LONG-LEAFED ACACIA

by HILDEGARD DE BEER
Plant Protection Research Institute

Long-leafed acacia *Acacia longifolia* (Andr) Willd.; family Fabaceae, was originally imported from Australia as an ornamental shrub and to stabilise sand dunes. It has, however, spread so rapidly that it has become one of the major threats to the Cape mountain fynbos.

Another common English name for this weed is "long-leafed wattle". In parts of the country it is also erroneously called "Port Jackson willow" which is actually the colloquial name for *A. saligna* (Labill.) Wendl. In Australia it is variously known as "Sydney golden wattle", "sallow wattle" or "coast wattle". The most common Afrikaans names are "langblaarwattel", "bleek-akasia", "Sydney-gouewattel" or "kuswattel".

Morphology

Long-leafed wattle is a thornless, evergreen shrub, upright or prostrate and bushy, which develops into an open, spreading tree which reaches a height of 10 m under ideal conditions.

The plant has no true leaves, but flattened leaf stalks or phyllodes which resemble leaves. Sometimes a few true, pinniform leaves occur on the tips of the phyllodes. The phyllodes are dark-green, up to 18 cm long and 2 cm broad, oblong and narrowed towards each tip. Each phyllode has two to five prominent midribs with a number of less prominent, longitudinal lateral veins in between. There is a small nectary on the upper tip, near the base of the phyllode. The phyllodes are usually borne upwards and at an angle to the branches.

The inflorescences of long-leafed wattle are finger-shaped, in contrast with the globose inflorescences of all the other exotic *Acacia* species. The bright-yellow inflorescences which are up to 5 cm long and 7 mm in diameter, usually occur singly or in pairs in the axils of the phyllodes. The elongated flower heads with buds can be seen from January to June, and the flowering time extends from June to November, with a peak between July and September, depending on where it grows.

The pods are leathery, pale-brown, straight, cylindrical and slightly constricted between the seeds. They are 4 to 12 cm long and are attached to the

The elongated inflorescences are typical of long-leafed acacia

A veld fire is followed by the formation of dense stands of long-leafed wattle

peduncle singly. Once they are mature, they rupture along both seams and curl up as they dry. They usually release large numbers of small, hard, dark-brown to black seeds with short, succulent, white seed stalks, in November. These seeds remain viable for a long time. The pods at first remain on the trees, but usually drop in December.

Long-leafed wattle is often confused with port jackson (*A. saligna*), rooikrans (*A. cyclops* A. Cunn. ex G. Don) or blackwood (*A. melanoxylon* R. Br.), especially when there are no flowers or pods on the tree. It can, however, be distinguished by its elongated inflorescences and cylindrical pods which hang from the tree between September to December only, and not throughout the year, as is the case with rooikrans. Its seed stalks are also white, in contrast with the red seed stalks of rooikrans and blackwood.

Long-leafed wattle does not grow as tall as blackwood, but is more spreading; the pseudo-leaves are longer and straighter than those of blackwood, while the typical net-veined pattern on the phyllodes is also absent. Port jackson can be distinguished by the phyllodes with their single midrib.

Distribution

Long-leafed wattle is indigenous to the eastern and south-eastern parts of Australia where it usually grows in the coastal forests. It is also naturalized in parts of the USA, Uruguay, Argentina and South Africa.

Long-leafed wattle was apparently first introduced into South Africa in 1827, and again in 1835 together with rooikrans and port jackson to stabilise drift sand. Although it was initially planted on the sand dunes, it died out there, but spread along the drier mountain slopes so that today it occurs mainly in the southern coastal belt from Hopefield in the south-west to Grahamstown in the Eastern Cape Province, and even in Transkei.

It is also found at various places in Natal, especially around Pietermaritzburg, but has not yet become a problem there. In 1973 it was calculated that 2 000 ha was infested with long-leafed wattle, but since it cannot readily be distinguished from rooikrans, the actual area will probably be larger.

Long-leafed wattle is mainly found along rivers, but also grows on drier, sandy soil, clay soil or in rocky places with sandy soil, e.g. on top of Table Mountain. It does not, however, thrive on saline soil. It has already penetrated the Southern and Eastern Cape forests and grassland where it occurs along virtually all the rivers.

In the vicinity of Grahamstown, where long-leafed wattle has spread along the southern mountain slopes into the mountain fynbos, it competes with black wattle and silky hakea to completely replace the indigenous vegetation. It forms dense, impenetrable thickets and produces large quantities of seeds which remain viable for a very long time and which are carried downstream by rivers to germinate where they are deposited. It can be expected that long-leafed wattle will continue to spread along the river banks if it is not controlled.

Growth and Propagation

Long-leafed wattle grows thoughout the year, but displays a striking peak in spring. During the first 2 years the plant usually grows 1 to 2 m, and seedlings can flower in the second growing season. The flowers are formed in winter and early spring, pods develop in spring and summer, and drop at the end of summer. Most of the phyllodes are shed in summer.

Propagation by means of seed is very effective and forms the key to the success of the plant in South Africa. Large numbers of seeds are produced every year. These seeds have a tough testa. They accumulate on the ground and remain viable for a long time.

The seeds are eaten by red-winged starlings, but all the seeds are not digested. Many of the seeds subsequently germinate more readily since the digestive enzymes only damage the testa, rendering it more permeable to water.

In this way the seeds are spread along the mountains. Fire also stimulates germination of the seed, unless temperatures are exceptionally high, while many indigenous plants and their seeds are destroyed by fire. Fire therefore encourages the formation of dense stands of long-leafed wattle.

This species does not tend to coppice after it has been cut low enough or properly burnt. This fact facilitates control of the plant.

Legislation

Under the Conservation of Natural Agricultural Resources Act of 1983 (Act 43 of 1983), long-leafed wattle has been proclaimed an invader plant. If it occurs on any farm unit in the Republic to such an extent that it could be to the detriment of the production potential of the natural agricultural resources, it must be controlled effectively.

Control

Mechanical eradication is the best control method. Young trees can be pulled up by hand, while immature trees can be dug or hoed out. Older trees should be cut as low as possible. The bark is then stripped into the soil.

Older trees can also be ring-barked. Once the trees have been cut, the branches can be stacked and burnt when the wood is dry. Provided the fire burns slowly and is hot enough, the seeds below the ground will be destroyed, but otherwise the fire will only damage the testa, stimulating the seed to germinate. Follow-up work must always be done after a fire to uproot all young seedlings.

Research on the biological control of long-leafed wattle is now in progress.

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