Animal barriers:*

Trunks are used for kraal fences [1304] .

## CHEMICAL ANALYSES - MISCELLANEOUS

*Stems, leaves, nutritional analysis:*

In percentages; crude protein 7.9-12.9, ash 7.1, calcium 1.9, potassium 1.2 [1610] .

## TEMPERATURE

Seasonal variation in Kenya was 1.7 - 40.6°C [388] .

## ALTITUDE

*Southern Africa:*

275-1525 m a.s.l. [5104] .

## TOPOGRAPHY/SITES

*Namibia:*

Found in various habitats, but mostly on plains. Also on hill slopes in the northwest and on the northcentral plateau, along rivers in the central west and northwest, on rocky outcrops and hilltops in the northwest, around pans in the Cuvelai. Also around salt pans and on termite mounds [5121] .

Rocky hills slopes [1279] .

## SOILS

*Namibia:*

Substrates include sand, gravel, calcrete, various types of rock including granite, basalt [5121] .

*Botswana:*

Although this species grows on all soil types, it has a definite preference for soil with a high clay content, such as in brackish flats, or otherwise stony areas with shallow soil [5092] .

## VEGETATION

*East Africa:*

Acacia-Commiphora and Acacia- Combretum bushland, coastal bushland and riverine thicket [1362] .

*Namibia:*

The species is often invasive, and is a major problem in the Karstveld, especially where trees have been harvested [5121] .

*Southern Africa:*

Open woodlands and scrub [1279] .

*East Africa:*

Open grasslands at coast and drier inland areas [50] .

*Southern Africa:*

Occurs in hot, low-altitude bushveld [3045] .

*Zambia:*

In mopane woodland in Zambezi Valley [554] .

Baikiaea woodland, Brachystegia savanna woodland, mopane shrub savanna, Acacia tree or shrub savanna, Acacia-Combretum-Terminalia tree savanna, Commiphora-Combretum thickets and coastal savanna, mostly in hotter drier areas [3] .

## FLOWERING/FRUITING/SEED SET

*Flowering, southern Africa:*

October - January, occasionally later [5082] .

*Fruiting, southern Africa:*

January - July [5082] .

*Flowering, Botswana:*

October to February, after good rains [5092] .

*Flowering, Namibia:*

Mainly November to April, but can continue until August in some years. Flowering is rainfall-dependent and the species often flowers twice in one season if there are late rains [5121] .

*Flowering, Zambia:*

January [554] .

*Fruiting, Botswana:*

Fruit persistent through autumn and winter, April to August [5092] .

*Fruiting, Namibia:*

All year round, but mostly from December to the following September [5121] .

*Fruiting, Zambia:*

February to March [554] .

## VEGETATIVE GROWTH

*Growth rate:*

It can grow to about 6 m in 15 years [5092] .

## CYTOLOGY

*Genus:*

$x = 12$  (7, 13) (high polyploidy, B-chromosomes) [5150] .

## PHYSIOLOGICAL TOLERANCES

*Drought tolerance:*

The species is drought-resistant [5092] [5121] .

*Frost tolerance:*

This species is fairly frost-tolerant [5121] .

## ASSOCIATED BIRDS

Vultures nest in tall specimens in some areas [5121] .

## PARASITIC PLANTS

Some individuals have been killed by parasites such as *Tapinanthus* [5121] .

## PROPAGATION FROM SEED

A proportion of the seeds is normally damaged by insects, but sound seeds germinate readily. Best results can be obtained by stripping the wings and soaking the seeds for a few hours before sowing. They should germinate within three weeks [5092] .

## ACKNOWLEDGEMENTS AND DATASHEET PROGRESS

Nomenclature checked [2963] .

All data transferred from SEPASAL Paper Files by Staline Kibet, KENRIK, National Museums of Kenya, February 2004 .

Updated for southern Africa by M. Sinkela; checked by B. Curtis, May 2005. Entire species edited by B. Curtis, May 2007. SEPASAL Namibia, National Botanical Research Institute .

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*SEPASAL's development has been funded by The Clothworkers' Foundation and its Internet development is funded by The Charles Wolfson Charitable Trust. Nutritional information on African wild foods is funded by Nestlé Charitable Trust.*

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