



Bye Bye Beetle

A pesky insect invading – and destroying – our valuable eucalyptus plantations may finally have met its match. As part of a Sustainable Farming Fund project, a tiny wasp that dines on the larvae of the destructive Tortoise beetle is currently being signed up as a biocontrol agent.

After a long, meticulous lab testing period, Scion is seeking permission to release *Eadya daenerys*, a parasitic wasp that attacks the beetle's spring-time population. And although it will take time to build up, the hungry wasp has potential to slash beetle numbers – and improve the health of our eucalyptus industry.

Eucalyptus are a vital element of our diversified forest estate, earning revenue worth more than \$40 million annually through pulp alone. Recurrent defoliation caused by tortoise beetle will eventually kill many trees of certain species, seriously impacting on this important local industry.

Until 2000, an egg parasitoid kept the tortoise beetle at bay. Then a parasite of the parasite (a hyper-parasite) turned up and disrupted this arrangement. The beetle is once again chewing through eucalyptus leaves and reducing tree productivity.

Without effective biocontrol, plantation forest managers have been forced to use aerial sprays. But not only is this costly in financial terms, it is a

potential risk to honey bees, native fauna and human health and therefore is not a sustainable option.

Scion has tested the wasp in a high security containment laboratory to first ensure it is a viable biocontrol agent and that other species will not be affected by its potential introduction. The University of Tasmania has been part of this research collaboration.

Scion and its other partners have also engaged with communities to ensure any concerns over the potential introduction of *Eadya daenerys* are fully addressed.

This process identified very low risks for non-target beetles that need to be weighed against the potential benefits of controlling the tortoise beetle.

An economic analysis of this benefit versus risk trade-off will help to inform the “application to release” currently being submitted to the New Zealand Environmental Protection Authority for approval.

Contributing partners to the project were Alternative Species Partnership (proposed MBIE Partnership), Earnslaw One Ltd, NZ Farm Forestry Association, Oji Fibre Solutions NZ Ltd, South Wood Export Ltd, and Timberlands Ltd.