

UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION:
EL DORADO AND AMADOR COUNTIES
FOOTHILL FARM AND ORCHARD NEWS



Produced by your UC Cooperative Extension Farm Advisor,
Lynn Wunderlich

SPOTTED WING DROSOPHILA UPDATE FOR 2011

June, 2011



Male SWD

Dear Foothill Growers, As most of you know, Spotted Wing Drosophila (*Drosophila suzukii*) was found infesting cherries in El Dorado County last season, resulting in fruit damage to most cherry blocks. In preparation for the upcoming cherry season, attached are the revised recommendations for treating cherries from our UC Berkeley specialist, Dr. Bob VanSteenwyk. All cherry growers should expect to treat for SWD, beginning at “straw” fruit color. Materials should be rotated to prevent SWD from developing resistance. See the attached chart in Bob’s paper with insecticide efficacy ratings. Be sure to consider the pre-harvest interval (PHI) when choosing materials.

Please note: the attached recommendations are for CHERRIES, registration and efficacy for other crops should be checked (although I am not recommending treatment for other crops at this time).

As for trapping, my work last season showed that apple cider vinegar, the recommended formula for trapping SWD, was not as effective as water, sugar and baker’s yeast at catching SWD in our region. I have just set SWD traps in several blocks this season, to look at this again. Although trapping is recommended in Bob’s guidelines, at this point, I think it is more of an academic study. We know we will trap SWD if we set out traps for them; however, we don’t really have a clear idea of what trap numbers mean from a practical point of view. If you want to trap and need help identifying SWD, let me know.

I found SWD in all of the blocks that were trapped (plums, cane berries, blueberries, nectarines, and cherries); however, we did not see any damage in any other susceptible crop besides cherries. Therefore, I am recommending that growers of other susceptible crops, particularly cane berries, strawberries, and blueberries, keep a close eye on fruit for damage but to hold off on treating until we have reports of damage in our region. Please let me know if you find or suspect SWD fruit damage.

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Resources for more information:

UCIPM website for exotic pests (scroll down to Spotted Wing Drosophila):
<http://www.ipm.ucdavis.edu/EXOTIC/exoticpestsmenu.html>

Spotted Wing *Drosophila* Recommendations for Sweet Cherry

1/3/11

These recommendations are derived from translated Japanese research articles on spotted wing *Drosophila* (SWD) and research conducted in 2010 in California and Oregon. These recommendations are expected to change over time as new information becomes available.

Monitoring: Place a 1 qt. plastic container with 15 to 20 3/16-inch diameter holes on the side. The traps should be baited with 1 inch (4 oz) of unflavored apple cider vinegar (ACV) with about 0.15 oz (1 tbs.) of unscented detergent per gal of ACV. An alternative to the 3/16-inch diameter holes drilled into the side is to cover the top of the traps with 1/8-inch square screening. This will capture more flies than traps with 3/16-inch holes but the traps are subject to flooding if it rains. A rain shield will need to be added to the trap to prevent flooding. The 1/8-inch square screening or 3/16-inch holes will limit the number of large moths, flies and bees captured in the traps. Replace the ACV weekly (remove spent bait from the orchard – do not dump the spent bait on the ground in the orchard). Place the trap about 3 - 5 ft. off the orchard floor in the shade. Traps placed in the direct sun will capture less SWD and placement in the shady part of the canopy is highly recommended.

Monitor twice weekly from first color change from light green to straw until completion of harvest. Once treatment regimes has commenced monitor traps weekly. Count all SWD flies both males and females. The males have a spots on the tip of the wings and females have very large ovipositors with two uniform rows of large spines (see photos). A handle lens or microscope will be needed to identify the females. Do not rely solely on males since it was found last spring that the sex ratio in some orchards largely favored females. If any SWD are found in the traps, then take control action immediately (see insecticide control below).

