

Evolving on-farm SWD management programs in tart cherries

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Background and Methods

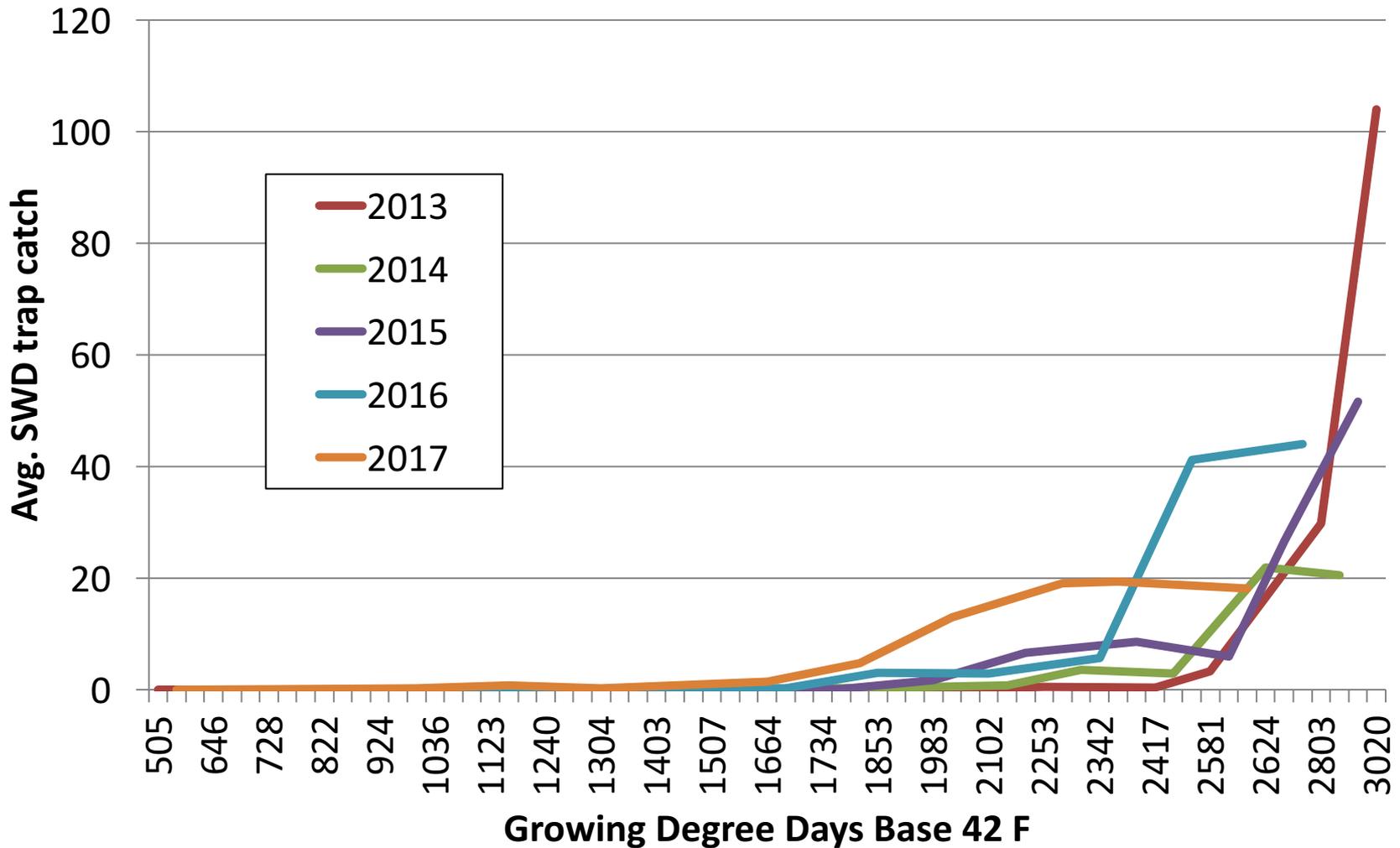
- Reviewed 2013-2017 spray records from 5-10 farms/yr
 - To gain a better understanding of the impact of SWD and effective on-farm SWD management programs
 - Observed # of full cover equivalent sprays, AIs, rates, spray intervals and strategies (ARM vs. Full cover)
 - 2015 – compared spray programs with grower reports of clean or infested fruit prior to or at harvest
 - 2016 – compared spray programs with on-farm trapping (5 traps/farm) and fruit sampling for SWD (3 gal per wk per 3 wks)
 - To further observe the relationship of trap counts and when fruit become infested
 - 2017 – expanded 2016 methods to WC and SW MI

