Naturally occurring predators of *Bactericera cockerelli* in potatoes

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In recent intensive sampling of insecticide-free potatoes at Pukekohe, several insect predators and spiders have been found in association with the new pest *Bactericera cockerelli*, tomato-potato psyllid (TPP). *Micromus tasmaniae* (brown lacewing), *Melanostoma fasciatum* (small hover fly), *Coccinella undecimpunctata* (11-spotted ladybird) and sheet web spiders (Linyphiidae) were collected from potatoes at Pukekohe Research Station and reared in the laboratory to assess their potential as predators against TPP nymphs. Individual predators were presented every 24 h to a maximum of 10 TPP nymphs of different instars ranging from 2nd to 4th instar depending on the size of the predator. All predator species fed on TPP nymphs, and all predatory life stages were capable of consuming more than five nymphs per day. Ongoing studies with these species show that all predatory life stages of all predatory species feed on all life stages of TPP. Together with separate data on predator incidence, these results suggest that naturally occurring predators are likely to be important biological control agents of TPP, particularly early in the season when TPP infestations are low.

The lifecycle and epidemiology of *Bactericera cockerelli* on three traditional Māori food sources

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The tomato/potato psyllid, *Bactericera cockerelli* (Sulc) (Hemiptera: Triozidae), is an introduced pest of solanaceous crops in New Zealand. A range of established plants play host to *Bactericera cockerelli* including three traditional Māori food sources: taewa or Māori potatoes (*Solanum tuberosum* ssp. *andigena*), kūmara (*Ipomoea batatas*) and poroporo (*Solanum aviculare*). Taewa and kūmara are highly susceptible to summer *B. cockerelli* infestation, whilst poroporo, an evergreen plant, remains susceptible year-round and provides overwintering refuge. Extensive monitoring of each host plant was carried out to determine the significance of each host in the lifecycle of *B. cockerelli* in New Zealand. Poroporo was monitored from late autumn for 6 months to determine if the plant served as a significant overwintering host for the pest after harvesting summer crops. Taewa and kūmara plants were monitored throughout the summer growing season on a weekly basis, increasing to twice a week as populations proliferated. Host plants were monitored both in the natural environment and under laboratory conditions. Data collected contributed to tracking population development of *B. cockerelli* on each host including the length of each life stage (i.e. egg, nymph, adult). Comparisons between the three hosts revealed host preference, host suitability and the significance of each host in the lifecycle progression of *B. cockerelli*.