



SILVER WATTLE

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The foliage of *Acacia dealbata* Link (Family Fabaceae, formerly Leguminosae) appears silver-grey in colour when seen from a distance, hence the common name, silver wattle (Afr. "silwerwattel") (Fig. 1). It grows in characteristically ribbon-like infestations along streams, which are major dispersal agents for seeds (Fig. 2). Silver wattle has become a



FIG. 1 - Leaves, pods and flower buds of silver wattle

serious problem in many parts of the country: its rapid rate of spread and progressive encroachment of veld is alarming, especially when considering its potential geographic distribution. Silver wattle is considered one of the major alien invader problems. This is due to:

- Rapid aggressive growth, which allows vigorous competition and consequent domination of desirable indigenous species and invasion of veld.
- Development of dense, largely monospecific thickets where reduction of livestock grazing occurs, both because of restricted access and the presence of few palatable species within these infestations.
- The erosion hazard of stream banks subsequent to stream diversions because of thickets, and shallow rooted trees being washed away during floods.

MORPHOLOGY

Acacia dealbata is an unarmed shrub or tree up to 20 m tall with a conical or rounded crown. The compound leaves are divided into 14-21 pairs of pinnae. Each pinna is subdivided into numerous pinnules (leaflets) about 4 mm in length. The bark is grey-brown to almost black, and mature trunks have



FIG. 2 - Typical infestations occur on stream banks

SILVER WATTLE

BLACK WATTLE

GREEN WATTLE



FIG. 3 - Morphological differences between green, black and silver wattle

either rough or smooth bark. Flowers are bright yellow. Seed pods are 30-80 mm long with smooth compressed black-brown seeds 5-6 mm long.

In addition to silver wattle, two other wattle species commonly occur in Natal. These are *A. mearnsii* (black wattle) and *A. decurrens* (green wattle). Although superficially these three species are morphologically similar, there are a number of distinguishing features, as listed in Table 1 and illustrated in Fig. 3. However, these differences should be considered only as a rough guide in wattle identification.

ORIGIN AND DISTRIBUTION

This exotic *Acacia* originates from Australia, where it is also considered a weed. It was probably originally introduced in error, being confused with black wattle. It was planted as a windbreak, for firewood and for the woodchip and tannin industries. These useful properties are, however, of an inferior quality when compared with black wattle (*A. mearnsii*) which is the wattle species cultivated in Natal.

Silver wattle occurs in montane and moist upland regions near the Drakensberg and extends to the mist-belt regions of Natal. It can tolerate severe frost, and so outcompete the more frost-susceptible black and green wattle (*A. decurrens*) along river banks and in the colder parts of Natal. There is an estimated 40 000 ha infestation in the Estcourt, Klip River and Newcastle magisterial districts, with a potential area of 2,5 million ha in Natal.

In the Transvaal, silver wattle is considered the most aggressive invader species, as gauged by its ability to penetrate and suppress existing vegetation. Dispersal by water has resulted in spread from catchment areas downstream, where the subsequent infestation of lower-lying valleys occurs; for example, silver wattle has spread from plantations in the Highveld and Middleveld downstream into the Lowveld regions of the Transvaal.

REPRODUCTION AND GROWTH OF SILVER WATTLE

Reproduction of silver wattle occurs in two ways:

- from seed, and
- from root suckers

The production of seed

Silver wattle flowers in July August, and mature seeds are produced 4-5 months later (see Table 1). A single wattle tree may produce thousands of viable seeds each season. In the soil beneath a parent tree, up to 20 000 seeds.m² have been recorded; these can remain viable for at least 50 years. The seeds remain dormant until their water-impermeable seed coats are cracked, as usually occurs after a high-intensity fire. The subsequent germination of wattle seeds results in dense "carpets" of seedlings which greatly increase the density of an infestation. When mature seeds are released from their pods, some of these seeds may land in a water course and be washed downstream, and thus spread the species many kilometres away from their point of origin. Drowning or water-logging of the embryo during this dispersal period is prevented by the impermeable seed coat.

Root suckering

Silver wattle also has the capacity to produce suckers from roots. These may occur many metres from the parent tree, which not only allows the species to encroach further into the veld, but also underground parts may survive if the parent tree is killed (e.g. by mechanical means).

Other vegetative growth which commonly occurs is coppicing, where new shoots may be formed from a wounded portion of the stump. This frequently occurs in young trees, and increases the

TABLE 1 - Summary of main characteristics of the three species of wattle

	<i>A. mearnsii</i> (black wattle)	<i>A. decurrens</i> (green wattle)	<i>A. dealbata</i> (silver wattle)
General appearance	Very dark green, almost black	Bright green	Grey
Flowering time	Sept.-Oct.	Aug.-Sept.	July.-Aug.
Months to ripen seed	Up to 15	4-5	4-5
Stem ridges	Prominent but not wing-like	Very well developed, giving branchlets an angular, wing-like appearance	Poorly developed
Leaves: appearance	Very dark green, almost black with covering of soft hairs	Bright green, feathery, with no hairs	Grey-green with dense covering of small grey hairs
Number of pairs of pinnae	10-32	5-10	14-27
Length of pinnules (leaflets)	± 3 mm	± 9 mm	± 4 mm
Leaf glands	At junction of each pair of pinnae and with additional glands between the pairs	At junction of pairs of pinnae	At junction of pairs of pinnae

N.B. In the pure form, all of these differences are applicable. When cross-breeding occurs, some differences are less obvious

difficulty of access and also control costs due to the development of dense thickets.

Because of the alarming rate of spread and serious detrimental effects caused by this species, the suppression of this menace should be considered a priority in weed control.

LEGISLATION

In the regulations under the Conservation of

Agricultural Resources Act, Act No. 43 of 1983, silver wattle is a declared invader plant throughout the Republic of South Africa. In terms of the Act, silver wattle must be effectively controlled on farm units where this species is or could become detrimental to the production potential of the natural agricultural resources. Provision is made in the Act for recognised methods of controlling declared invader plants. Suitable methods for the control of silver wattle are described in Leaflet No. B.23.1 of the Weed Series.



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