EXPLORING BIOLOGICAL CONTROL TO MANAGE INVADING POPULATIONS OF CLOVER ROOT WEEVL

J.M. Kean¹, C.B. Phillips², M.R. McNeill³, S. Hardwick⁴, C.J. Vink⁵, T.M. Eden⁶, & P.J. Gerard⁷

¹AgResearch, Private Bag 4749 Christchurch, New Zealand, john.kean@agresearch.co.nz; ²AgResearch, Private Bag 4749 Christchurch, New Zealand, craig.phillips@agresearch.co.nz; ³AgResearch, Private Bag 4749 Christchurch, New Zealand, mark.mcneill@agresearch.co.nz; ⁴AgResearch, Private Bag 4749 Christchurch, New Zealand, scott.hardwick@agresearch.co.nz; ⁵AgResearch, Private Bag 4749 Christchurch, New Zealand, cor.vink@agresearch.co.nz; ⁶AgResearch, Private Bag 3123 Hamilton, New Zealand, tina.eden@agresearch.co.nz; ⁷AgResearch, Private Bag 3123 Hamilton, New Zealand, pip.gerard@agresearch.co.nz

ABSTRACT.

The clover root weevil, *Sitona lepidus* Gyllenhal (Coleoptera: Curculionidae), has been well-established in the North Island of New Zealand for over a decade, but has only recently been found in parts of the South Island. A parthenogenetic strain of the parasitoid wasp *Microctonus aethiopoides* Loan (Hymenoptera: Braconidae) was introduced into the North Island in January 2006 and is promising to achieve effective biological control. This system presents a rare opportunity to trial classical biocontrol as a strategy for slowing the establishment and spread of early invasive clover root weevil populations in the South Island. Mass-emergence devices are being investigated for releasing the parasitoid into low-density weevil populations at the leading edge of the invasion, and sampling is being undertaken to assess whether the parasitoid population can keep pace with the spread of the host. In addition, population models are being used to explore the circumstances under which natural enemies may prevent or slow the spread of invading insect populations, as has been previously demonstrated with weeds.