

## FOCUS GROUP REPORTS: RESEARCH

# COMBATting THE GIANT WILLOW APHID THREAT

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In late July 2016, the Sustainable Farming Fund (SFF) announced funding of collaborative research into methods to combat the giant willow aphid (GWA). The project team, led by Apiculture New Zealand (including Barry Foster and Dr John McLean from the ApiNZ Research Focus Group), together with scientists from Scion and Plant & Food Research, leapt into action to finalise the cash contributions from industry.

Scion's entomology team, working with a number of partners, immediately began working to identify natural overseas enemies of GWA that could be utilised as biological control agents. The search for resistant willow varieties is also under way in collaboration with Plant & Food Research.

Andrew Pugh from Scion travelled to Japan in August to locate collection sites for giant willow aphids and to look for incidence and timing of attack by parasitic wasps (parasitoids). He was hosted by Kenichi Ozaki at the Forestry and Forest Products Research Institute in Tsukuba. Some parasitoids have already been successfully reared from collected aphids, and are awaiting identification by a taxonomic expert in Japan.

This initial Japan visit is vital for planning a subsequent trip in 2017 to collect and import the live parasitoids to the containment facility

*Dead remains of giant willow aphids on a willow in Japan, after parasitoids have emerged. Photo: Andrew Pugh, Scion, 2016.*



Barry Foster recently visited Scion's biological containment facility at Rotorua, where he was hosted by Dr Toni Withers (left) and Dr Stephanie Sopow, who are involved with the GWA parasitoid project. Photo: Barry Foster.

at Scion in Rotorua. By that time, Scion will have prepared colonies of giant willow aphid ready for the parasitoids to infest and will be able to test the efficacy of the new organism for its control potential. After testing on giant willow aphid and establishing a parasitoid colony, trials will be conducted on other aphid species to make sure they are not affected by the parasitoid. The photograph at left shows empty 'aphid mummies' AFTER the parasitoid has eaten out their insides and exited from the dead remains. It may appear gruesome, but it is a pleasing sight to Scion entomologists!

Dr Stephanie Sopow, also from Scion, travelled to California in September with the same aims as Andrew Pugh. She will be based at the University of California, Davis. Sourcing the biological control agent from two areas of the world will provide greater genetic diversity among the parasitoids collected, and may increase chances of success for controlling the population of giant willow aphid in different climatic regions of New Zealand. Looking for parasitoids in two countries also provides Scion with a backup plan in case anything goes wrong along the complex chain of events needed to successfully import a live agent and establish a population in containment.



## FUNDING ASSISTANCE SOUGHT

We are looking for further co-funding for this project. Simply put, we can do more with more, so it's not too late to be a contributor to this group. If you'd like to be a part of the solution to this pest, please phone Barry Foster (06) 867 4591 or contact our CEO Daniel Paul at ApiNZ Wellington, (04) 471 6254.