



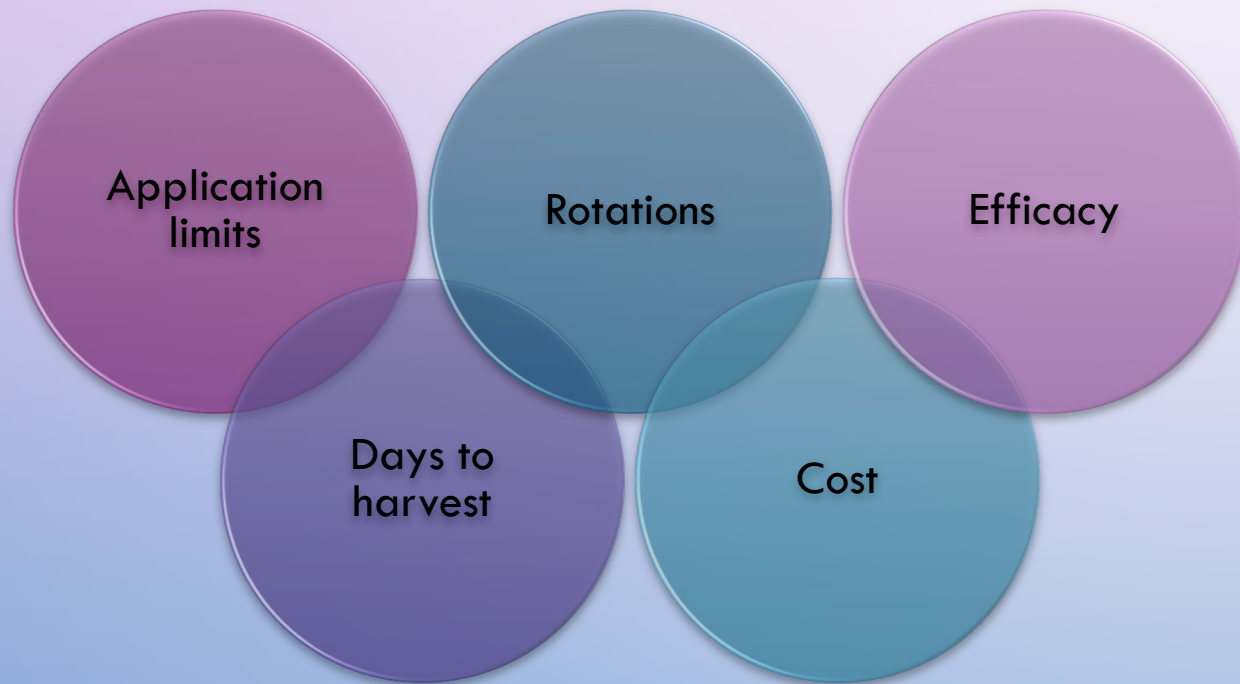
# CURRENT RECOMMENDATIONS FOR SWD IN BLUEBERRIES

ESTHER KIBBE

HARVEST NY

# SWD CONTROL TODAY

## SPRAYING



## EXCLUSION NETTING





# CHEMICAL CONTROL: WHEN TO SPRAY

- START SPRAYING WHEN BERRIES START TO COLOR (RED/PURPLE) IF TRAPS OR TRAPPING NETWORK SHOW SWD CAPTURES
- CONTINUE TO SPRAY WEEKLY (EVERY 7-10 DAYS) UNTIL END OF HARVEST
- USE 3-DAYS-TO-HARVEST PRODUCTS EARLIER IN SEASON WHEN FRUIT ISN'T RIPE (EXIREL, DANITOL, LANNATE, IMIDAN)
- WATCH MAXIMUM APPLICATIONS PER SEASON BY PRODUCT AND CHEMISTRY! DON'T FORGET TO COUNT EARLIER SPRAYS FOR FRUITWORMS.



