

BUSHY RATTLEPOD -
A NEW PASTURE WEED IN SOUTHEAST QUEENSLAND

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Bushy rattlepod (*Crotalaria grahamiana*) is a low branched perennial shrub with bright yellow pea-like flowers. Seedlings quickly develop a woody taproot with fine white laterals bearing flattened pink nodules, whilst older plants usually have a strong but shallow lateral root system. The woody stems usually branch close to the ground and grow 1.0 to 1.5 cm tall. Young twigs are smooth, pliable, green and densely covered with fine white silky hairs, whilst older stems are pale brown, brittle, woody and 2 to 4 cm thick.

The palmately divided leaves are 5 to 10 cm across and resemble those of lupins. They are produced singly along the twigs and each leaf consists of about seven narrow leaflets. The leaflets have blunt tips, smooth margins and narrow into a pulvinus at the base. They are green above, finely and densely silvery-hairy below, and have an unpleasant smell when handled. The petiole is 5 to 15 cm long, is covered with fine white hairs and ends in a pulvinus at the axil.

The plant flowers profusely and conspicuously in June in short spikes at the ends of the twigs. Each spike contains 5 to 20 bright yellow pea-like flowers 2 to 3 cm across. The smooth green to blackish pods are cylindrical and about 5 cm long, and each ends in a conspicuous hooked stigma. Each pod contains 10 to 20 hard olive-green kidney shaped seeds which are 5 to 7 mm long when mature. The seeds are shed but have no obvious means of dispersal and sink in water. They may be washed down slopes or may be carried externally (and perhaps internally) by cattle.

The season and requirements for germination are not known. Germination occurs throughout the year but it is likely that peaks of germination occur in summer.

Plants appear to flower when they are two years old. They flower every year thereafter and the flowers are visited by a range of butterflies and moths, including monarch butterflies and the two species of *Crotalaria* moths. Plants five or more years old at the site at which they were first noticed are dead, although the surrounding area contains many young plants.

ORIGIN AND QUEENSLAND HISTORY AND DISTRIBUTION

Bushy rattlepod is apparently native and still largely restricted to the highlands of southern India, although it has also been reported as introduced into Sri Lanka. The original or type specimen came from 1300 m at Dindigul in Tamil Nadu, and was described by Wight and Walker-Arnott in 1843 in their *Prodromus Flora Peninsulae Indiae Orientalis*.

There are nineteen specimens in the Queensland Herbarium, all from Brisbane and the coastal strip to the north of the city. The earliest dated

collection was made in Brisbane in 1907. The plant was collected in 1916 at Buderim, ten times in Brisbane between 1927 and 1968, in 1962 at Woodford and Maroochydore, in 1966 at Buderim and in 1968 at Nambour. Most collections have been from roadsides but two were from cultivation and one was a cultivated plant in the Brisbane Botanic Gardens. It has not previously been recorded over any large area or as a weed of pastures.

Bushy rattlepod occurs in dense to scattered clumps over about 40 ha of rough hilly pasture between D'Aguilar and Mt. Mee north of Brisbane. It is densest on the middle slopes but large plants are present along the creek. The plant also occurs in clumps along about 4km of roadside. These may have been taken there when the road was repaired with soil taken from the creek banks about three years ago.

The area has soils derived from granite and an annual rainfall of about 1500 mm. There is a large area of this type of country along the subcoastal ranges of southern Queensland and northern New South Wales which is currently under rough pastures.

ASSOCIATED INSECTS AND THEIR EFFECTS

Both larvae and adults of the two crotalaria moths (*Uletheisa lotrix* and *Argina cribraria*) (both Lepidoptera: Arctiidae) are found on the plants, the larvae chewing circular holes out of the leaves and developing flower spikes, and the adults visiting the flowers. The larvae do not cause serious damage to the plant. Green peach aphids (*Myzus persicae*) (Hemiptera: Aphididae) are numerous in developing flower spikes of many plants and cause considerable stunting and deformation of the flower spikes with much loss of flowering potential. Most spikes, however, carry a few early pods below the damaged areas, and such pods are often sticky with honeydew.

CONTROL

It should be possible to prevent plants from setting seed by cutting back the flowering heads before mature seeds have formed.

Small plants may be pulled by hand when the soil is moist, although this is often difficult and would be easier if they were grubbed with a mattock or pulled by a light tractor. The resulting soil disturbance would probably result in massive germination of seedlings whenever the season suited germination.

The current level of natural biological control is insufficient to prevent further rapid spread of bushy rattlepod, as is pasture competition from the present system of management which includes annual burning.

The plants appear to be fairly shallow rooted and to grow throughout the year and it is likely they can be killed by hexazinone applied either through the Spotgun applicator or as Gridballs. Bushes are reported to have been sprayed with 2,4,D/2,4,5-T with little success, but the rates, timing and method of application are not known.