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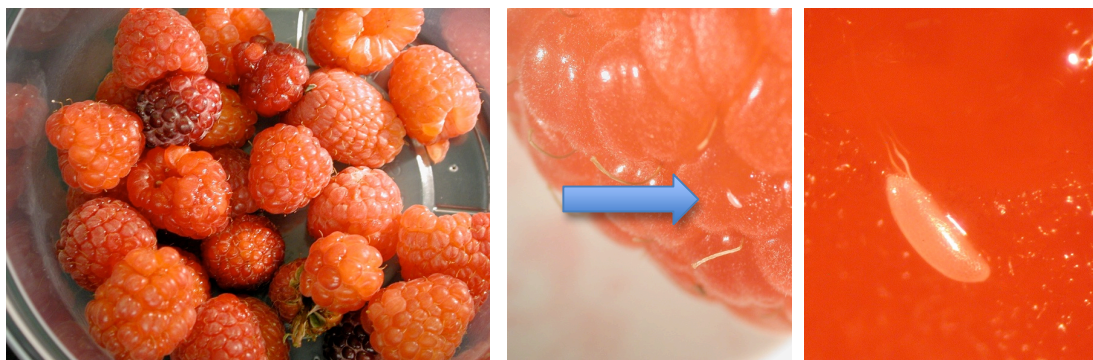
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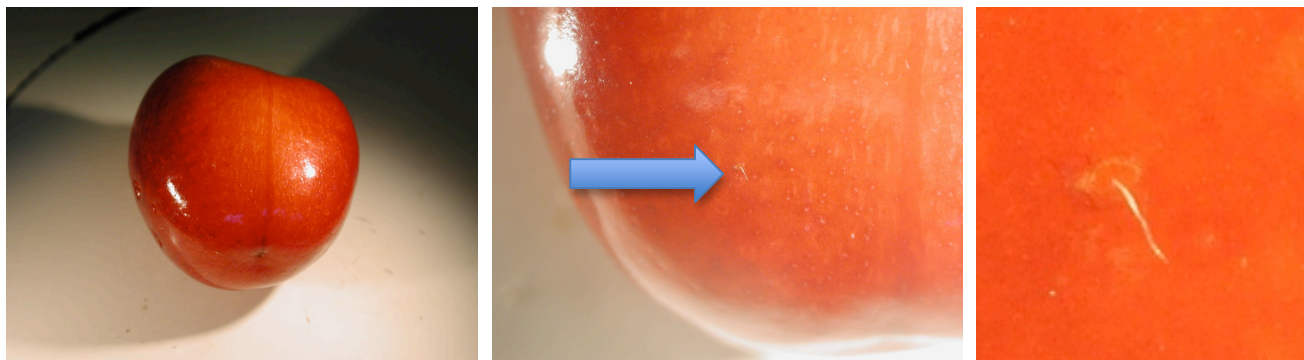
● Agricultural Research and Extension on Tree Fruits, Grape and Vegetables ●

Pest Alert: July 5, 2013

Spotted Wing Drosophila Adults Causing Injury To Raspberry And Cherry In Lower And Mid-Hudson Valley Of NYS.



'Perlunde' variety of raspberry with 8% *Drosophila* ovipositional injury (Treated), southern Hudson Valley.



Sweet cherry with 70% *Drosophila* ovipositional injury (Untreated), southern Hudson Valley.

The spotted wing drosophila (SWD), *Drosophila suzukii*, was first observed in NY in 2011 beginning in late August. The following year it was first captured in mid-July in 2012 and in 2013 it was found in the Northeast considerably earlier, on the 10th of June along a wooded edge in western Mass. It was then captured in apple cider vinegar (ACV) traps baited with a yeast solution in WNY on 11th of June (Loeb), in the southern and mid-Hudson Valley on the 17th (Urlich) and 21st of June (O'Connell) respectively. On the 3rd of July, adults SWD were observed in traps placed along the border and interior of a small fruit patch in southern Orange County of the raspberry variety 'Prelude', in which we also found 2 of 25 fruit which we sampled infested with eggs. The brambles had been on a two-week SWD preventative program with applications made twice-weekly. Yet on the same farm in a nearby block of

untreated sweet cherry, 14 of 20 or 70% fruit sampled were infested with a total of 44 eggs. *Drosophila* larva has not yet been observed in fruit, indicating the relatively early stage of infestation we are in early ripening cherry and raspberry. In 2012, very low population levels of SWD led to very high levels of fruit injury, which lead us to now recommend to growers with SWD in the region to begin pest management programs for this insect. As we are not completely certain that SWD is the causal agent we will continue observe fruit to access the adult emergence for species confirmation. Yet the find of eggs in pre-harvested and sound fruit is a strong indication of the kind of damage SWD is capable of.