Fruit Susceptibility: There are differences among cherry varieties and stages of maturity to SWD oviposition and development. In choice studies, Early Burlat was more susceptible than Black Tartarian, which was more susceptible than Bing. In no choice studies, SWD was able to oviposit in green Bing and Early Burlat fruit but few or no larvae were produced. The preferred ovipositional color of Bing fruit was dark red color and for Black Tartarian and Early Burlat fruit was red color. SWD was able to oviposit and develop in straw/pink colored fruit in all three varieties.

Cultural Control: If insecticide treatments are not an option and if fruit from pollinizer varieties matures earlier than the main variety, then pick and remove pollinizer fruit before the main variety fruit is pink in color. This will prevent the SWD from emerging from the pollinizer fruit during the main variety harvest. An alternative is to treatment pollinizer trees with an insecticide to suppress SWD on pollinizer fruit.

Chemical Control: Last season we were conservative in our treatment recommendations due to the lack of knowledge and the damage growers experienced the prior year. This season begin applications when the earliest maturing variety in the orchard is straw/pink color. It appears that early season treatment, when fruit is green in color, has little or no impact of SWD fruit infestation. The fruit remains susceptible through harvest and repeat applications at 7 to 14 day intervals until harvest with one of the materials listed below. The interval between applications will depend on the material selected. From studies conducted last season, it appears that 2 or 3

applications are required to control the pest and that spinosyn, organophosphate, pyrethroid and some neonicotinoid insecticides provide effective control for one to possibly two weeks. Also the inclusion of NuLure with the insecticide produced inconsistent results. Observe all pre-harvest intervals (PHI) and re-entry interval (REI) periods and rotate between materials of different chemical classes between applications to slow the development of resistance. Check with your packer/shipper for maximum residue levels (MRL) requirement for shipment of fruit out of the country.

**Male Spotted Wing Drosophila
showing distinctive spots on
wings**



**Female Spotted Wing Drosophila
showing distinctive spines on
ovipositor**



Trade Name	Common Name	Chemical Class ^a	PHI	REI	Rating ^b
GF-120 ^c	Spinosad	SPIN	0 days	0 hr	5
PyGanic	Pyrethrins	BO	0 days	12 hr	5
Sevin	Carbaryl	CAR	1 day	12 hr	4
Malathion	Malathion	OP	3 days	12 hr	1-
Danitol ^d	Fenpropathin	PYR	3 days	24 hr	1-
Ambush/ Pounce	Permethrin	PYR	3 days	12 hr	2-
Renounce/ Tombstone	Cyfluthrin	PYR	7 days	12 hr	5
Baythroid	Beta-Cyfluthrin	PYR	7 days	12 hr	2
Assail	Acetamiprid	NEONIC	7 days	12 hr	3+
Provado	Imidacloprid	NEONIC	7 days	12 hr	2-
Entrust/ Success	Spinosad	SPIN	7 days	4 hr	2+
Delegate ^e	Spinetoram	SPIN	7 days	4 hr	2
Actara	Thiomethoxam	NEONIC	14 days	12 hr	4
Mustang	Zeta-Cypermethrin	PYR	14 days	12 hr	2
Asana	Esfenvalerate	PYR	14 days	12 hr	5
Warrior II	Lambda-Cyhalothrin	PYR	14 Days	12 hr	1
Diazinon ^f	Diazinon	OP	21 Days	4 Days	1-

^a The chemical classes are: SPIN is spinosyns, BO = botanical, CAR is carbamate, OP is organophosphates, PYR is pyrethroids, NEONIC is neonicotinoids.

^b The rating scale is: 1= control for 7 to 14 days, 2 = control for 3 to 7 days, 3 = control for 1 to 3 days, 4 = control for only 1 day or less and 5 = not evaluated.

^c GF-120 is slow acting and does not have knock-down activity but as been reported to suppress populations over time.

^d There is no MRL established for Danitol in Taiwan at this time. Please consult your packer/shipper for export implications.

^e There is no MRL established for Delegate in Asia and Australia. Please consult your packer/shipper for export implications.

^f Diazinon requires a closed cab.