

GORSE SEED WEEVIL

Exapion ulicis

The history of gorse seed weevils in New Zealand

Gorse seed weevils are native to Europe, and they were one of the first biological control agents to be introduced to New Zealand. This species was imported from England by the Cawthron Institute and released between 1931 and 1946. The weevils established readily within 10 years, and are now abundant and widespread. The adult weevils fly strongly and can find isolated bushes.

How would I find gorse seed weevils?

You may see the small (1.8–2.5 mm long) grey, pear-shaped adults on gorse bushes all year round, but they are easiest to find in spring and early summer. The adults have a long curved snout (rostrum), characteristic of the weevil family. The females tend to have larger rostrums than the males, and are bigger overall. If you



cannot see gorse seed weevils on a bush, try dislodging some by tapping gorse over a piece of white cardboard or material.

Female gorse seed weevils chew small holes in the walls of young pods, and then turn around and lay their eggs inside, either singly or in clusters of up to 20. To see the yellow eggs, split open some young green pods in the spring. The eggs take about a month to hatch.

You may also see the larval or pupal stages inside the pods. The larvae are white, squat, legless grubs, with small brown heads. They feed on the seeds for about 6–8 weeks, and grow to about 2.5 mm long. Once fully grown, the larvae enclose themselves in white pupal cells. The grey pupae develop inside the pods for about a month. The new adults emerge when dry pods burst open – they die if the pods fail to open. The new adults hibernate on gorse plants during the winter and breed the following spring. There is only one generation each year, and the adults can live for 12 months.

If you find a single creamy-white caterpillar inside a pod then you have found the other agent that feeds on gorse seeds, the gorse pod moth (see *Gorse pod moth*). You may also see a tiny wasp-like parasite (*Pteromalus* sp.) that sometimes attacks gorse seed weevil larvae, and develops with them inside the pod. The gorse seed weevil is easy to differentiate from other gorse biocontrol agents and insects commonly found on gorse.

See *Gorse colonial hard shoot moth*, *Gorse soft shoot moth*, *Gorse spider mite*, *Gorse thrips*, *Native insects that damage gorse*.

How do gorse seed weevils damage gorse?

Adult gorse seed weevils feed on the foliage and flowers, but the damage is insignificant. The main damage is caused by the larvae destroying seeds.

How effective are gorse seed weevils?

Gorse seed weevils destroy much of the seed produced during the spring-summer flowering period. In some areas they destroy as much as 99%. However, in response to the climatic conditions in New Zealand, gorse forms many flowers and seeds in the autumn and winter. Gorse seed weevils are only able to reproduce in the spring, and are therefore unable to exploit the second peak of seed production. As a result, we have released the gorse pod moth to complement the activity of the gorse seed weevil. Gorse pod moths have two generations a year to coincide with both peaks of seed production.



Weevils emerging from burst pods

Will gorse seed weevils attack other plants?

No, gorse seed weevils will only damage gorse seeds.

How can I get the most out of gorse seed weevils?

Because gorse seed weevils are widely established you do not need to do anything except avoid activities that will interfere with their life cycle. If you are undertaking control measures over a large area then leave a few bushes nearby to act as a gorse seed weevil reservoir. In areas where they are not common this is likely to be because conditions are not suited to them.

For further information contact:

Hugh Gourlay
Landcare Research
PO Box 40, Lincoln 7640
NEW ZEALAND
email: gourlayh@landcareresearch.co.nz
Ph (03) 321 9683
Fax (03) 321 9998