THE EFFECT OF TEMPERATURE ON EMERGENCE OF APPLE LEAF CURLING MIDGE AND ITS PARASITOID *PLATYGASTER DEMADES*

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Effect of soil temperature on emergence of apple leaf curling midge (ALCM) and its parasitoid, *P. demades*, was studied in the laboratory. Apple leaves infected with 1st and 3rd generation ALCM larvae were collected from Auckland, Nelson and Hawke's Bay in November 2004 and January 2005. In the laboratory, larvae were reared in boxes with a layer of potting mix at five constant temperatures (11, 15, 19, 23 and 27°C), and daily numbers of ALCM and *P. demades* adults that emerged in 2nd and 4th generations were recorded. Emergence patterns and rates of emergence for both insect species at the five temperatures were compared across two generations and three locations. Levels of parasitism varied among samples but more parasitoids emerged at 19°C for both generations. Development time of the pupae for both insect species was influenced by temperature but *P. demades* took a longer period to develop at lower temperatures than ALCM, resulting in longer intervals between ALCM and *P. demades* emergence. Results suggest that soil temperature has an impact on the lack of synchrony of 2nd generation emergence between ALCM and *P. demades* primarily in the spring when soil temperature in most areas is below 15°C.

STICKY TRAPS FOR MONITORING BENEFICIAL INSECTS IN PIPFRUIT ORCHARDS

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Biological control of apple pests is an important aspect of integrated fruit production (IFP). Sticky traps provide a useful tool for monitoring activity of important beneficial insects. Beneficial insects within a block of disease resistant apples have been monitored for four seasons, from 2001-02 until 2004-05, using a 190 x 180 mm single-sided sticky trap. The sticky trap has been mounted on the same tree in the block for all seasons with the base being replaced weekly or fortnightly throughout each growing season (September to April). Key beneficial insects monitored included *Platygaster demades*, *Aphelinus mali* and *Encarsia pernicio*i, which are parasitoids of the important pipfruit pests, apple leaf curling midge (*Dasyneura mali*), woolly apple aphid (*Eriosoma lanigerum*) and San Jose scale (*Quadraspidiotus perniciosus*) respectively. The aim of this work is to monitor the long term potential for biological control of pest populations in the absence of disruptive pesticides.