

Experts offer pesticide alternatives in fight against SWD

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Concerns about the continued efficacy of pesticides are leading farmers to look for alternatives in their fight against the spotted wing drosophila, expert say.

New weapons are needed due to worries that the insect will eventually develop a tolerance to commonly-used pesticides, said Amy Dreves, an Oregon State University Extension entomologist specializing in integrated pest management.

"People are looking for what else is out there," she said.

Dreves was recently joined by experts from Washington State University and the National Research Council of Italy in discussing biological controls for the invasive fruit fly during an Aug. 4 workshop organized by the Northwest Center for Alternatives to Pesticides in Eugene, Ore.

Aside from pesticide resistance, farmers are also cautious about traces of insecticides that can affect their ability to export crops, known as maximum residue levels, said Beverly Gerdeman, an entomology research associate at WSU.

"It gives other countries a great deal of power about what's brought into their country," she said.

Growers are currently confident they can control the fly with regular applications of organophosphates and pyrethroids, but spotted wing drosophila has disrupted the biologically-based "integrated pest management" approach to managing insects, Gerdeman said.

against mid- and late-season crops, Dreves said.

"That becomes the breeding source for the next harvest," she said.

It's possible that cultivating or raking the soil between crop rows will help remove or destroy the debris where the flies can fester, she said.

"We've got to think of some ground applications," Dreves said.

Similarly, farmers can try to limit spotted wing drosophila populations in nearby sites where they lay eggs on wild-growing plants such as Himalayan blackberry, dogwood and honeysuckle, she said.

Placing a large number of traps within those "non-crop egg-laying sites" can kill the insects and steer them away from marketable fruit, but if farmers opt to remove the plants, they should replace them with flowering species, she said.

Parasitic wasps that feed on the fruit flies also require flowers for nectar and pollen, Dreves said.

Emilio Guerrieri, an entomologist with the National Research Council of Italy, said he's identified 10 types of parasitic insects that specifically prey on spotted wing drosophila in China, where the pest originates. Another 9 have been found in South Korea.

However, this method of control is complicated by regulatory hurdles, he said. "It's virtually impossible to take anything alive out of China."

Spotted wing drosophila is also susceptible to existing "generalist" predators that eat other insects, but these often appear once populations are high, said Gerdeman.

"Right now, we have no such thing as IPM for spotted wing drosophila," she said.

Even so, experts are developing ways to reduce their reliance on chemicals in suppressing the fruit fly.

"My mission is to find ways to tackle this beast," Dreves said. "There's hope out there. There are things happening."

The flies thrive in humid conditions, which farmers can reduce by using drip irrigation instead of overhead sprinklers, she said. "They are not sun baskers."

Pruning the canopy of crops, such as canberries, can improve aeration to the detriment of the spotted wing drosophila, she said. Researchers are still examining the best pruning techniques to avoid harming the crop.

"If you prune, you're reducing your humidity and habitat, but if you prune too much, you're reducing your yields," she said.

Thoroughly harvesting early season fruit will eliminate refuges from which the species can launch new offensives

It may be possible to build up the numbers of these predators by releasing non-pest insects before spotted wing drosophila becomes a problem, she said. "There are a lot of things out there to help us out."

In some cases, farmers are netting their crops after bloom to prevent the insects from infiltrating fruit, while others use special vacuums to collect the flies.

Those options are expensive, though, and may not pencil out financially for all growing systems.

Vacuuming does provide a "real time" sample of what insects are in the field, regardless of whether they're attracted to the bait in a trap, said Gerdeman.

"It does not work with attractivity at all," she said. "It's more of an indiscriminate."

Regularly setting lures and traps to monitor fly populations allows growers to identify "hot spots" in their fields and evaluate how well treatments are working, Dreves said.