

Host-specificity testing for the tradescantia leaf beetle (*Neolema ogloblini*)

Umar Lubanga¹, Greg K. Lefoe¹, David McLaren¹, Tony M. Dugdale¹, Raelene M. Kwong¹

¹Invertebrate & Weed Sciences, Agriculture Victoria Research Division, Department of Jobs, Precincts and Regions, AgriBio Centre, Bundoora, Australia

(umar.lubanga@agriculture.vic.gov.au)

Summary *Tradescantia fluminensis* was declared a Target for Biological Control in December 2015 by the Invasive Plants and Animals Committee (IPAC). New Zealand researchers identified three leaf beetles and the smut-like fungus *Kordyana brasiliensis* from the native range (south-eastern Brazil) as potential biocontrol agents of the weed. Host-specificity studies of all four agents were completed, and agents approved for release in New Zealand. To date, Australian host-range studies have mainly focussed on *K. brasiliensis* and the tradescantia leaf beetle, *Neolema ogloblini*. Host-specificity testing of *K. brasiliensis* was completed by CSIRO and the agent was approved for release in December 2018. Host-specificity testing of the *N. ogloblini* was carried out by Agriculture Victoria. Standard choice and no-choice tests showed *N. ogloblini* to be highly host specific to *T. fluminensis*. Although larvae completed development on seven of the twenty-five plants tested under no-choice conditions, oviposition occurred on only five of these species and none of the eggs - hatched to

develop into adults. Minor damage (unlikely to impact the fitness of affected plants) was recorded on some non-target species in starvation trials highlighting the possibility of spill-over damage for affected non-target species that occur in close proximity to *T. fluminensis*. None of the tested plants sustained *N. ogloblini* populations over successive generations, suggesting reduced risk of consistent adult feeding damage in the field. Lastly, assessment of risk of off-target attack in the field using Paynter et al. (2015)'s scoring system showed that it is highly unlikely that any of the non-target species tested will be attacked in the field. An application for release of *N. ogloblini* will be submitted to the Department of Agriculture, Fisheries and Forestry and if approved for release *N. ogloblini* will complement *K. brasiliensis* in drier environments that are not favourable for fungal growth.

Keywords Biological control, Commelinaceae, Host-specificity testing, Wandering trad