Summary of SWD Programs in Tart Cherry

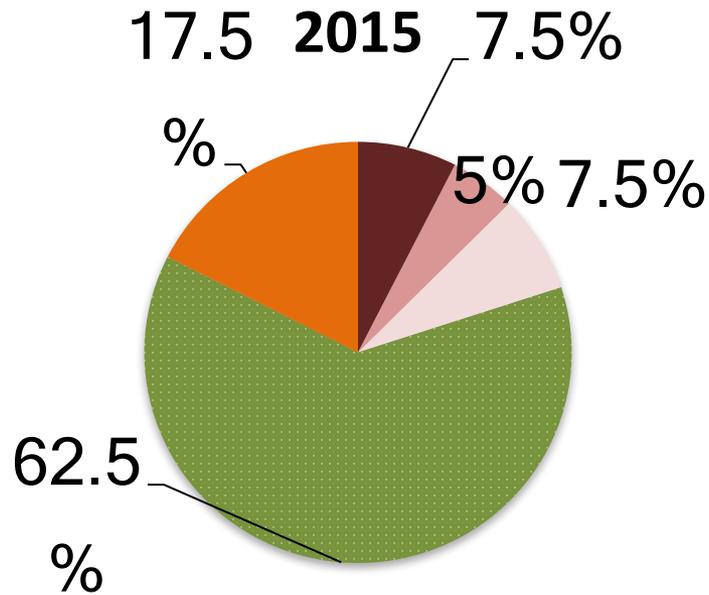
Year	Date of 1 st SWD adult catch	Avg. # SWD Sprays	Range of SWD Sprays	Harvest timings	# of Farms w/ Detectable SWD Larvae at Harvest
2013 NW	7/29		0-1	7/17 – 8/1	No reports
2014 NW	6/30	1.8	1.5-2	7/25 – 8/7	No reports
2015 NW	6/29	2	1-4	7/17 – 8/5	5 of 10
2016 NW	5/30	3.6	2-6	7/15 – 8/6	6 of 10
2017 NW	5/22	4.4	2.5-7	7/12 – 8/6	8 of 10
2017 WC	5/22	3.2	1-5	7/11 – 7/21	3 of 10
2017 SW	5/24	3.3	2-4	7/3 – 7/5	2 of 5



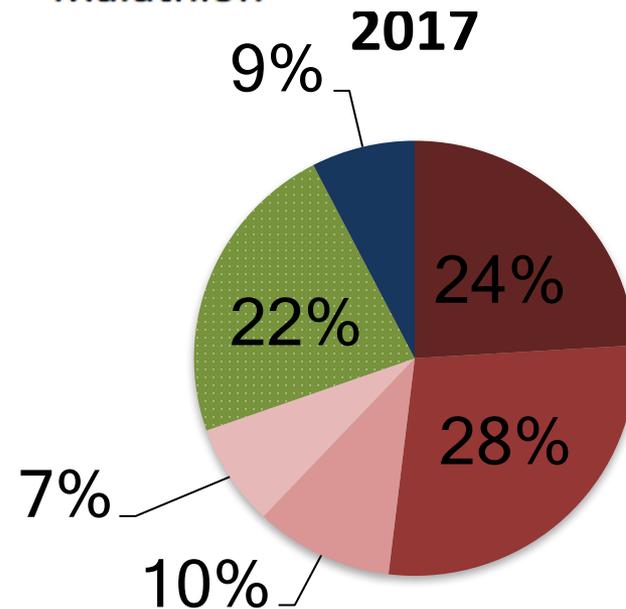
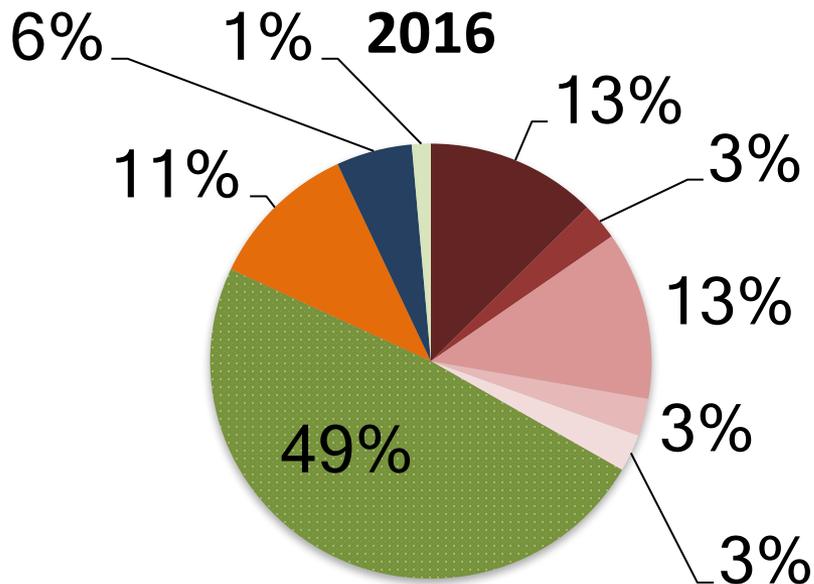
2013-17 NW MI SWD Trap Line



