

## POPULATION DYNAMICS OF CLOVER ROOT WEEVIL (*SITONA LEPIDUS*) IN THE MANAWATU

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Population dynamics of CRW in the Manawatu were observed in the field over a 10 month period (April to January). The aim was to determine whether or not CRW adults in the region had two overlapping generations per year. Overlapping generations will be important for supporting a parasitoid, *Microctonus aethiopoidea*, recently released to control CRW. The population parameters that were sampled included: the number of CRW adults/m<sup>2</sup>; percentage of reproductively mature females; and the number of CRW larvae and pupae/m<sup>2</sup>. Peak adult numbers were evident in April (8/m<sup>2</sup>) and January (13/m<sup>2</sup>). Peak larval numbers were observed during June and July (48.9/m<sup>2</sup>) and in October and November (66.7/m<sup>2</sup>). This pattern is similar to that occurring in the Waikato, where CRW has two generations per year. This suggests that CRW also has two generations in the Manawatu, with one generation emerging in late summer or autumn and a second generation emerging in early spring. Pupal numbers indicated that these two generations overlapped in late spring, although adult numbers were very low.

## THE EFFECT OF FOLIAR FERTILISERS ON CLOVER FLEA (*SMINTHURUS VIRIDIS* (L.)) (COLLEMBOLA: SMINTHURIDAE) SURVIVAL

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Clover flea (*Sminthurus viridis* (L.)) is a sporadic and at times serious pest of white clover in New Zealand. Two replicated laboratory bioassay experiments were undertaken to investigate whether application of two foliar fertilisers, Plant Plasma<sup>®</sup> and Nitrosol<sup>®</sup>, to white clover foliage affected clover flea feeding and survival. In the first bioassay, under no-choice conditions, significantly less clover flea feeding was observed on white clover foliage treated with either Plant Plasma<sup>®</sup> or Nitrosol<sup>®</sup> compared with the water treated control (P<0.01). A second bioassay, utilising both choice and no-choice tests, found similar results, with less clover flea feeding observed on white clover foliage treated with either product (P<0.001). Furthermore, clover flea survival was reduced in the presence of white clover treated with either fertiliser in the no-choice treatments in bioassay 2 (P<0.01). This preliminary study indicates that foliar fertilisers may exhibit a repellent effect and higher mortality due to a modification in behaviour of clover flea. However, only further laboratory and field investigations into clover flea feeding, behaviour and survival in the presence of plant material treated with Nitrosol<sup>®</sup> and Plant Plasma<sup>®</sup> will validate the interesting results observed in this study.