Orchardists and horticulturists have been eager to learn about new pest management tools and strategies.

Pesticide transition piques interest

New insecticides are not Guthion substitutes.

By Geraldine Warner

Representatives of more than 43,000 acres of orchard are taking part in a Washington State University project designed to help the Washington apple industry transition to new methods of managing pests.

Keith Granger, manager of the Pest Management Transition Project, has set up 14 implementation units made up of local groups of growers, managers, consultants, and horticulturists who have been meeting this season to share information about their pest management programs and discuss new insecticides and technologies for pest control.

A surprised Granger said the acreage represented in this project is double what he had anticipated.

The standard codling moth control, Guthion (azinphos-methyl) is being phased out, and Granger said many growers have been motivated to try the new products because the 14-day re-entry interval for Guthion is difficult to work with. Although Guthion will be available until 2012, this is the time to start learning about the new technologies and how they fit into a pest management program, he said.

The new products are not Guthion substitutes and need to be used as part of a different strategy, rather than plugging them into a pest management program in place of Guthion, he explained during a series of field days this summer. If the new products are not used correctly, there can be field failures. Growers might say the product didn’t work, when in reality the application timing was wrong.

The Pest Management Transition Program began last year, with funding from the state of Washington, with the goal of helping growers make the transition to new pest management tools.

Strategy

Dr. Jay Brunner, director of WSU’s Tree Fruit Research and Extension Center in Wenatchee, noted that a decade ago, growers had few codling moth insecticides to choose from. Now, several are available. Delegate (spinetoram), a product similar to Success, was registered last year. Altacor (rynaxypyr) was registered this season. Belt (flubendiamide) was expected to be registered this season.

The new products have relatively short reentry intervals of between 4 and 12 hours, which makes labor management easier. All have low toxicity to mammals, and the risk of exposure to these products is very low, Brunner said. "That’s one of the advantages of transitioning to these products, but it takes time to learn to use them and integrate them into your program."

Mating disruption, using a full rate of pheromone dispensers, is considered the basis of the codling moth control program, with insecticides applied as supplements. It’s estimated that mating disruption is used on 80 percent of Washington’s 175,000 acres of apples.

Lorsban (chlorpyrifos) is the standard prebloom treatment for codling moth and leafrollers, but the new insecticides make it more feasible to drop Lorsban from the program, Brunner said.

“In the petal fall period, when we start thinking about leafroller control, we also now start to think about controlling codling moth at that time, because of the new tools available.”

The insect growth regulators Intrepid (methoxyfenozide), Rimon (novaluron), and Esteem (pyriproxyfen), when applied at petal fall, will control leafroller larvae and coincidentally kill codling moth eggs that are laid on top of the spray residue. That limits the number of early eggs laid in the orchard, which means that the first cover spray for codling moth can be delayed.

Normally, the first cover spray for codling moth would be applied at 250 degree-days after bloom, but with the use of insect growth regulators at petal fall to kill eggs, the cover spray for codling moth could be delayed until 500 degree-days after bloom. It would make labor management easier.

© Good Fruit Grower 2008.
New insecticides are not Guthion substitutes.

Granger noted that most of the new insecticides have shorter residual activity than Guthion, and are unlikely to be effective for more than 7 to 14 days, so applications need to be timed carefully. Good spray coverage also is important because the new products must be ingested by the pest to be effective.

For the first cover spray, a larvacide, such as Assail (acetamiprid), and an ovicide, such as Intrepid or Rimon, can be tank mixed to target both eggs and larvae. Often no additional treatment is needed for the moth’s first generation.

Monitoring

Granger said monitoring is a weak point in integrated pest management programs, and recommended a three-pronged approach:

Trapping: One trap is recommended for every 2.5 acres of orchard in order to have a good idea of the pest’s population density and distribution in the area, and to make better control decisions. For example, it might not be necessary to spray the whole block. "If you can drop one spray on half of your block, you’ve probably paid for a couple of years of monitoring," Granger noted.

Nick Stephens, a regional coordinator for the Pest Management Transition Project, said this year he recommended growers use DA lures in orchards where mating disruption was used. The DA lure contains a combination of the codling moth pheromone and a pear ester and appeared to be more effective and sensitive than other lures in mating-disruption orchards.

Brunner said researchers are working on how to interpret results with the combination lure. However, because of its efficacy, a grower can be more confident than with other lures that a zero trap catch does mean that there is no codling moth pressure in the area.

Phenology models: Degree-day models indicate when the grower should be sampling, what life stage of the pest to be looking for, and when to treat. Phenology models used to be difficult to work with, Granger said, but now with WSU’s Web-based Decision Aid System (http://das.wsu.edu) it’s a fairly painless process. The Decision Aid System integrates data from 113 AgWeather Net sites with insect and disease models, and provides management options and pesticide databases for conventional and organic users. Users have the option of using their own weather data.

Granger said DAS is a resource that is far too valuable for anyone to pass up. "If you’re not using it, you’re missing out on an enormous amount of information."

Visual inspection: Check the orchard for leafroller larvae and fruit injury during the season to find out if your monitoring system is working and your phenology model is timed accurately for what is happening in the orchard, Granger suggested. It’s important to know early on if there is fruit injury. Once the crop is in the bin or at the warehouse, it’s too late to make adjustments to the pest management program, Granger said.

For more information, check the Web site at http://pmtp.wsu.edu or e-mail pmtp.info@wsu.edu.