

Exploratory study of *Macrosiphum hellebore*'s vectoring capability of Helleborus Net Necrosis Virus

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Helleborus are rhizomatous herbaceous perennial plants cultivated for their flower structure blossoming from late winter through to early spring. *Macrosiphum hellebore* Theobald & Walton is a monophagous species found in association with Helleborus, recently being identified in Australia in 2009. In 2009 a Carlavirus, Helleborus Net Necrosis Virus (HeNNV) or more commonly referred to as 'Black Death,' tested positive in Helleborus species within the United States. Symptomatic plants exhibit black streaking of the veins on leaf blades and a blackening of the stems with heavily infected plants perishing within a single season. The first incursion of HeNNV in Australia was positively confirmed in 2010. Although *M. hellebore* is a monophagous species the insect's ability to acquire and transmit HeNNV has yet to be proven. A transmission experiment under laboratory conditions, will be conducted by exposing groups of *M. hellebore* adults to infected and then uninfected Helleborus plants. Exploratory studies will also be conducted to investigate *M. hellebores* through a range of experiments to further understand this insect through parameters such as, developmental time, temperature's effect on development time, fecundity as well as, artificial rearing techniques. The purpose of this experiment is to determine if *M. hellebore* is capable of vectoring HeNNV and to a lesser extent CMV under laboratory conditions. Through conducting these experiments a possible target for vector control could be identified, enabling a means to stop HeNNV spreading throughout Helleborus species.