We are advising that agricultural producers of stone and small fruit should pay strict attention to cherries, brambles and blueberries, monitoring fruit closely during the early stages of color and ripening while monitoring traps daily for the presence of this pest. As these commodities enter the 7-day pre-ripening period they are at greatest risk. Low levels of fly presence in traps may signify relatively high levels of fruit infestation potential in these commodities.

Background: The adult, larva and egg forms resemble the common vinegar fly, *Drosophila melanogaster*, and other fruit flies species that affect rotting or fermenting fruit. The spotted wing drosophila, however, readily attacks undamaged fruit at the onset of color change. If SWD flies have been observed in traps, the fruit will then need to be protected during the early stages of ripening through to harvest to control the adult female fly prior to egg laying and larva as these commodities are at greatest risk emergence. Once the maggot emerges from the egg it moves into the fruit and is well protected.

Potential for Economic Impact: The potential for significant impact from this pest, especially for mid-summer and later-maturing small fruit, is very likely as populations increase. We have observed marketed fruit unknowingly contaminated with SWD larvae resulting in consumer complaints. In regions where SWD is present, growers have resorted to frequent pesticide applications thereby increasing economic and environmental costs as well as potentially disrupting established IPM programs.

Monitoring: To sample for the SWD, a simple homemade trap can be constructed using a clear



pint deli container with (16) 3/8" holes drilled along the top edge of the container to which is added 3-4 ounces of wine or cider vinegar and a one to a few drops of liquid dish soap, changed weekly, and hung with 'coat hanger' gauge wire bent into a 'U' at both ends for hanging. Yellow sticky cards can be added but draining the adult flies onto a fine mesh screen also works quite well. The key to identifying this insect is found below. The spotted wing of the male and the large dark amber toothed ovipositor of the female are the primary determinants for identification. A 30X magnifier will be needed to see the ovipositor. Samples can be sent

to my attention the address above for verification.

Management: Tables of NYS labeled insecticide options including efficacy rating are below. Review carefully the label especially with regards to restrictions such as pre-harvest intervals, number of days between applications, total applications per season and other limitations including intervals between applications for resistance management purposes. Have the labels, including the 2(ee) in hand for each application.

In cherry, brambles and blueberry we are recommending applications of effective insecticides at first adult capture or first egg, continuing at 3-4 day schedules with trap presence of adult fly in these commodities.

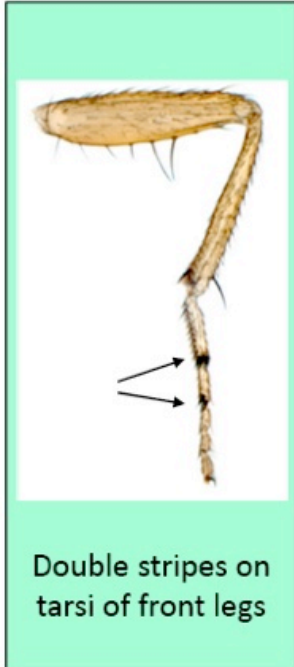
Organic: Entrust SC has received a NYS label for use in organic production with a 2(ee) registration for SWD. Experience so far in California and Oregon indicate that the insecticide formulation of Entrust 80WP is the most effective option for SWD control in organic production. Rotating Entrust with the organic pyrethrum insecticide Pyganic is recommended in Michigan to achieve some resistance management of the pyrethrum. We have not found pyrethrum products to effectively control the adult SWD or reduce oviposition in laboratory studies.

Harvested fruit should be held in cold storage (34°F for 48-72 hours) to reduce egg hatch and larval survival. Preliminary studies have shown harvested fruit emersion in 1% vegetable oil (Amigo, Loveland Products) for >5 minutes significantly reduces hatch and survival of SWD in fruit. Cultural control of the insect by removing infested fruit from the patch and freezing or deep burying will help reduce infestation levels.

Male Spotted Wing Drosophila (SWD)

UC Berkeley & UC Cooperative Extension

Photos: M. Hauser, CDFA



Female Drosophila species

UC Berkeley & UC Cooperative Extension Photos: M. Hauser, CDFA

Spotted Wing Drosophila (*D. suzukii*)



SWD has a large, saw-like, serrated ovipositor with two even rows of teeth that are much darker than rest of ovipositor

Other *Drosophila* spp.

have smaller, more rounded ovipositors, sometimes with irregular, poorly defined teeth