# ROTATION IS KEY!

- ROTATE CHEMISTRIES NOT JUST PRODUCTS
  - GROUP 1A: LANNATE
  - GROUP 1B: IMIDAN, MALATHION
  - GROUP 3A: BRIGADE, DANITOL, MUSTANG MAXX, PYGANIC, BIFENTHRIN
  - GROUP 5: DELEGATE, ENTRUST
  - GROUP 28: EXIREL



# CORNELL QUICK GUIDE TO INSECTICIDES

- [HTTP://WWW.HORT.CORNELL.EDU/FRUIT/PDFS/SWD/BERRY-INSECTICIDES.PDF](http://www.hort.cornell.edu/fruit/pdfs/swd/berry-insecticides.pdf)

## June 2019 - Labeled Insecticides for Control of Spotted Wing Drosophila in New York Berry Crops – Quick Guide

Compiled by Greg Loeb, Laura McDermott, Peter Jentsch & Juliet Carroll, Cornell University. Updated regularly.

BLUEBERRIES										
PRODUCT	AI <sup>1</sup>	IRAC group <sup>2</sup>	EPA#	Rate/A	REI <sup>3</sup>	DTH <sup>4</sup>	Max. Prod/A/yr (ai)	Total applic's	Spray Interval	Probable efficacy
<sup>^</sup> @Entrust Naturalyte (2cc) <sup>a</sup>	spinosad	5	62719-282	1.25-2 oz	4 hr	3 d	9 oz (0.45 lb)	3 per crop	> 6 d	Good to Excellent <sup>#</sup>
<sup>^</sup> @Entrust SC <sup>a</sup>	spinosad	5	62719-621	4-6 fl oz	4 hr	1 d	29 fl oz (0.45 lb)	3 per crop	> 6 d	Good to Excellent <sup>#</sup>
@Delegate WG	spinetoram	5	62719-541	3-6 oz	4 hr	3 d	19.5 oz (0.305 lb)	6	> 6 d	Excellent <sup>#</sup>
@Delegate WG (suppl. label)	spinetoram	5	62719-541	3-6 oz	4 hr	1 d	17.9 oz (0.281 lb)	3	6 d (1 <sup>^</sup> -2 <sup>^</sup> ) 12 d (3 <sup>^</sup> -4 <sup>^</sup> )	Excellent <sup>#</sup>
*Exirel	cyazypyr	28	352-859	13.5-20.5 fl oz	12 hr	3 d	61.5 fl oz (0.4 lb)	3	> 5 d	Excellent
Bifenture 10DF	bifenthrin	3	70506-227	5.3-16 oz	12 hr	1 d	80 oz (0.5 lb)	-	> 7 d	Excellent
*Brigade WSB (2cc)	bifenthrin	3A	279-3108	5.3-16 oz	12 hr	1 d	80 oz (0.5 lb)	-	> 7 d	Excellent
*Danitol 2.4EC	fenpropathrin	3A	59639-35	16 fl oz	24 hr	3 d	32 fl oz (0.6 lb)	2	-	Excellent
*Mustang Maxx Insecticide	zeta-cypermethrin	3A	279-3426	4 fl oz	12 hr	1 d	24 fl oz (0.15 lb)	6	> 7 d	Excellent
<sup>^</sup> Pyganic EC 1.4	pyrethrin	3A	1021-1771	1 pt-2 qts	12 hr	0 d	-	-	-	Fair to Poor
<sup>^</sup> Pyganic EC 5.0	pyrethrin	3A	1021-1772	4.5-18 fl oz	12 hr	0 d	-	-	-	Fair to Poor
Assail 30SG (2cc)	acetamiprid	4A	8033-36-70506	4.5-5.3 oz	12 hr	1 d	26.7 oz (0.5 lb)	5	> 7 d	Good <sup>#</sup>
*Lannate SP	methomyl	1A	352-342	0.5-1 lb	48 hr	3 d	4 lb (3.6 lb)	4	> 5-7 d	Excellent
*Lannate VP	methomyl	1A	352-384	1.5-3 pts	48 hr	3 d	12 pts (3.6 lb)	4	> 5-7 d	Excellent

<sup>^</sup>Refer to label for details and additional restrictions.

