



BLACK WATTLE

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Although the black wattle (*Acacia mearnsii* De Wild., family Fabaceae) has great economic value for South Africa - mainly because of its tannin-rich bark which is used in the tanning process, and wood chips that are exported - it is nevertheless a tremendous threat to our natural vegetation. When it spreads from plantings to other areas, it often forms dense thickets and the variety of indigenous plants are replaced by a monotonous stretch of black wattle.

This tree is also known as "Australian black wattle", "tan wattle" and "wattle". In Afrikaans it is also referred to as "swartwattel", "swartbasboom", "basboom", "wattel", "looiwattel" and "blikwortelboom".

MORPHOLOGY

The black wattle is a spreading, spineless, ever-green tree, reaches a height of 10 to 30 m, with a dense, conical or rounded crown and dark-green foliage. It is characterised by a fair amount of old wood and old pods. The bark is grey-brown to black, smooth in young trees but rough in older trees. The bipinnately compound leaves resemble

those of the indigenous *Acacia* species, but can nevertheless be easily identified by the dark-green colour and the large number of raised nectar glands on the midrib between the junctions of the lateral veins. The young leaves have striking rust or gold-coloured tips and all parts of the plant, except the flowers, are covered with fine hairs.

The highly-scented, pale-yellow flowers in globular inflorescences are borne on the tips of the branches. Flowering time is late winter or early spring, between August and November, with a peak in October. The pods are straight or curled, grey-green and oblate and slightly constricted between the seeds. A number of pods are affixed to the peduncle at one point and are suspended from the tree throughout the year. The pods dehisce along one seam only to release black seeds with small, yellow-white seed stalks. These seeds mature within 14 months.

DISTRIBUTION

The natural habitat of this plant is South-East Australia, where it forms part of the undergrowth in



A dense stand of black wattle invading the indigenous fynbos near Mossel Bay

Inset: The dark-green leaves, pale-yellow inflorescences and grey-green, slightly constricted pods are typical of the black wattle

Eucalyptus (blue-gum) forests, or grows in dense stands along roads. It is currently grown intensively in India, Japan, South Africa, Kenya, Tanzania, Uganda, Brazil, Uruguay and Argentina, but in some of these countries it has spread from the plantations to invade overgrazed or burnt areas.

It is generally accepted that the first black wattles were imported from Australia in 1864 by a farmer in the vicinity of Camperdown in Natal, but it has been established that it was already growing in the Cape Town Botanic Gardens in 1858.

The trees were initially planted as shade trees and as a source of firewood, but once it became known that the bark had a tannin content of 30% and more, it was planted in commercial plantations in Natal on a large scale and soon became the centre of a large and profitable export industry.

It was also planted as early as the 1890s in the Cape Province to form firebreaks in plantations, but these trees were eventually left to themselves. Some of these cultivated trees spread throughout the Republic so that the black wattle is today common in the Transvaal, Natal, Swaziland and the Cape Province from the Cedarberg in the west to Transkei in the east.

In 1973 black wattle trees covered an area of some 180 000 ha in plantations and about 48 000 ha outside plantations. At that stage about 1 300 farmers were cultivating the trees. In 1978 black wattle trees covered about 16 000 ha, or about 15%, of the total plantation area of all tree species in the Republic.

Outside plantations this tree occurs commonly along roads, rivers and furrows. It is restricted to areas with a mean annual rainfall of between 500 and 1 500 mm, although it prefers areas with a high rainfall. It is to be found from sea level to an altitude of about 800 m. It tolerates some exposure to sea air and is fairly resistant to drought and frost, although it will do best in a temperate climate.

PROPAGATION

The black wattle propagates by means of seeds that can remain viable for 50 and probably as long as 80 years. The seeds do not germinate immediately, but accumulate under the trees. Seed densities of as much as 20 000 seeds per square metre have been found under old trees. Germination is stimulated by fire, when virtually all the seeds that have collected since the previous fire germinate simultaneously. That is why dense thickets are often a feature of burnt areas.

Black wattles need not necessarily pose a threat to the natural vegetation provided that the correct management practices are applied. Bear in mind that problems could arise in the following places: where wattle plantations or chopped-down trees are left to themselves; where wattles in a plantation are replaced by other species; where overgrazing gives the seedlings a chance to penetrate a piece of veld;

where the natural vegetation is destroyed, e.g. along roads, or where rivers spread the seeds.

Various factors contribute to the rapid growth and spread of the imported *Acacia* species in South Africa. Firstly, the trees were imported without their natural enemies, and are therefore not hampered by insects and other predators or parasites. They are also favoured by regular veld fires because burning exposes the denuded veld, increases the soil pH, destroys the seeds of many indigenous plant species and stimulates the wattle seeds to germinate. Moreover, like most legumes, they have root nodules which enable them to fix atmospheric nitrogen, thereby enriching poor soil. Most of them are drought resistant and the seeds remain viable for a long time. They also maintain a faster and more sustained growth rate than indigenous plants, forming dense stands that oust the indigenous plants.

DANGERS

The big danger attached to the planting of black wattles is that they can "escape" from the plantations and spread along roads and rivers. They often form impenetrable thickets which replace the natural vegetation, especially in the Cape Province where indigenous forests and fynbos are threatened. Dense stands of black wattles along rivers often hamper the flow of water.

LEGISLATION

Under the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) the black wattle has been proclaimed an invader plant throughout the Republic, except where it is grown commercially. On any other farm unit within the Republic it must be controlled effectively should it be to the detriment of the production capacity of the natural agricultural resources.

CONTROL

The following herbicides are registered for the chemical control of black wattle:

- 2,4-D/picloram (dimethylamine salts)
- glyphosate
- tebuthiuron
- triclopyr

The labels should be consulted for the correct dosage.

Where infestations are less severe, seedlings can be pulled up by hand, young trees can be dug up and old trees felled. However, since old trees that are not treated will again sprout after felling, such trees should be chopped either below the junction of the stem with the roots, be girdled, or the chopped stem must be treated with chemicals.