

Spotted Wing Drosophila control on Sweet Cherry Recommendations for Eastern Washington for 2014 April 2014

Note: Recommendations for Spotted Wing Drosophila (SWD) for 2014 are essentially the same as in previous years in terms of what and when to spray. We have preliminary information on how long we can expect materials to last, and further tests are ongoing. Also note that label changes may occur for one or more of the spinosad materials (Entrust, Success). The Entrust main label allows a 7 day PHI; the 24(c) label for Entrust allows a 3 day PHI with many complex restrictions.

While the Walsh and Beers programs continue to check their ‘core’ trap samples, the participatory trapping program ended at the end of 2013. Our experience in previous seasons indicates that low trap numbers in a region may not accurately indicate the first fly activity in the region. The number of traps/region is now in the table on the SWD website <http://www.tfrec.wsu.edu/pages/swd>. Also note that we captured a number of flies during the winter. These do not “count” as first activity in a region, as they did not occur during the growing season. When available, the first capture of the growing season is listed beside it.

The 2013 season recorded the highest trap captures in the four years traps have been deployed in eastern Washington. This may reflect broader establishment of SWD in our region, the use of slightly more effective traps, or higher pressure due higher overwintering survival.

New lures are available from Trécé and Scentry that are based on the Cha-Landolt lure. 2013 tests with the Trécé lure indicate that it is more effective than apple cider vinegar, and appears to capture flies earlier than traps baited with ACV. This is important if you are using the trap to indicate when it is time to begin spraying for SWD (a concept that has not been adequately tested on an orchard-by-orchard basis). Tests with both lures will continue in 2014.

Conventional Cherries: Recommendations are based field and laboratory data from Washington, Oregon, and California. We still lack true pesticide efficacy data in Washington; all of our results have been using laboratory-reared flies exposed to field-applied residues. However, we have several years of tests that fruit become susceptible to SWD at about the same time as it does to cherry fruit fly; the only question is if SWD is active at that time.

SWD control can be integrated into the cherry fruit fly (CFF) control program, in terms of timing of sprays and period of coverage. CFF programs normally begin at straw color, and continue every 7-10 days through harvest. You can start the season with your normal CFF sprays until the first SWD is found in your area (and cherries have reached blush/pink), then alter your choice of pesticide to make sure SWD is controlled. If there are few or no traps in your area, the conservative approach is begin SWD control at straw, the same as CFF.

Materials that control SWD will control CFF, but the reverse is NOT true – in particular, **do NOT rely on GF-120 alone for SWD control**. Recent tests show this material has some effect, but does not provide commercial control. The neonicotinoids have some systemic effect on SWD in the fruit, but do prevent adults from ovipositing. For now, do NOT count on neonicotinoids for SWD control. However, there may be some benefit to adding a material such as imidacloprid (Provado, Pasada) to

SWD protective sprays, especially if the interval between sprays has been lengthened (because of weather or other application problems). The addition of imidacloprid may kill any eggs or larvae that slipped through the protective sprays (see MRL Issues below).

Once SWD spray protection has begun, continue spraying every **7-10 days** until harvest (observing the minimum re-treatment interval and preharvest interval (PHI) for the material you are using; see Table below). Until we have more information on pesticide efficacy, use the full label rates. As always, the materials sprayed close to harvest must be chosen on the basis of their PHI (see MRL Issues below). The choice of protective sprays during this period include:

- organophosphates (such as diazinon, or malathion ULV)
- spinosyns (Success, Entrust, or Delegate)
- pyrethroids (Warrior II)

Field-aged residue tests with Sevin indicate that it is also effective against adults, with slightly longer residual than Fyfanon.

While resistance management was not the highest priority for SWD control in previous years, we need to start factoring this into our programs. Consider rotation of materials among these different classes to the extent possible. See the table below for PHIs, REIs, and the maximum number of applications/season.

If harvest in a given block extends over a long period (e.g., 10 days), you may need to reapply a protective spray during the harvest period. Malathion ULV is likely the only candidate material for this. If GF-120 is applied during harvest, it will provide protection against CFF, but may not provide sufficient protection against SWD.

MRL Issues. Pesticide residues are a significant concern in cherries for export. MRLs can and do vary by country of export for each pesticide. Work with your packinghouse to choose a SWD spray program most compatible with the fruit's destination. The cherry MRL table on the Northwest Horticultural Council's website may also be helpful:

<http://www.nwhort.org/CherryMRLs.html>. See also the USDA/FAS website: www.mrldatabase.com.