<sup>a</sup>Adding sugar (sucrose) at 2 lb/100 gal water as a feeding stimulant will increase efficacy.

<sup>\*</sup>Approved for organic use in NY.

<sup>@</sup>After two consecutive applications must rotate to different mode of action.

<sup>1</sup> Active Ingredient.

<sup>2</sup> Mode of Action, based on IRAC group code (UN = unknown).

<sup>3</sup> Re-entry Interval (hr = hours).

<sup>4</sup> Days to Harvest (d = days).



# EXAMPLE SPRAY PROGRAMS

## CONVENTIONAL – APPLY EVERY 7-10 DAYS

- LANNATE (1A, 3DTH)
- EXIREL (28, 3DTH)
- MUSTANG MAXX (3A, 1DTH)
- DELEGATE (5, 1DTH)
- MUSTANG MAXX (3A, 1DTH)
- DELEGATE (5, 1DTH)
- ASSAIL (4A, 1DTH)
- LANNATE (1A, 3DTH)

8 weeks of sprays, starting late June, provides coverage until mid-late August. Late varieties may need more applications.

# EXAMPLE SPRAY PROGRAMS

## ORGANIC – APPLY EVERY 5-7 DAYS (OBSERVING LABEL LIMITS)

- AZASOL
- PYGANIC
- ENTRUST
- GRANDEVO
- ENTRUST
- GRANDEVO
- AZASOL
- ENTRUST
- GRANDEVO

Organic products have shorter residual efficacy – must reapply sooner.

Only 3 applications of Entrust per season!



# CULTURAL BEST PRACTICES

*NOT AN ALTERNATIVE TO CHEMICAL USE, BUT WILL MAXIMIZE SUCCESS*

- PICKING CLEAN – BREAK THE CYCLE IN THE FIELD
- DESTROY INFESTED FRUIT – BAG OR BURY
- CHILL HARVESTED FRUIT & ENCOURAGE CUSTOMERS TO DO THE SAME
- PRUNING FOR AIR MOVEMENT AND SPRAY COVERAGE
- MANAGE WEEDS IN FIELD AND ALTERNATE HOSTS IN CLOSE PROXIMITY
- CROP TERMINATION/RENOVATION OF NEARBY STRAWBERRIES/RASPBERRIES
- AVOID/REMOVE LATE FRUITING VARIETIES (OR EXPECT HIGHER INFESTATION RATES)



# RECENT RESEARCH FINDINGS AND PRACTICAL APPLICATION

- SWD IS MOST ACTIVE IN THE MORNING (LOWER CANOPY) AND EVENING (HIGHER CANOPY)
  - TARGET SPRAYS TO TIMES OF HIGH ACTIVITY
  - AVOIDING MID-DAY SPRAYS PROTECTS POLLINATORS
  - LOWER CANOPY SPRAYS NEARLY AS EFFECTIVE AS FULL COVERAGE
- HUMMINGBIRDS EAT A TREMENDOUS NUMBER OF SWD ADULTS
  - SIGNIFICANT REDUCTION IN INFESTED FRUIT (50% OR MORE) WHEN HUMMINGBIRD ACTIVITY IS HIGH
  - MAINTAINING SUGAR-WATER FEEDERS IN THE FIELD ATTRACTS THE HUMMINGBIRDS, BUT CAN BE TIME CONSUMING
- SWD ADULTS HATCHED IN COLD CONDITIONS CAN TOLERATE MUCH COLDER TEMPS THAN PREVIOUSLY THOUGHT – “WINTER MORPH”
  - DON’T COUNT ON WINTER COLD TO KILL ADULTS – THEY ARE ADAPTING
- FUTURE RESEARCH
  - HYDROSHIELD – PRELIMINARY RESEARCH IS ENCOURAGING, TRIAL IN WNY THIS SUMMER
  - EXCLUSION NETTING DEMONSTRATIONS – DESIGNING BETTER STRUCTURES

QUESTIONS?

