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UPDATE ON SPRAY MATERIALS FOR MANAGING SPOTTED WING DROSOPHILA (SWD)

In addition to the table on the third page, here are some other materials that may be useful for targeting SWD.

1.) Actara 25 WDG is now registered for use on berry crops. It may be applied at up to 3 oz. per acre on raspberries, and 4 oz. per acre on strawberries and blueberries. It has a 3 day PHI on all these crops and a 12 hour REI. The maximum that may be applied is 6 oz. per acre (2 sprays, at least 7 days apart) for raspberries, and 12 oz./acre on the other crops. There are other useful properties for this active ingredient. With very full spray coverage in blueberries, I anticipate that it will also suppress Putnam scales, plus it should perform well against aphids and Japanese beetles. In strawberries, it will provide some benefit for targeting black vine weevil and other root weevils. A link to the label is given below.

http://www.syngentacropprotection.com/pdf/labels/SCP938AL2L0810.pdf

2.) Most of the insecticides registered for use against SWD act best through ingestion, with the exception of pyrethroids (bifenthrin, esfenvalerate, fenpropathrin, permethrin, and zeta-cypermethrin) which act through contact. Therefore, these other materials (spinosad, spinetoram, malathion, acetamiprid, imidacloprid, or thiamethoxam) should perform much better when applied with a feeding stimulant (sugar). Sugar (1 – 2 pounds per 100 gallons) mixed with the insecticide spray will elicit a proboscis extension reflex when the flies' feet contact wet or dried spray droplets on the leaf or fruit surface. Flies are highly dependent on sugars to satisfy the demands of their flight muscles. By mixing sugar with the insecticide, we can anticipate (a) much faster effect of the insecticide sprayed, and (b) longer effects for the amount of insecticide used, especially if there are some under-leaf spray droplets, which will protect the insecticide from being broken down by sunlight.

The reasons why incorporating table sugar into the spray are legal: (a) it is a common food material and is exempt from tolerance, and (b) it is being used as an adjuvant, not as an active ingredient, and so it does not require an EPA registration.

An expected negative effect from using sugar is promotion of plant diseases. Sugars on foliage and fruit surface may stimulate

(while wet) spore germination, and provide energy for penetration of the fungus into the plant. If incorporating sugars into SWD sprays, always spray under fast-drying conditions.

3.) One other potentially useful insecticide is Surround WP, which is an organically acceptable kaolin clay product. Dislodgeable residues of this clay act as a desiccant dust when contacted by flies, which typically die within a few hours following exposure. Be sure to wear a respirator when loading your sprayer with this product, because inhaled kaolin can cause chronic lung damage. This material may be appropriate for use on blueberries and grapes, which may easily be washed; probably not useful for strawberries and raspberries.

Be sure to follow label directions and protect bees from exposure to insecticides. Mention of a specific product does not constitute an endorsement.

Table 1. Insecticides for Blueberries, Strawberries, Caneberries, Grapes and Stone Fruit for Spotted Wing Drosophila

Active Ingredient	Trade name[1]	IRAC code	Blueberry		Caneberry		Strawberry		Grapes		Stone Fruit		Probable Efficacy
			PHI (days)	REI	PHI (days)	REI	PHI (days)	REI	PHI (days)	REI	PHI (days)	REI	
Actamiprid	Assail	4A	1	12 hrs	1	12 hrs	1	12 hrs	7	12 hrs	7	12 hrs	Fair
Bifenthrin	Brigade	3	1	12 hrs	3	12 hrs	0	12 hrs	Not labeled	Not labeled	Not labeled	Not labeled	Excellent
Carbaryl	Sevin	1A	7	12 hrs	7	12 hrs	7	12 hrs	7	12 hrs	3	12 hrs	Good
Diazinon	Diazinon	1B	7	5 days	7	5 days	5	3 days	Not labeled	Not labeled	21	4 days	Excellent
Esfenvalerate	Asana	3A	14	12 hrs	7	12 hrs	Not labeled	Not labeled	Not labeled	Not labeled	14	12 hrs	Excellent
Fenpropathrin	Danitol	3	3	24 hrs	3	24 hrs	2	24 hrs	21	24 hrs	3	24 hrs	Excellent
Imidacloprid	Provado[&]	4A	3	12 hrs	3	12 hrs	7	12 hrs	0	12 hrs	0-7	12 hrs	Fair
Imidacloprid & cyfluthrin	Leverage 360 & 2.7	4A, 3	Not labeled	Not labeled	Not labeled	Not labeled	Not labeled	Not labeled	3	12 hrs	7	12 hrs	Excellent
Malathion	Malathion	1B	1	12 hrs	1	12 hrs	3	12 hrs	3	24-72 hrs	1 or 3	12 hrs	Excellent
Methomyl	Lannate	1A	3	48 hrs	Not labeled	Not labeled	Not labeled	Not labeled	Not labeled	Not labeled	Not labeled	Not labeled	Excellent
Phosmet	Imidan	1B	3	24 hrs	Not labeled	Not labeled	Not labeled	Not labeled	Not labeled	Not labeled	7	3 day	Good
Pyrethrin	Pyganic *	3A	0	12 hrs	0	12 hrs	0	12 hrs	0	12 hrs	0	12 hrs	Good
Pyriproxyfen	Esteem	7	7	12 hrs	Not labeled	Not labeled	2	12 hrs	21	12 hrs	14	12 hrs	Fair/Good
Spinetoram	Delegate	5	3	4 hrs	1	4 hrs	Not labeled	Not labeled	7	4 hrs	7	4 hrs	Excellent
Spinetoram	Radiant	5	Not labeled	Not labeled	Not labeled	Not labeled	1	4 hrs	Not labeled	Not labeled	Not labeled	Not labeled	Excellent
Spinosad	Entrust *[&]	5	3	4 hrs	1	4 hrs	1	4 hrs	7	4 hrs	1 - 14	4 hrs	Good/Exc
Zeta-cypermethrin	Mustang Max	3	1	12 hrs	1	12 hrs	Not labeled	Not labeled	1	12 hrs	14	12 hrs	Excellent

*OMRI listed

&: Stone Fruit: there are different PHI depending on specific stone fruit crop, check label before using

PHI= pre-harvest interval; time between last application and harvest

REI= re-entry interval; time between application and when workers may re-enter the field

Probable ratings based on lab and field assays in western USA and Michigan