Percentages of Insecticides Used for SWD in NW



- Lambda-cy (Warrior, generics)
- Zeta-cypermethrin (Mustang Max)
- Fenpropathrin (Danitol)
- Cyfluthrin (Baythroid, Tombstone)
- Permethrin
- Phosmet (Imidan)
- Spinetoram (Delegate)
- Cyantraniliprole (Exirel)
- Malathion



Summary of observations for NW MI

- Increasing number of sprays targeting SWD
 - Mainly due to harvest timing; but also earlier pest detection, crop susceptibility, and shortened spray intervals
 - Product selection: the need to control SWD is driving mgmt programs
 - i.e. Late PC mgmt overlap w/ SWD, less imidacloprid (CFF) & Delegate (OBLR)

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- Decreasing insecticide class diversity
 - More pyrethroids used likely due to availability (i.e. they are abundant), efficacy, affordability, processor restrictions

Material	Cost /A est., 2017 data
Mustang Max (e)	\$4.06
Baythroid (g)	\$5.03
Warrior II (e)	\$6.25
Imidan (e)	\$22.19
Danitol (e)	\$30.05
Delegate, 6 oz (g)	\$52.90
Exirel, 13.5 oz (e)	\$56.14

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- Decreasing insecticide class diversity
 - More pyrethroids used likely due to availability (i.e. they are abundant), efficacy, affordability, processor restrictions
- Based on MSU's recommendations, growers are using best management practices *when possible*
 - Limitations are time, labor, cost, equipment, etc.

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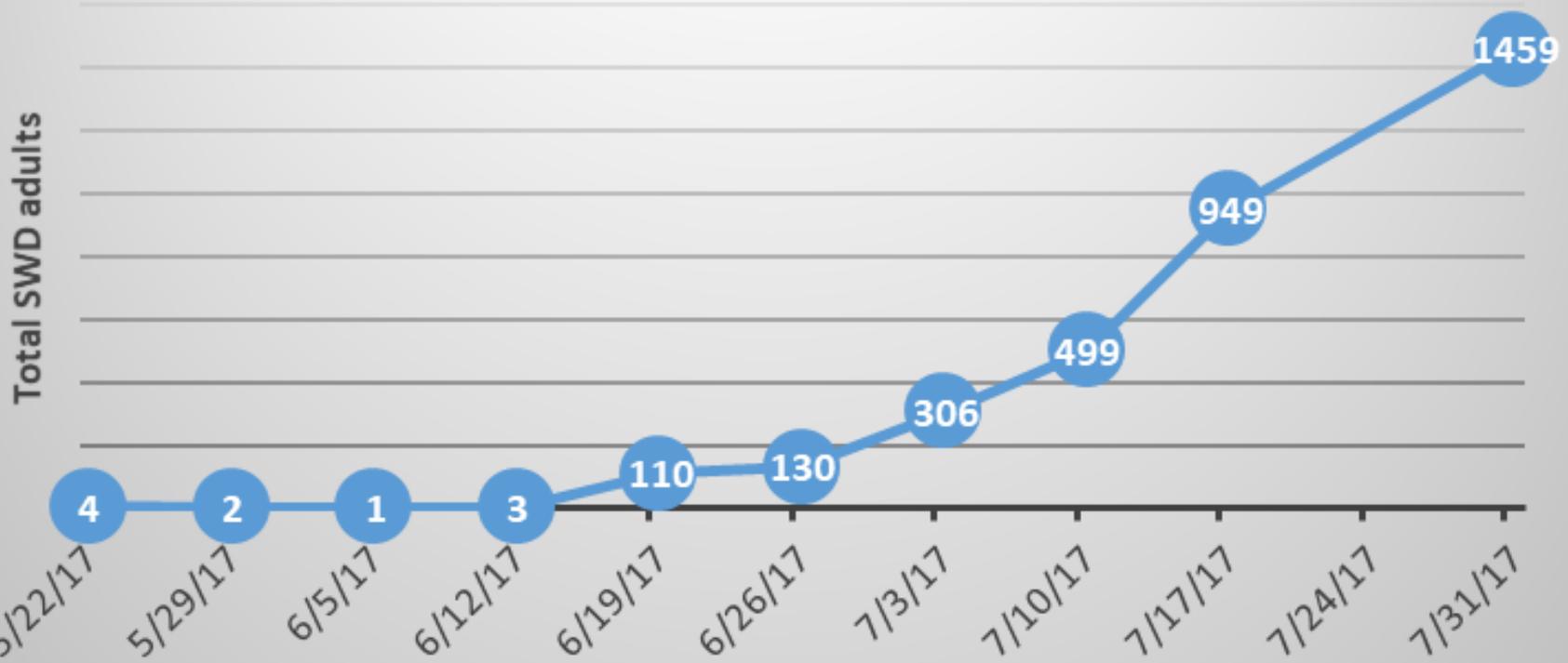
2017 Spray Program Observations from WC MI

