

Assessing the potential ecological impacts of the Hadda Beetle (*Henosepilachna vigintioctopunctata*)

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Eligible for student prize

The decision to eradicate invasive phytophagous insects in New Zealand appears to be predominantly based on the estimated potential damage to commercial crops (production and pest management costs) versus the estimated cost of eradication. As a result, incursion responses may be stood down for phytophagous insects when the potential for native plants to be hosts is not fully accounted for within the risk assessment process. Hence, the lack of a thorough assessment could result in a decline of native plant populations. The hadda beetle (*Henosepilachna vigintioctopunctata*) incursion is one such instance where the eradication response was stood down without full assessment of the risk to native plant species. This herbivore feeds on three plant families for which New Zealand has ecologically important native representatives. However, the specificity of the beetle and its ability to fully develop through its life cycle on native New Zealand plants is unknown. In my study, I retrospectively determine the risk to New Zealand native plants by establishing if the hadda beetle will feed and fully develop on native plants from the Solanaceae family. The beetle's host specificity is determined through no-choice and multi-choice feeding tests, with results to date indicating a wide host range within New Zealand Solanaceae, with larvae and adults feeding on *Solanum aviculare* var. *aviculare*, currently listed as At Risk/Declining under the New Zealand Threat Classification System. This study will highlight the importance of adequate assessment of risk to New Zealand native species.

