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*Neolema ogloblini: exploring a new
option for the control of tradescantia
(Tradescantia fluminensis)*



"The endemic productions of New Zealand, are perfect one compared with another; but they are now rapidly yielding before the advancing legions of plants and animals introduced from Europe"

Charles Darwin; The Origin of Species, 1859/2003 (p: 195)

"No other plant of similar size has the ability to alter the form or shorten the life of a forest"

A. E. Esler on tradescantia; Forest Remnants of the Manawatu Lowlands: The Banks Lecture, 1962 (p: 257)

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Abstract

Invasive weeds pose one of the biggest threats to New Zealand's remaining native forest, and the effects are predicted to increase as the amount of invasive species continue to increase.

This thesis looks at the first biological control agent (*Neolema ogloblini*) released for the control of tradescantia (*Tradescantia fluminensis*), provides baseline data to aid later assessment of the efficacy of the control agents, and compares the two current methods of tradescantia control.

In glasshouse trials, I compared the effects of the biological control agent *N. ogloblini* and the traditional herbicide. This was assessed by measuring the survival and growth of two species of native seedlings planted underneath treated (or un-treated) tradescantia. Light reaching soil-level beneath the tradescantia canopy was also measured, as was dry biomass of the tradescantia. One seedling species (Kawakawa, *Macropiper excelsum*) growth rate did respond favourably to the significantly increased light and reduced tradescantia biomass following feeding by *N. ogloblini*, but the other species (Mahoe, *Melicytus ramiflorus*) did not. Survival rate was higher for all seedlings under tradescantia treated with *N. ogloblini* compared to those that were untreated or treated with herbicide.

I also set up and surveyed permanent plots in an area that has a long-standing swath of tradescantia. The data produced from this should aid in the assessment of the biological control agent if field trials are performed in the future at this site.

Finally, I compared the regrowth of tradescantia and other species into areas that were treated with mechanical or chemical control. The regrowth of tradescantia was not significantly different between the two methods, nor was the invasion and growth of other species.

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