Detection of young *Microctonus hyperodae* eggs in the Argentine stem weevil (*Listronotus bonariensis*)

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The braconid endoparasitoid *Microctonus hyperodae* was successfully introduced into New Zealand in 1991 to control the exotic pastoral pest Argentine stem weevil (ASW). The wasp parasitises adult ASW and the weevil normally dies only when the fifth-instar parasitoid larva emerges. However, during biocontrol research over the last 20 years, premature mortality of ASW has been observed under conditions of high parasitoid pressure in the field and laboratory. It was hypothesised that this occurs because of injection of venom without an egg. To conclude absence of a parasitoid egg in a prematurely dead weevil, a sensitive method is needed to detect a newly oviposited parasitoid egg. However, this cannot be confirmed by visual observation or by dissection, because fresh tissue is subsequently needed to detect venom. A molecular method was therefore developed. Firstly, to model oviposition, eggs were dissected from the ovaries of an adult parasitoid and one ovarian parasitoid egg was used to spike ASWs that had been dissected to confirm absence of parasitism. Secondly, multiplex-PCR was successful in detecting a single ovarian egg in ASW. This result greatly benefits research into the observed premature mortality of ASW after being exposed to *M. hyperodae*.

Implications of registered insecticide reassessment for pasture pest management

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As part of an assessment of the risks, costs and benefits of substances approved under the HSNO Act, ERMA has established a list of potentially harmful materials for reassessment. The initial "Chief Executive Initiated Reassessment List" contains 20 potentially hazardous substances of which 12 are insecticidal chemicals, including some widely used in pastoral agriculture. Pastoral intensification resulting from dairying and forage cropping appears to have stimulated an increase in insecticide use. This is the reverse of the trend that coincided with the implementation of biological control and integrated pest management in the 1990s, when there was a decline in the quantity of insecticides used in the pastoral sector. The ERMA process follows international trends that have led to the de-registration of many pesticides based on old highly toxic chemistries, effectively withdrawing them from international markets. It is important for researchers and pest managers to be aware of the potential withdrawal of commonly used insecticides and develop alternative strategies for pest management.