Post-harvest Sprays. Tests in 2010 indicated that both dimethoate and Provado kill eggs and/or larvae in fruit on the tree; dimethoate was the stronger of the two materials. If you normally apply a post-harvest clean-up spray for cherry fruit fly with either of these insecticides, you can expect an additional benefit to SWD control. It is doubtful if post-harvest sprays will provide a long-term clean-up for SWD that will carry over to the following year; there are too many other hosts. However, an argument can be made for a post-harvest spray if a significant amount of fruit is left in the orchard, and there are vulnerable unharvested crops nearby (other stone fruits, blueberries, or caneberries). The concept of sanitation (whether through pesticides or physical means) has not yet been demonstrated to be of value in commercial production, although research is ongoing.

Organic Cherries. SWD control in organic cherries may be challenging. Entrust is one of the few effective materials that is registered for use in organic orchards; PyGanic may provide some knock

down, but residual is likely non-existent. Note that the Entrust label specifies that you may not make more than 2 consecutive applications of Group 5 insecticides (spinosad and spinetoram) without rotation to "an effective product in a different group" for at least 2 applications. The treatment schedule for this material is quite complicated; see the Entrust SC 24(c) label.

Organic growers should consider continuing a GF-120 program even though Entrust and PyGanic are used as the primary controls for SWD. SWD adults that feed on the bait are killed; it is likely more a question of rate: the numbers of droplets/acre versus the number of flies per acre determine the likelihood of flies encountering bait. Unlike cherry fruit fly, SWD does not have a significant preoviposition period, thus damage could happen before they can find and feed on the bait.

Cherry Pesticides for Spotted Wing Drosophila - 2014

Trade Name	AI	Chemical Class	REI	PHI	max per app	max/acre/yr	retreatment interval	Notes
Success 2F	spinosad	spinosyn	4 h	7 d	8 fl oz	29 fl oz	See Notes	There is a limit of 4 applications on the total number of Group 5 insecticides (Entrust, Success, Delegate).
Entrust 2SC	spinosad	spinosyn	4	7 d	8 fl oz	29 fl oz (0.45 lb ai)	7 d	Note Resistance Management restrictions for Group 5 insecticides.
Entrust 2SC 24(c) SLN WA-120008 Expires 31 December 2017	spinosad	spinosyn	4	3 d (with many restrictions)	6.4 fl oz	25.6 fl oz	7 d	*See 24(c) label. Three or four applications may be allowed depending on the treatment schedule and rotation sequence. There is a limit of 4 applications on the total number of Group 5 insecticides (Entrust, Success, Delegate).
Delegate 25WG	spinetoram	spinosyn	4 h	7 d	7 oz	28 oz/4 apps	3-7 d (thrips/other)	There is a limit of 4 applications on the total number of Group 5 insecticides (Entrust, Success, Delegate).
Malathion ULV 9.79EC	malathion	organophosphate	12 h	1 d	16 fl oz			
Diazinon 50W	diazinon	organophosphate	4 d	21 d	4 lb			Maximum of 2 applications/year, one in the dormant period, one as in-season foliar. A closed cab is required on cherries.
Dimethoate 2.67EC (postharvest)	dimethoate	organophosphate	14 d*	NA	4 pt	4 pt	NA	*14 d REI if average annual rainfall <25 inches/year, otherwise REI is 10 days. Make a single application a minimum of 7 days after final harvest (or if "no harvest" decision is made).
Provado 1.6F	imidacloprid	neonicotinoid	12 h	7 d	8 fl oz	40 fl oz	10 d	Do not apply pre-bloom to bloom, or when bees are actively foraging
Danitol 2.4EC	fenpropathrin	pyrethroid	24 h	3 d	21.33 fl oz	42.66 fl oz	10 d	Poor choice if cherries are destined for export. See MRL information on Northwest Hort Council website.
Warrior II 2.08CS	lambda-cyhalothrin	pyrethroid	24 h	14 d	2.56 fl oz	See Notes	5 d	12.8 fl oz/10.24 post bloom

Organic Materials

Trade Name	AI	Chemical Class	REI	PHI	max per app	max/acre/yr	retreatment interval	Other restrictions
Entrust 2SC	spinosad	spinosyn	4 h	3 or 7 d*	6.4 fl oz	25.6	7 d	A 3-day PHI is allowed under the 24(c) label, however, with many restrictions. The main label has a 7-day PHI.
Pyganic 1.4E	pyrethrins	botanical	12 h	0 days	2 qt			
GF-120	spinosad bait	spinosyn	4 h	0 days	20 fl oz		7-14 days	Do NOT use a stand-alone product for SWD. maximum of 0.45 lb ai/acre/season for all spinosad products

For information on MRLs, visit <http://www.nwhort.org/CherryMRLs.html>