

Chemical Control/New Products

Complete Versus Alternate Row Middle Applications of Insecticides for Internal
Lepidoptera Control

Larry Hull and Greg Krawczyk

Penn State University, Fruit Research and Extension Center, Biglerville, PA

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Abstract: A large plot study was designed to evaluate different insecticides (Imidan® [phosmet], Calypso® [thiacloprid], and Assail® [acetamiprid]), applied using two methods of applications – alternate row middle (ARM) and complete (both row middles) sprays for their ability to control both the oriental fruit moth (OFM), *Grapholita molesta*, and the codling moth (CM), *Cydia pomonella*. All insecticide treatments were applied with an airblast calibrated to deliver 100 gpa for complete sprays. Three complete applications were made at ≈14-day interval versus six ARM applications at ≈7-day intervals for each treatment except the Assail treatment, which was applied with only the ARM method. In addition, the residual larvacidal and ovicidal activity of each treatment against both CM and OFM was measured in a series of weekly fruit bioassays during the course of the study. There was no difference in OFM fruit injury at harvest when applying complete or ARM applications for Imidan, but the complete applications were more effective than ARM for Calypso. In addition, Imidan (3 lb/acre) was more effective than Calypso (4 fl oz/acre), regardless of method of application, and Assail (2.5 fl oz/acre) was more effective than Calypso when applied as ARM applications. The residual fruit bioassays showed that fruit collected from the most recently sprayed side of the tree was more effective against both CM and OFM larvae than fruit collected from the unsprayed side of the tree when using the ARM method of application; whereas, complete applications gave better control of both CM and OFM than ARM applications, especially when fruit were collected from the unsprayed side of the tree.