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Management of the Spotted Wing Drosophila Using High Tunnels

Project Title: Management of the Spotted Wing Drosophila Using High Tunnels
Coordinator: Erik Gundacker

Location: Rosemount, Minnesota
SARE Grant: \$14,850
Duration: 2014-2015

To read the full project report, go to www.sare.org/projects and search for project number FNC14-948



Spotted wing drosophila larva feed on healthy, intact, ripening strawberries. Eric Gundacker used a combination of high tunnels, insect netting, and organically approved insecticides to control the pest at Scenic Valley Farms in Minnesota. Photo courtesy of SARE Outreach.

Scenic Valley Farms is a family owned farm in Rosemount, Minnesota that uses 15 climate controlled high tunnels to produce organically certified tomatoes, peppers, cucumbers, blackberries, strawberries, herbs, ginger, turmeric, and garlic. They also design and manage high tunnels, computerized climate control systems, and subterranean solar thermal heating systems.

Erik Gundacker helps manage the high tunnels at Scenic Valley and applied for an NCR-SARE Farmer Rancher grant in 2014 to monitor the presence of spotted wing drosophila (SWD). SWD is a small fly that will damage ripe or ripening fruits such as cherries, peaches, plums, raspberries, strawberries, apples, blueberries, and grapes.

In order to prevent SWD population build-up, Gundacker installed insect netting on his high tunnel greenhouses, and placed the same type of netting over field-grown strawberries. Once the SWD were detected, he managed the pest with the application of organically-approved insecticides. He made sure that the pollinators within the tunnels had returned to their beehives, and then he removed the beehives prior to insecticide application.

Gundacker elected to use insect netting manufactured by ProtekNet. The dimensions of each roll of netting was 6.5' X 328', with a mesh size opening of 1.00 mm X .60 mm. He chose this size because it was small enough to prevent SWD from entering but large enough to only restrict approximately 20 percent of natural airflow.

With the netting in place, he placed two traps within each tunnel and two traps outside each tunnel. Traps within the tunnels showed no presence of SWD until late July.

Once he detected SWD inside the tunnels, he picked the ripe berries, removed the beehives, and then sprayed two consecutive nights with Pyganic, followed by a third night with Entrust. Most of the time, this procedure reduced SWD populations to acceptable levels.

Gundacker says this solution prevented sizable numbers of the pest from entering the high tunnels, and the remaining population was much easier to manage due to its low numbers.

“In our opinion, the primary reason we were able to control the SWD outbreak is because of the insect netting,” said Gundacker. “It largely prevented new adults from entering the tunnel while we were attempting to control the population already in the tunnel. Without this protective barrier, we would have been forced to apply insecticide throughout the entire harvest season which would have resulted in much higher labor and material costs and a less healthy crop of berries.”

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