



STINK BEAN

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Stink bean, *Paraserianthes lophantha* subsp. *lophantha* (Willd.) Nielsen, family Fabaceae, has the potential to become a serious invader of indigenous vegetation. Thus far it occurs wide-spread, but in fairly isolated or sparse infestations and is still mainly restricted to the Cape Province. It is therefore important to control the species before it assumes more serious proportions.

Stink bean was previously also known as *Albizia lophantha* (Willd.) Benth., with the popular name of Australian Albizia. In South Africa it is also known as "stinkboon" and elsewhere as two-spiked acacia, siris silk tree or plume Albizia.

Morphology

Stink bean is an evergreen shrub or small tree. It normally reaches a height of 4 to 7 m, but under favourable conditions could reach a height of 15 m.

The ribbed twigs are covered with fine, golden



FIG. 2 - The bipinnate leaves, yellowish-green inflorescences that resemble bottle brushes and the flattened pods with a sharp protrusion at the tip



FIG. 1 - A dense stand of stink beans

hairs when young, but older branches are nude or have a few grey hairs. The leaves are bipinnate and consist of a midrib with seven to 12 lateral branches, each of which contains 20 to 35 pairs of leaflets. Each of these leaflets is up to 13 mm long and about 1,8 to 3,0 mm wide, and the midrib is closer to the upper (distal) edge. The young leaves are also covered with golden hairs and the older leaves sometimes have greyish hairs, or they may be nude. In the centre of the petiole and on the midrib immediately below the junction of the last (distal) pair of lateral veins there are distinct glands.

The inflorescences, 30 to 80 mm long, resemble cream-coloured or yellowish-green bottle-brushes, and occur singly or in groups in the axils of the branches. Each inflorescence consists of numerous small florets in a spike, which consists of a large number of cream-coloured to yellowish-white stamens. The plant flowers in July and August. The flowers later give rise to light to dark-brown pods, 50 to 110 mm long. The pods are flattened with thick, raised edges, and the seeds form bulges which give the outline of the pods an undulant appearance. The tip of the pod is usually rounded with a sharp protrusion. The seeds are slightly flattened and black, but turn brown when they become wet.

Origin and distribution

The plant is indigenous to Australia, especially the western and south-western areas, but has also become naturalized in Eastern Australia. It also occurs in New Zealand, Southern California, the Canary Islands, Chile, Cornwall, Tanzania, the Malagassy Republic and South Africa. The closely related subspecies, *P. lophantha* subsp. *montana*, is indigenous to Malaysia.

Stink bean was imported between 1833 and 1835 by both Baron Von Ludwig and Sir John Herschel who established it in Cape Town and Claremont respectively. From there the weed was apparently spread further into the Cape Province, initially probably as an ornamental.

At present stink bean occurs commonly along the banks of the Liesbeek near Claremont, and at numerous places further inland, especially in marshy and other damp spots. It also occurs along the coastal region of the Cape Peninsula and the South-Western and Southern Cape as far eastward as Stutterheim in the Fort Beaufort District. It is becoming a serious invader of indigenous vegetation, especially in the valleys, against damp mountains and along streams. It thrives along the coast among the fynbos and against the low southern slopes of the mountains, while in the Eastern Cape it has spread to the grassveld areas. The success achieved by the weed in a wide range of climates abroad leads one to suspect that it may establish in South Africa over a wide area. It can be expected in time to penetrate all

the damp places along the coastal belt and to spread from there to less favourable environments.

Propagation

Stink bean propagates only by seed, and parent plants do not coppice once they have been chopped down or burnt. However, the large number of seeds produced by the plant are hard and they remain viable for a long time, accumulating around the stem of the parent plant. The seeds could also land in the water, be carried downstream, or they may be spread by river sand used for building purposes.

Dangers

Stink bean has various characteristics that make it an aggressive invader. The seedlings grow very rapidly and a plant less than 2 years old can already produce seed. The dense foliage overshadows the natural vegetation and the superficial root system withdraws a tremendous amount of water from the soil. In this way scarce plant communities along stream banks and where there is seepage could be replaced by monotonous thickets of 5-to-6 m tall trees within 3 to 4 years. It also penetrates disturbed areas, for example fallow land. Because of the large amount of long-lived seed that collects under the trees, it is a lengthy and expensive process to eradicate the weed since the seeds may continue to germinate for a long time. The plant also contains a toxic saponin which might poison animals.

Legislation

Stink bean has been declared a weed under the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983). It may therefore not be distributed or be allowed to spread. It may not grow in any urban area in the Republic, and wherever it occurs on farm units it must be controlled.

Control

It is important to eradicate the plant while the infestation is still a minor one, and before seeds have been produced. No chemicals have yet been registered for the control of stink bean, which means that mechanical methods must be used. Seedlings can be pulled up or hoed. Young trees can be dug out or girdled, or the stem may be chopped off as close to the ground as possible, and the bark stripped right down into the ground. The latter two methods may also be applied to full-grown trees. Follow-up work may be necessary for a few years, especially when conditions for germination are favourable, for example after burning or other disturbance of the land or vegetation.