

GIANT REED GALL WASP

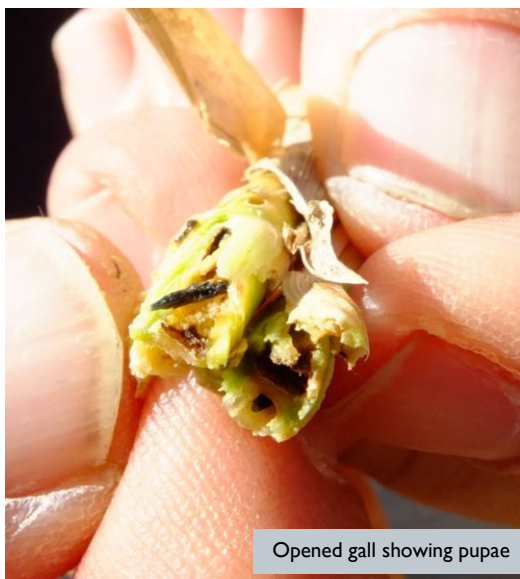
Tetramesa romana

The history of giant reed gall wasps in New Zealand

The giant reed gall wasp is native to the Mediterranean region. They were first imported into containment in New Zealand for study in 2015 by Landcare Research. Permission to release the gall wasps was granted by the EPA in early 2017 and the first field release will begin towards the end of 2017. Releases of the giant reed gall wasp began in the USA and Mexico in 2009, and this insect is beginning to noticeably reduce the vigour of giant reed there. An armoured scale insect (*Rhizaspidiotis donacis*) has also been approved for release in New Zealand and is expected to complement the activity of the gall wasp.

How would I find giant reed gall wasps?

The adults are black and about 5 mm long. Look for them sitting on giant reed plants during the warmer months. The adults are almost always female which produce eggs parthenogenetically (no males required). The eggs are deposited into growing shoots, and each female produces on average 26 eggs in her lifetime. The eggs hatch after 5 days into creamy-coloured larvae which feed inside the shoots. The plant responds to the larval feeding by producing gall tissue,



Opened gall showing pupae



Adult female

which distends the stem within 2 weeks. These swellings can look like small corn cobs on large vigorous stems, or like broadened deformed shoot tips when side shoots are attacked. The gall wasps can also develop within spindly stems without producing any obvious galls.

After feeding for 3-4 weeks, the larvae pupate inside the galls. New adults emerge after about a week, leaving characteristic emergence holes in the damaged stems. The gall wasp can complete a generation in 40-70 days under variable conditions (15-30°C), so multiple generations per year can be expected in the field during the warmer months.

Old empty galls and the exit holes remain quite conspicuous, so it should be possible to detect the presence of the gall wasp all year round.

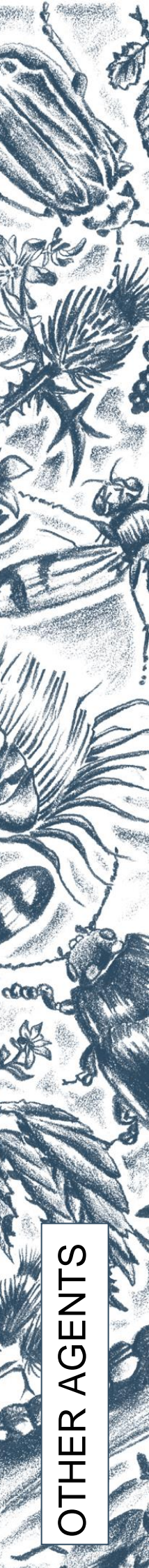
There are no other insects on giant reed that you are likely to confuse with this gall wasp.

How do giant reed gall wasps damage giant reed?

The gall wasp forms terminal galls that stop growth and induce the plant to produce fresh side shoots, reducing overall height and depleting rhizome reserves.



OTHER AGENTS



Will giant reed gall wasps attack other plants?

The giant reed gall wasp is highly host specific and is only expected to attack giant reed (*Arundo donax*) here. No other plants are expected to be at risk.

How effective are giant reed gall wasps?

It is too soon to know what impact the giant reed gall wasp will have in New Zealand but we would expect them to perform similarly to what they have done in the USA. In Texas, researchers have been comparing the performance of giant reed before and after the release of the gall wasp at 10 sites. They have already recorded clear differences in plant health. By 2014 (5 years after release), above-ground biomass had decreased by an average of 22%, with 10% mortality of main shoots and 17% mortality of lateral shoots. The decline in biomass was correlated with increased total



numbers of gall wasp exit holes in main and lateral shoots per site. Estimated live biomass declined a further 32% between 2014 and 2016 (giving an overall 45% reduction in 7 years). The amount of damage caused by the gall wasp is expected to increase as their populations build further.

How can I get the most out of giant reed gall wasps?

If the gall wasp establishes at initial release sites it would be worth helping to establish them in all areas where they are needed. Dispersal rates of 10-25 km per year have been reported in Texas, but dispersal here is likely to be significantly slower since there will be fewer generations per year due to our cooler climate, and because giant reed grows here in relatively isolated patches.

How do I choose a release site?

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

How do I collect giant reed gall wasps?

When mature galls are present in good numbers cut them off giant reed plants and tie them on to stems at new sites. Aim to shift up to 50 galls to each new site at any time during mid to late summer, ideally when there are only 1-2 exit holes indicating emergence of new adults is beginning. Sheltered release sites are recommended.

How do I manage the release sites?

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

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