

Timely Viticulture

- Dormant
- Pre-Bloom
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- Pre-Harvest
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"Timely Vit" is designed to give those in the Maryland grape industry a timely reminder on procedures or topics they should be considering in the vineyard.

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The Spotted Wing Drosophila (SWD) Part 2—Management

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The **Spotted Wing Drosophila (SWD)** is a small vinegar fly with the potential to damage many fruit crops, particularly thin-skinned fruit. SWD was first detected in the western United States in 2008 and has already become a major pest of many fruit and berry crops in Maryland, with potential to cause significant damage to grapes. For Background, History, Life Cycle, Symptoms and Damage, please see the Timely Viticulture: The Spotted Wing Drosophila (SWD) - Part 1: Background and History: <http://extension.umd.edu/learn/spotted-wing-drosophila-swd-part-1-history-background-and-damage>

Management

For managing a pest like SWD, monitoring, identification, and utilization of multiple, integrated control tactics are important.

Monitoring

Various commercial and homemade trap designs and lures are available for monitoring adult SWD. At this time, monitoring adults is logistically difficult and captures may not correspond with fruit damage. Therefore, it is best to monitor SWD larvae by sampling fruit. The more fruit that is sampled, the more confident you can be in your results. A 30-40 berry sample collected from multiple clusters at many positions within the vineyard (including borders) is recommended. Selectively choose fruit that does not appear rotten or damaged, because other vinegar flies can be found in overripe and damaged fruit. Fruit can be visually inspected for larvae, held to allow insects to emerge, or larvae can be floated out of the fruit. More information about larval monitoring can be found in the UME document: <https://extension.umd.edu/sites/default/files/docs/VegetableFruitHeadlines6-3.pdf>

Control

There are some important cultural controls that growers can adopt to minimize the buildup of populations.

- Highest risk varieties are those that are harvested later and varieties with thinner skins.

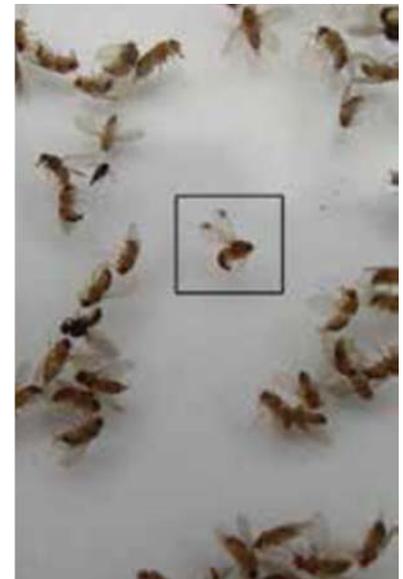


Figure 1. Identifying SWD among non-SWD fruit flies (photo by K. Demchak).

The Spotted Wing Drosophila (SWD) continued from page 1

Part 2—Management

Pre-Harvest

- Remove damaged, overripe, or rotten fruit when present
- More information about controls can be found in the UME document: https://extension.umd.edu/sites/default/files/docs/Vegetable%26%20Fruit%20Headlines%20Special%20Alert%20%232%20July%2010%2C%202015%20Myers_0.pdf

Chemical control measures are directed against the adults; there are no effective controls for larvae in the fruit.

- If significant **economic** damage is being observed, weekly spray applications may be needed. A few damaged grapes does not warrant a field spray!
- When using organic materials, shorter spray intervals will be needed because of the shorter residual life of botanical insecticides.
- As always, insecticides* with different mode of actions should be rotated in order to delay the development of insecticide resistance. Selection of insecticides for SWD control should take into account other pests present, harvest date, re-entry restrictions, as well as the potential impacts on existing IPM programs, beneficial insects, and the environment.
- The following are effective:
 - Carbamates (IRAC Class 1A= carbaryl, Sevin)
 - Organophosphates (IRAC Class 1B = malathion; phosmet; Imidan)
 - Pyrethroids (IRAC Class 3 = Brigade; Baythroid; Danitol; Mustang Max; Tombstone; (be wary of induction of secondary pests))
 - Spinosyns (IRAC Class 5 = Delegate; Radiant)
 - For details please see Virginia Tech Pest Management: http://pubs.ext.vt.edu/456/456-017/Section-3_Grapes-1.pdf
- Organic (OMRI approved) options:
 - Pyrethrins (IRAC Class 3 = PyGanic (be wary of induction of secondary pests))
 - Spinosyns (IRAC Class 5 = Entrust)
 - Grandevo 30 (Chromobacterium IRAC Class unknown)
 - Surround 95WP3 (kaolin; IRAC Class unknown) has shown efficacy, especially on red grapes, and may be a good choice as a first response or in a low pressure situation. Surround may impact harvest parameters.

***Remember to follow the label restrictions and rotate chemical classes to avoid resistance development. If this pest is present, the level of control will depend on the size of the SWD population, timeliness of application, coverage of fruit, and product effectiveness.**

References

- Demchak, K, Biddinger, D., and A. Surcică. 2013. Spotted Wing Drosophila - Part 1: Overview and Identification. Penn State Extension.
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- Isaacs, R. and N. Hahn. 2010. Spotted Wing Drosophila - A new invasive pest of Michigan fruit crops. MSU Extension Bulletin E-3140.

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Figure 2. SWD on grape (photo by Doug Pfeiffer)