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Farming in South Africa
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SESBANIA

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Sesbania (*Sesbania punicea*) is an attractive plant of South American origin which has been introduced as a garden shrub in many parts of the world. Also known in South Africa as rattle-pod or coffee weed, it has become, as in many other countries, a weed. Sesbania has been referred to by a number of names in other countries: Sesban, red seine bean, Brazil rattlebox, coffee of the coast, coffee weed, tame acacia and false poinciana. In South Africa the name "rooikeurtjie" has also been used, though somewhat misleadingly, as the "keurtjies" belong to the indigenous genus *Podalyria* and not to the genus *Sesbania*.

Sesbania is a problem for two reasons. Firstly, it is a weed invading many veld areas and forming dense stands, excluding many indigenous plants from these areas. Secondly the plant is poisonous. It has been shown that all parts of the plant, but especially the seeds, contain toxic substances lethal to birds, mammals and reptiles.

FIG. 1 - Sesbania is an attractive plant of South American origin

FIG. 2 - The pods are longitudinally four-winged and oblong in shape. Each pod contains some seven seeds

FIG. 3 - Seed dispersal occurs mainly via water-ways. River banks, water furrows and other damp areas are therefore encroached with dense sesbania infestations

The amount of actual plant material which needs to be ingested before death results is not very high. As little as six doses of 100 mg/day can kill a sheep and as few as six seeds can kill a chicken. Several cases of stock poisoning and stock loss have been reported in South Africa. These have occurred where animals have come into contact with plants in infested grazing areas. Attempts by well-meaning farmers to use the abundant supply of sesbania seeds as a food source for poultry have proved fatal in many cases.

Sesbania is a perennial deciduous shrub or small tree, growing up to 4 m tall. The leaves are 10 - 20 cm long and are made up of 10 - 40 small leaflets, placed in opposite pairs along the leaf rachis. Each leaflet is oblong in shape, tapering to a pointed tip. The plant produces showy red or orange flowers which, except for the colour, are very similar in appearance to the common garden sweet-pea. The most characteristic feature of this species, and one which makes it easily identifiable, is the pod. This is longitudinally four-winged and oblong in shape. It is about 6-8 cm long and 1 cm broad and contains on average five to seven seeds. The number of pods per tree varies depending upon age and the conditions under which the plant is growing, but a mature tree can produce 100-300 pods per season. Bearing this in mind, and also the fact that infestations can contain many thousands of single plants, seed production in a single growing season can be quite considerable.

DISTRIBUTION

Sesbania punicea is native to north and North-Eastern Argentina, Southern Brazil and Uruguay, and is commonly found along rivers and in areas that are frequently inundated with water.

From gardens throughout South Africa, sesbania has invaded areas in Kwazulu, the Natal Coastal Belt, the Natal Midlands, Northern Natal, the Transvaal Highveld and the Eastern Transvaal, the South-Western Cape and the Eastern Cape. In all these areas the population numbers and infested sites are increasing. The only apparent limiting factor to the plant's spread is that it prefers high rainfall areas or damp habitats.

In the USA, from Northern Florida to Eastern Texas, sesbania has invaded river banks, ditch banks and waste areas.

GROWTH AND REPRODUCTION

The main flowering season of this plant is between November and January. However, in most places small numbers of plants may be found flowering virtually throughout the year. Flowering results in prolific seed production.

Seed dispersal occurs mainly via water-ways, the pods being well constructed for water transport. Animals do not play a role in seed dispersal because of the seed's toxic nature. Sesbania is also common along roadsides and may have originated from seeds brought in with the soil used for road construction. Sesbania seeds are released passively from the pods and they fall around the base of the parent tree, which fact accounts for the very dense sesbania infestations.

Many of the seeds produced are initially dormant because the seed coat prevents the seed from absorbing water. As water is unavailable to the seed embryo it cannot germinate. The seed coat impermeability to water tends to break down quickly under field conditions, thus allowing the seed to germinate as soon as sufficient water becomes available. Three-month-old seedlings may flower and produce seeds, but more normally it appears that plants begin to flower as they enter their second year of growth.

LEGISLATION

In accordance with proclamation 35/1979 of the Weeds Act (Act 42 of 1937), as amended, *Sesbania punicea* is a proclaimed weed throughout the Republic of South Africa. In accordance with Article 2(1) of this Act every occupier, or, where there is no occupier, every owner of land must eradicate *Sesbania punicea* growing on such land.

CONTROL

The latest recommendations and the chemical control of *Sesbania punicea* are reviewed in Leaflet A 2.1 of this series.

Different insect species are already successfully used for the biological control of sesbania. Information concerning this can be obtained from the Plant Protection Research Institute.

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