



MSU EXTENSION FRUIT TEAM CONTINUES FIGHT AGAINST SPOTTED WING DROSOPHILA (SWD) IN MICHIGAN FRUIT CROPS

50

workshops with a focus on this pest over the last 10 years.

100%

of growers are now managing for pest in the fight against Spotted Wing Drosophila (SWD) in Michigan Fruit Crops.

PRIORITY

A R E A S

- Michigan has a diverse fruit industry with an economic impact of ~\$440 billion to the state. Fruit production has modernized in recent years, but growers are still challenged by pests that threaten integrated pest management (IPM) strategies. This is highlighted by invasive insects that rapidly disrupt sustainable IPM programs developed over decades.
- Spotted wing drosophila (SWD) continues to be the number one priority for the Michigan cherry, blueberry, and raspberry industries. Survey data from the 2019 SWD Summit showed that 100% of Michigan cherry growers managed for SWD this year (n = 49). The survey also showed that five cherry farms (n = 103) had crop losses/rejected fruit as a result of SWD in 2017 compared to 24 farms in 2019 (n = 49). Losses in 2019 ranged from 5%-90%. Past survey data have shown that SWD has resulted in growers increasing the number of insecticide applications by 2-7 sprays, which has increased costs by an average of \$170 per acre in materials alone. These survey results (and similar findings from blueberry growers) indicate that despite the use of more intensive SWD management and higher costs for controlling this pest, growers still have the risk of SWD-infested fruit at harvest.

IMPACTS

Maintaining the profitability of Michigan fruit production is a constant challenge in the face of increasing invasive pest arrivals. Through daily contact with fruit industry decision-makers and over 20 presentations to more than 500 growers representing the majority of the 60,000 acres of susceptible fruit crops, the MSU Fruit Team has reduced the economic impact of SWD. We are also preparing the industry for future arrivals with a long-view outlook of potential future invasive pests that could disrupt production. These effort helps protect Michigan farms, farmland, and rural communities by maintaining the productivity of Michigan agriculture.



83%

Based management decisions on local/regional SWD trap reports and articles published by MSU Extension



69%

Pruned cherry orchards to open up canopies to minimize SWD pressure



65%

Monitored for SWD adults using traps on-farm

To find out more information or to find an expert near you, contact Dr. Nikki Rothwell, Northwest Michigan Horticultural Research Center, Traverse City; rothwel3@msu.edu

Dr. Rufus Isaacs, Dept. of Entomology, MSU; isaacsr@msu.edu

“ Thank you. \$25,000 in chemical savings this year. ”

• Michigan fruit grower

<https://www.canr.msu.edu/cherries/>
<https://www.canr.msu.edu/blueberries/>
<https://www.canr.msu.edu/grapes/>

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To evaluate the impact of our SWD research and extension programs, we administered a post-program paper survey to participants at the SWD Summit in 2019. There were 49 respondents of the survey that managed or directly impacted a total of 23,128 acres of tart cherries and 8,154 acres of sweet cherries. We found that 100% of respondents improved their knowledge of practices that reduce the risk of SWD infested fruit.

The MSU Fruit Team has been measuring behavioral changes of stakeholders as a result of previous MSU research and Extension programs. Respondents were asked to indicate which IPM practices they, their consultant, or farm manager have used:

60% Mowed cherry orchards with the intent to minimize SWD, not just as a regular maintenance program

56% Consulted MSU researchers and Extension educators to assist with SWD management decisions



Collecting tart cherries in an ongoing effort to determine when SWD infest fruit during the growing season; the goal of this research is to develop a model that can help growers manage risk from SWD.

To find out more information or to find an expert near you, visit www.canr.msu.edu/ipm/invasive_species/spotted_wing_drosophila/index

“ A critical element in controlling this insect is a thorough understanding of the insect’s {SWD} life cycle. MSU has not only provided growers with the tools to manage this pest but also provided us with tools to understand the horticultural component of managing SWD. The latest tool is a degree day model in tart cherry that helps with precise timing for protection measures. Without MSU’s efforts on behalf of growers, the impact of this insect would be monumental. ”

• Michigan tart cherry grower

TESTING NON-CHEMICAL APPROACHES TO GUIDE GROWER DECISIONS

The MSU fruit team has been heavily involved in testing pesticides for SWD control, and this has informed our recommendations to growers. Fields and orchards can also be made less suitable by reducing fruit wastes, avoiding over-ripe fruit, and using pruning and mulching practices to make fields less suitable. We have also emphasized scouting via fruit sampling to determine the risk of fruit infestation from SWD, and a quick method to sample and detect this pest on farms (photo). Fruit team extension specialists have been developing and testing these approaches, and extension educators have taken the information on their performance to fruit growers through workshops, meetings, and their weekly reports.



Blueberry growers improve control and reduce costs.

BLUEBERRY GROWERS IMPROVE CONTROL AND REDUCE COSTS

Meetings and intensive hands-on training workshops to manage SWD under a systems approach. The levels of fruit loss to this pest have been significantly reduced due to greater attention to weather conditions, product selection, and timing. 78% of the growers attending these trainings used the information to improve SWD management.



Sampling of fruit for insect infestation is being promoted to improve decision-making.

“The value of our IPM meetings is great. I hope they can be continued in future years. Thank you for all of the information and updates.”

• Michigan fruit grower