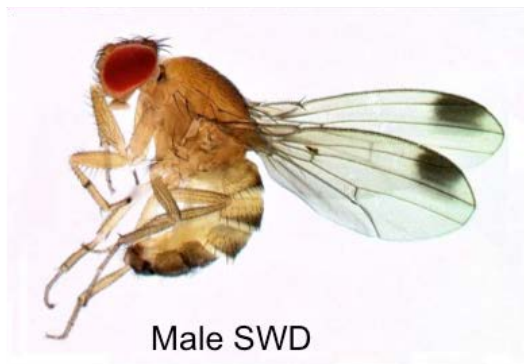




Fruit Production

Spotted Winged Drosophila: A Top Priority for Michigan Fruit Growers

In 2015, the state's \$56.6 million investment in Michigan State University (MSU) AgBioResearch and MSU Extension generated more than \$1 billion for Michigan residents. Every dollar the state invested in MSU AgBioResearch and MSU Extension leveraged an additional \$2.59 in federal funds and external contracts, grants and other revenues. As a result, MSU Extension and MSU AgBioResearch are able to serve Michigan residents with a benefit/cost ratio of 18:1.



Male SWD



Female SWD ovipositor

THE ISSUE

Since the invasive insect pest spotted wing Drosophila (SWD) (*Drosophila suzukii*) arrived in Michigan in 2010, it has been a major concern for Michigan fruit industries. Female SWD have a sharp, serrated ovipositor (pictured above right) that allows her to puncture soft-fleshed fruit and lay eggs inside, resulting in less marketable fruit. In 2012, Michigan berry growers reported multi-million dollar losses to SWD, and in 2015 the tart cherry industry experienced substantial losses due to this pest. The cost of managing SWD in soft-fleshed fruit has also increased. In berry crops, insect management costs increased from \$150 per acre in 2012 to \$372 per acre in 2013. Cherry growers made up to three more insecticide applications in 2015 compared with seasons prior to 2010, resulting in higher management costs. Growers have been adapting their SWD management practices in cherry and berry crops to meet the zero tolerance for pest infestation.

MSU EXTENSION ACTION

SWD has become a top priority for research and extension efforts that support Michigan's fruit industries. MSU Extension fruit researchers and educators have received funds from multiple industry, state and federal grants to conduct critical SWD management research annually. MSU Extension fruit researchers and educators have also supported a statewide monitoring effort and published weekly reports to alert growers of SWD presence in specific fruit growing regions during the growing season. This monitoring effort has guided growers in making educated management decisions for SWD control. Additionally, a central website for SWD information (ipm.msu.edu/SWD.htm) has been established to house a comprehensive record of SWD-related information produced by MSU Extension.



“I came to the IPM meetings and learned about SWD. My neighbor didn't and he had infested fruit. Thank you for saving my crop.”

- Grower participant of IPM Update meeting in Northwest Michigan

THE IMPACT

- In 2015, statewide surveys were sent to industry stakeholders to assess the impact of SWD extension efforts. Surveys indicated that:
 - 73 percent increased their management costs due to SWD.
 - 92 percent used the weekly MSU Extension SWD trapping report to help make management decisions.
 - 76 percent altered their insecticide program based on monitoring information from their region.
 - 69 percent changed their management practices when trap catches increased in their region.
 - The majority of growers had no crop losses to SWD.
- › These survey results indicate that timely, cost-effective and reliable management of SWD is of high importance to Michigan fruit growers. Continued MSU Extension SWD programming is critical to assist growers with SWD management decisions that results in high quality and marketable fruit.
- MSU Extension SWD programs reduced the number of insecticide applications made in blueberries in 2015 by one spray compared with 2014. Pest management costs also decreased to \$215 per acre, \$44 less per acre spent in 2014 and \$157 less than in 2013.
- Fruit IPM update programs reached over 800 Michigan fruit producers who look to MSU Extension for production recommendations during the growing season. A total of 76 meetings were held across the state in 2015: 32 Northwest Michigan Tree Fruit IPM Updates, five Northwest First Friday Grape Grower Meetings, 11 Southwest Michigan Fruit IPM Meetings, 23 Fruit Ridge Tree Fruit meetings, and seven Blueberry IPM Meetings. As a result of these IPM meetings:
 - 89 percent of producers scouted on farms for pests/diseases to make management decisions.
 - 65 percent of producers referred to MSU Enviro-weather pest and disease models to determine the need for pesticide application.
 - 80 percent of producers relied on MSU's SWD trapping program to guide their management decisions.
 - 44 farms adopted SWD integrated pest management (IPM) practices and 22 additional farms adopted recommended management practices after receiving SWD education.
- MSU Extension fruit researchers and educators have hosted annual SWD Summits to address the cherry industry priorities for SWD research and extension. In 2015, 124 attendees participated in an educational program and needs assessment, and stated the meeting was effective and informative.
- A two-day Spanish and English language SWD training workshop hosted 44 participants to help reach diverse audiences.

- Several programs were made available online through a web conference system.
- SWD publications were made available through regional and statewide outlets, including email newsletters and MSU Extension News.
- The SWD website (ipm.msu.edu/SWD.htm) provides instant, 24/7 access to SWD information.



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