

Spotted Wing Drosophila (SWD) Management in BC Berry Crops *(Blueberries, Raspberries, Strawberries, Blackberries)*

These recommendations are based on the knowledge available at time of writing. As more is learned about this pest, recommendations may change and will be posted at:

[Spotted Wing Drosophila Management in BC Berry Crops](#),

www.al.gov.bc.ca/cropprot/swd_management.pdf

Monitoring for adult SWD is underway in all berry growing regions of the Lower Mainland and Fraser Valley. The results of this monitoring will help determine when a protective spray program should begin.

Weekly trapping results will be posted at various websites including:

[Monitoring Reports for Coastal B.C.](#) and [Berries Northwest](#),

www.al.gov.bc.ca/cropprot/swd_trapresults.pdf and www.berriesnw.com/

Biological Control

To date, there are no known biological controls for SWD. Research is underway to identify potential predators and/or parasites.

Cultural Control

Consider implementing the following cultural control practices:

1. **Hedgerow management:** Non-riparian removal of fruiting alternate hosts such as blackberry from areas near crop fields may help to reduce feeding and breeding sites for SWD. Alternate hosts could be controlled by cutting plants down enough to prevent fruiting.

Note: Vegetation management in riparian areas (areas containing water) is regulated by the federal Department of Fisheries and Oceans (DFO). Please contact the DFO if you have any questions about this.

2. **Sanitation:** Where practical, remove, deep bury, or otherwise destroy cull fruit to prevent additional SWD feeding and breeding sites. Keep equipment and processing areas free of old fruit. Pruning, trellising, and good plant care will enable easier passage of equipment between rows, keep humidity lower, and increase airflow, all of which will help limit SWD.
3. **Area wide approach:** Think beyond the borders of your farm and be aware of host plants in adjacent fields. Encourage neighbours to also manage for SWD.
4. **Harvest:** Shorten picking interval where possible: pick early, pick clean and pick often. Do not leave overripe hanging fruit.

Chemical Control

Chemical control will be required once berries start to colour. Check regional trap catch information to know if SWD flies are being caught in your area. While trapping in individual fields is useful, it is not comprehensive. Fruit stage and regional fly catch information is more useful for determining SWD risk:

RISK = SWD Flies in Region + Ripening Fruit

Adults are the target – they are killed by direct spray contact and/or when they are exposed to residues of insecticide on the treated fruit and leaves.

Consider the following when planning a spray program:

1. All of the recommended products are toxic to bees. Avoid application when crops are blooming and bees are in the field. If sprays are necessary during this time (i.e. in adjacent fields), they should be applied at night.
2. Use enough water and pressure to ensure adequate coverage (up to 500 L/ha of water). Flies prefer to feed in the lower, shaded, more humid part of the canopy.
3. Use spray equipment that will allow effective coverage. Consider crop training and use of trellis wires to improve sprayer access to crop.
4. Do not apply insecticides by aircraft.
5. To limit development of resistance, rotate between the recommended products.
6. Ripening fruit should be protected throughout the harvest period.
 - a. Strawberries: 10-14 days between sprays.
 - b. Raspberry and Blueberry: 7-8 day interval between sprays.
7. For raspberries, strawberries and other crops prone to mites, application of Malathion and Ripcord may kill predators and result in a build up of spider mites. Carefully monitor mite levels and apply registered miticides if necessary.
8. For raspberries, incorporate an SWD insecticide with the traditional “pre-harvest cleanup” insecticide spray. Additional sprays are necessary to protect the ripe fruit through the harvest period.
9. A post-harvest spray may be necessary to prevent flies from building up on residual fruit (i.e. raspberries) and spreading to adjacent later crops (i.e. blueberries).

The table below provides information on products that received emergency registration for control of SWD effective from June 1 to November 30, 2014. **Read the product labels for complete user instructions at:**

Current Emergency Registrations for British Columbia,
www.al.gov.bc.ca/pesticides/k_4.htm#2

For more information on SWD management in berries contact BC Ministry of Agriculture:
Mark Sweeney, Tracy Hueppelsheuser at 604-556-3001

Insecticides with Full Registration for Spotted Wing Drosophila, 2014

Trade Name (Active Ingredient), Group	Crop	Rate	Pre-harvest Interval (Days)	Re-entry Interval	Application Interval (Days)	Maximum Number of Applications	Comments (from label)
Exirel Cyantraniliprole	Blueberry (bushberry group)	1000-1500 mL/ha	3	12 h	5	4	Begin applications when populations are low. DUPONT™ EXIREL™ insecticide targets the adult life stage of Spotted wing drosophila. If Spotted wing drosophila populations are high, use a registered insecticide with a different mode of action to reduce the pest populations. Apply a subsequent application of DUPONT™ EXIREL™ insecticide if required.

- Tank mixes and sequential applications with strobilurin (Pristine, Cabrio), copper and captan fungicides are not recommended as crop injury has resulted under lab settings.
- There is no residue tolerance for Exirel in Japan. Talk to your packer before using.

Insecticides with Emergency Registration for use on Berries* for the Control of Spotted Wing Drosophila in British Columbia (Registrations are Valid until November 30, 2014)

Trade Name (Active Ingredient), Group	Crop	Rate	Pre-harvest Interval (Days)	Re-entry Interval	Application Interval (Days)	Maximum Number of Applications	Comments
Delegate WG (spinetoram), Group 5	Blueberry	315 to	3	12 h	7	3	There is currently no residue tolerance for Delegate in Japan for RASPBERRIES. Check with your packer before using
	Raspberry	420 g/ha	1				
	Blackberry	(126-168 g/acre)					
	Strawberry	280 g/ha (112 g/acre)					

Trade Name (Active Ingredient), Group	Crop	Rate	Pre-harvest Interval (Days)	Re-entry Interval	Application Interval (Days)	Maximum Number of Applications	Comments
Ripcord 400 EC (cypermethrin), Group 3	Raspberry, Strawberry, Blackberry	150 – mL/ha (60 mL/acre)	2 days	12 h	NA	1	Important: MRL for Ripcord is decreased to 0.1 ppm. Check with your packer before using. Ripcord is not registered for control of SWD in BLUEBERRIES in 2014.
Malathion 85E (malathion), Group 1B	Blueberry	1.0 L /1000 L of water	2	12 h	7 - 10	3	For best results, temperature at application must be 20°C or higher.
	Raspberry		1				
	Strawberry		3			2	
	Blackberry		1				
Entrust SC (spinosad), Group 5	Blueberry	333 - 444 mL/ha (133-178 mL/acre)	3	12 h	5	3	OMRI approved for organic production. In trials in California, it was not as persistent as the other products tested for SWD and required a shorter spray interval.
	Raspberry Blackberry		1				
	Strawberry	292 - 364 mL/ha (117-146 mL/acre)	1				

*Minor berry crops such as currants and gooseberries are not included in this table, but are included on the labels. Consult the product labels for information.