The potential number of generations of *Bactericera cockerelli* in New Zealand

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The tomato potato psyllid (TPP), *Bactericera cockerelli*, invaded New Zealand in 2006 and has now spread throughout most of the country. TPP is an economically important pest of solanaceous crops that not only causes damage through its feeding but also transmits the bacterium *Candidatus Liberibacter solanacearum*, which is associated with zebra chip disease in potato. Published developmental thresholds, meteorological data, and potato emergence and harvesting dates were used to estimate the potential number of generations of TPP for the main potato-growing regions in cold, average and hot spring and summer seasons in the 2006-2013 period. Temperature was highly variable in spring and summer between regions and between years within a region. The main effect of higher temperatures was that TPP generations were completed earlier, which resulted in up to one extra generation in a season. In the North Island regions, spring temperatures were such that up to two generations could develop before potato emergence, in contrast to the South Island, where less than one generation occurred during this time. This information can be used by crop managers to target management interventions for TPP more effectively.

Farm-scale assessments of natural enemies for controlling *Bactericera cockerelli* in potatoes with *Phacelia tanacetifolia* as a border planting

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AS Wilcox & Sons are investigating planting *Phacelia tanacetifolia* (phacelia) alongside commercially grown potatoes to attract natural enemies into the crop to control *Bactericera cockerelli*, the tomato potato psyllid. Using the validated method of 'middle leaf' sampling in potatoes to assess crop infestations and predator numbers, assessments were conducted from November 2012 to January 2013 in Wilcox crops at Pukekohe, Waiuku and Matamata. Insect numbers with and without phacelia plantings, and over differing distances from the phacelia, were compared. At sites with phacelia, *Melanostoma fasciatum* (small hover fly) numbers were significantly increased when compared to the site without, while the other common predator found on potatoes, *Micromus tasmaniae* (brown lacewing), was generally unaffected. The number of hover flies (eggs and larvae) at phacelia sites ranged from almost 4/middle leaf at 5 m from the planting to <1/middle leaf at 100 m away, compared with a maximum of 0.15/middle leaf at the site with no phacelia. *Phacelia tanacetifolia* plantings are an important reservoir for hover flies and are likely to be a useful IPM tool in potatoes.