

# Spotted Wing Drosophila (SWD) Recommendations for Sweet Cherry

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**Monitoring:** A new trap design called the “Side Wire” trap is recommended over the “Top Wire” trap. The Side Wire trap consists of a 1 qt. plastic container with 2 1/2 inch by 5 inch, 1/8 inch square hardware screen attached on the side of the trap. The hardware screen is attached with hot melt glue at about 2.5 inch up from the bottom of the trap. The trap top is sealed and there is no need for a rain shield. The advantages of the Side Wire trap as compared to the Top wire trap are increased catch and the traps do not need a rain shield. The traps should be baited with about 4 oz of apple cider vinegar (ACV). Do not use apple cider flavored distilled vinegar. Add about 1 tsp. of colorless and unscented dish soap (Palmolive brand “Pure+Clear” concentrated liquid dish soap) per gal of ACV to reduce surface tension. 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 part of the tree canopy. Traps placed in direct sun will capture fewer SWD.

Monitor traps weekly, beginning when the fruit of the earliest variety in the orchard starts to change color from light green to straw. Continue monitoring until harvest is completed for the latest variety in the orchard. Count and record the number of male and female SWD flies in each trap. Male SWD have spots on the tip of the wings and females have very large ovipositors with two uniform rows of large spines (see photos). A hand lens or microscope is needed to distinguish female SWD from non-pest Drosophila species and other small insects attracted to traps. Do not rely solely on males to evaluate SWD populations since relative abundance of males and females can vary among orchards over the course of the season. If any SWD are found in the traps, take control action immediately (see insecticide control below).

**Fruit Susceptibility:** There are differences among cherry varieties and stages of maturity in relation 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 was dark red for Bing fruit and red for Black Tartarian and Early Burlat. 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, pick and remove all 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.

**Chemical Control:** When planning an insecticide control program, check with your packer/shipper to ensure your plans take into account the maximum residue level (MRL) requirements of countries to which your fruit may be shipped.

Experimental studies and field experience conducted to date suggest that early season treatment, when fruit is green in color, has little or no impact on SWD fruit damage at harvest. In addition post-harvest insecticide applications have little or no impact on SWD populations the following season. Insecticide treatments should be initiated when the earliest maturing fruit in the orchard turn from yellow to light pink. Fruit remains susceptible through harvest and repeat applications are required at 7 to 14 day intervals until harvest with one of the materials listed in table 1. The interval between applications will depend on the material selected. Studies conducted during the 2011 and 2012 seasons suggest that 2 or 3 applications are required to control the pest. Organophosphate, pyrethroid and spinosyn insecticides provided effective control up to two weeks after application. Research indicates that the organophosphate insecticides (Diazinon and Malathion) have good adult knockdown potential but provided little control 7 days after treatment (DAT). The pyrethroid insecticides (particularly Warrior or Lambda-Cy and

Baythroid) provided moderate knockdown but provide some measure of control at 14 DAT. The spinosyn insecticides (Delegate, Success, Entrust) provided moderate to good knockdown and moderate control 7 DAT. Surprisingly, Sevin, which is a carbamate insecticide also provided good knockdown control in 2011 trials. The pyrethroid insecticides provided the best control after one week, followed by the spinosyn insecticides. Sevin provided about the same degree of control as the spinosyn insecticides. Also, the pyrethroid insecticides provided control at 14 days. 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 pesticide resistance.

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



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

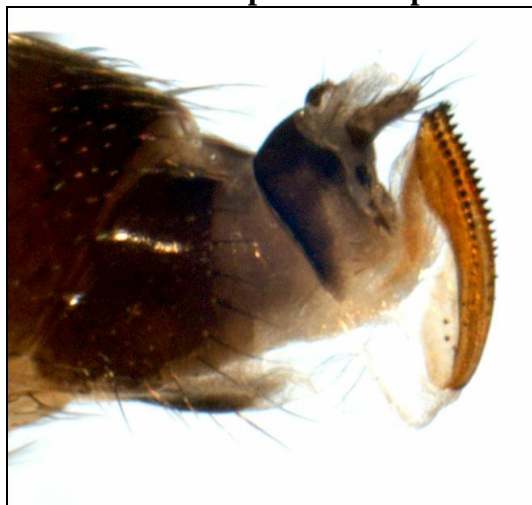


Table 1. Efficacy in Chemical Control of SWD

Trade Name	Common Chemical Name	Class <sup>a</sup>	PHI	REI	Rating <sup>b</sup>	
					1 DAT <sup>c</sup>	7 DAT
Sevin	Carbaryl	CAR	1 day	12 hr	2	3
Entrust	Spinosad	SPIN	3 days	4 hr	2	3
Malathion	Malathion	OP	3 days	12 hr	1	5
Danitol	Fenpropathin	PYR	3 days	24 hr	2	1
Ambush/Pounce	Permethrin	PYR	3 days	12 hr	3	3
Baythroid	Beta-cyfluthrin	PYR	7 days	12 hr	2	1
Assail	Acetamiprid	NEONIC	7 days	12 hr	5	5
Provado	Imidacloprid	NEONIC	7 days	12 hr	5	5
Success	Spinosad	SPIN	7 days	4 hr	2	3
Delegate	Spinetoram	SPIN	7 days	4 hr	2	2
Actara	Thiomethoxam	NEONIC	14 days	12 hr	4	5
Mustang	Zeta-cypermethrin	PYR	14 days	12 hr	3	2
Warrior/ Lambda-Cy	Lambda-cyhalothrin	PYR	14 Days	12 hr	3	1
Diazinon	Diazinon	OP	21 Days	4 Days	1	4

<sup>a</sup> The chemical classes are:

CAR is carbamates, NEONIC is neonicotinoids, OP is organophosphates, PYR is pyrethroids, SPIN is spinosyns

<sup>b</sup> The rating scale is relative with:

1 = excellent control, 2 = good control, 3 = adequate control, 4 = poor control, 5 = no control

<sup>c</sup> DAT = Days after treatment