

BROOM LEAF BEETLE

Gonioctena olivacea

The history of broom leaf beetles in New Zealand

The broom leaf beetle is native to Europe and was first imported for testing in 1995. An application to release the beetle was declined in 1997 due to insufficient information about the possible positive and negative consequences. A detailed cost-benefit analysis was later completed and a second application to release the beetle was made in 2006. This time permission was granted, and the first release was made towards the end of that year. It is too soon to know if they have established yet. Mass rearing is now underway to allow widespread releases of the beetle to begin.

How would I find broom leaf beetles?

You may see the adult beetles on broom plants during spring and summer. Males are easy to distinguish from females as they are usually smaller (2.2–4.1 mm long) than females (3.9–5.0 mm long). Also females tend to be goldish



Male adult beetle



Female adult beetle

brown in colour while males tend to have an orangey-red tinge, but colouration can be quite variable. There are no other beetles of this size and colour on broom that you could confuse them with. The adults are long-lived and may survive for three seasons, but they do not reproduce until after they have been through one winter.

Once mature the females lay oval eggs, one at a time, mainly on upper surfaces of the leaves. The eggs take about 18 days to hatch into larvae that resemble small brown crocodiles. Look for them feeding on the leaves and shoot tips in late spring and early summer. The larvae grow through four instars and once fully grown they pupate for nearly 3 weeks in the leaf litter. New adults emerge during summer and early autumn and feed for a couple of weeks before entering the soil or litter beneath bushes to hibernate over the winter. The following spring these immature beetles and the older mature beetles emerge over a protracted period of several months. Because eggs are also laid over a period of 3–4 months you may at times be able to find all the developmental stages at once.



Larva

How do broom leaf beetles damage broom?

The adults damage broom by feeding on the leaves and growing points, and the mobile larvae feed on the same parts as well as on fleshy green stems. In Europe this insect sometimes completely strips plants of all their foliage. Heavy feeding reduces the photosynthetic area available to the plant, and because the growing stems are damaged, this further reduces the growth rate of broom plants.

Will broom leaf beetles attack other plants?

Yes, while broom is the preferred host it is likely that the broom leaf beetle will attack tree lucerne (*Chamaecytisus palmensis*) to some extent, and it occasionally may attack ornamental brooms (*Cytisus* spp.), tree lupin (*Lupinus arboreus*) and possibly other lupins (*Lupinus* spp.). A cost-benefit analysis came out strongly in favour of releasing the beetle despite some possible non-target attack, because of the serious threat broom currently poses to New Zealand.

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