

Chemical Control/New Products

Evaluation of Reduced-Risk Alternative Control Programs for Insect Pests of Apple and Their Potential Impact on Beneficial Insects

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Abstract: In 2003, there were 18,000 acres of apples grown in Ontario with a farm gate value of \$65 million, making it one of the most important fruit crops in the province. Currently, the Ontario apple integrated pest management (IPM) program relies heavily on the use of organophosphate (OP) insecticides to manage several key economic insect pests of apple. In general, OP insecticides are considered to be highly toxic to beneficial insects that play an important role in suppressing insect pests in apple orchards. Reduced-risk alternative insecticides are registered in the US, however these products are not currently registered for use in Canada. The objectives of this project are to 1) assess the efficacy of reduced-risk alternative control products in various pest management programs for insect pests of apples in Ontario and 2) evaluate the impact of these reduced-risk programs on beneficial insects and mites found in apple orchard ecosystems. In 2004, field trials were conducted in five commercial orchards in Ontario where 4 insecticide programs (3 reduced-risk programs and 1 conventional program) were compared using a randomized complete block design, with each orchard representing a replicate. Growers applied the treatments with airblast sprayers based on the results of crop monitoring. Preliminary results suggest that reduced-risk pesticide programs provided effective control of plum curculio, codling moth and apple maggot. The pesticide treatments tested did not appear to have an effect on beneficial insects.