TUTSAN BEETLE

Chrysolina abchasica

The history of tutsan beetles in New Zealand

Tutsan beetles are native to Georgia in Europe. They were first imported by Landcare Research for study in 2014. Permission to release the beetles was granted by the EPA in 2016. The tutsan beetle has not been used as a biocontrol agent anywhere in the world before. The first releases of this beetle are expected to be made in 2017.

How would I find tutsan beetles?

The best time to find tutsan beetles is spring through to mid-summer. Look for leaves with notched edges and for whole leaves that have been eaten away. The adults are an iridescent purple colour, and are around 10-15 mm in size. There are no obvious size differences between males and females. The damage may be easier to see than the adult beetles themselves which spend much of their time hiding in the soil and leaf litter during the day.

Females produce more than 100 offspring over a 3-4 month period from spring to early summer. Small yellow cigar-shaped eggs may occasionally be seen, but will be infertile, as it seems that the adults unusually don't lay fertile eggs and produce young larvae instead. The creamy larvae become fat and squat as they grow reaching 6-8mm long. Larvae are often

Larva and feeding damage

Adult

found on the underside of the leaves. Pre-pupal larvae are a bright green, almost fluorescent in colour. Pupation occurs in the ground, and takes around 2-3 weeks. New adults emerge from early to mid-summer and feed on the foliage and then over-winter in the soil. They emerge in spring to mate and produce offspring. The adults live for about a year, and there is only one generation of beetles produced per year.

You are unlikely to confuse the tutsan beetle with other insects. It is similar looking to the St John's wort beetles (*Chrysolina* spp.) but since tutsan is a poor host for these beetles they are unlikely to be found on tutsan unless there is a lot of St John's wort (*Hypericum perforatum*) nearby. A moth is also being released as a biocontrol agent for tutsan but the creamy caterpillars attack the leaf tips, stems and fruits.

See *St John's wort beetles and Tutsan moth.*

How do tutsan beetles damage tutsan?

The adults and larvae feed on tutsan leaves sometimes stripping plants of all foliage.

Will tutsan beetles attack other plants?

The testing of the beetles showed that they could attack and develop on native *Hypericum* species under laboratory conditions. However, a comparison of their performance on these

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species compared to tutsan, and the outcome of similar experiences with other agents, suggests that these results are just a laboratory artefact, and that any attack in the field on them is extremely unlikely. The tutsan beetles may attack St John's wort (*Hypericum perforatum*) in the field but this weed is a less preferred host for them than tutsan. No other plants are expected to be at risk.

How effective are tutsan beetles?

We do not know what impact the tutsan beetles will have in New Zealand. However, the closely related St John's wort beetles are extremely damaging on a closely related host (*Hypericum perforatum*) so we expect the tutsan beetle could be a highly effective agent in due course.

How can I get the most out of tutsan beetles?

If the tutsan beetle establishes at initial release sites it would be worth helping to establish them in all areas where they are needed. The adults can fly but are likely to disperse fairly slowly, possibly only a few kilometres per year.

How do I choose a release site?

Read *Guidelines for selecting release sites for biocontrol agents.*

How do I collect tutsan beetles for release?

Once the beetle is present in good numbers collect and shift at least 300-500 larvae and/or several hundred adults to each new site during summer. To collect them try beating the plants for adults and cutting foliage with larvae on it.

How do I manage the release sites?

Avoid any activities that will interfere with the beetles, such as herbicide application. If you need to undertake control measures then avoid the release site.

Typical adult and larval feeding damage

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