Chemical Control/New Products

Insecticide Evaluations for Codling Moth Control in Pear and Apple

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Abstract: Tests conducted in 2004 with acetamiprid, clothianidin, difluorobenzamide and thiacloprid included bioassays to evaluate their ability to prevent codling moth (CM) eggs from hatching and field trials to evaluate efficacy of formulations, rates and application intervals against CM. A statistically significant concentration-based effect was noted with each of the neonicotinyl insecticides (acetamiprid, clothianidin and thiacloprid) in both residual and topical bioassays. A comparison of lethal concentrations indicated that the LC_{50}s in the topical bioassays were significantly lower than in the residual bioassays suggesting that the products would be more toxic to eggs that were exposed topically. Bioassays with difluorobenzamide indicated that the product was highly toxic to CM eggs if the eggs were exposed topically or residually. Acetamiprid, thiacloprid and difluorobenzamide all provided good CM control when used alone or in program combinations with other available products in field trials against CM. Clothianidin did not provide the same level of CM control as the other products. A tank-mix tactic combining the use of a neonicotinyl (acetamiprid, clothianidin or thiacloprid) with an insect growth regulator (IGR) (difluorobenzamide or methoxyfenozide) was consistently effective in reducing CM fruit injury in both pear and apple. The tank-mix application was applied once per CM generation (350/1350DD) and was preceded by an oil (1%) application in each generation (200/1200DD).