Dave Jones, Michigan State University Extension



West Central Michigan SWD adult population, 2017

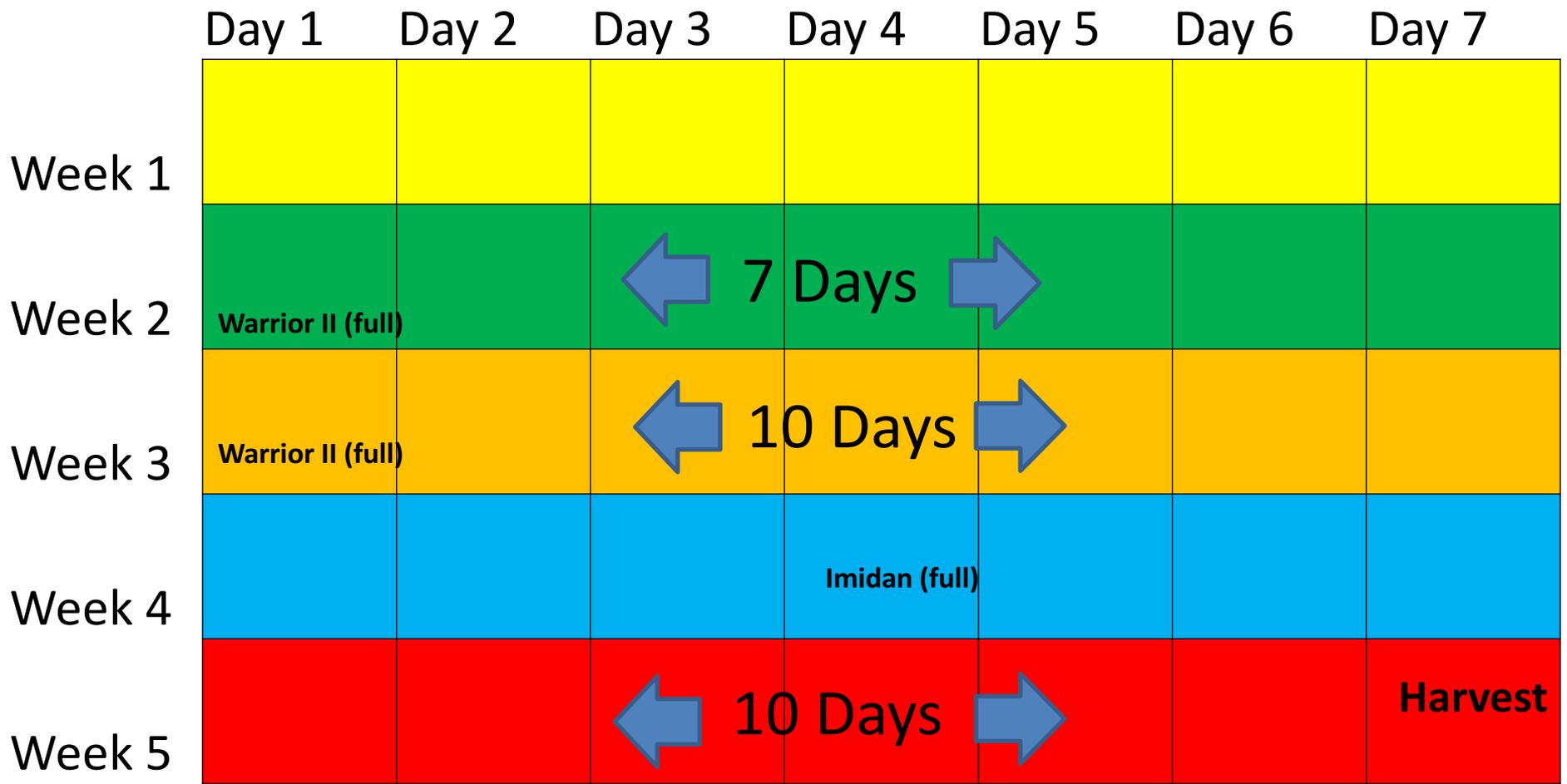
(Sum of 10 sites)



Successful program:

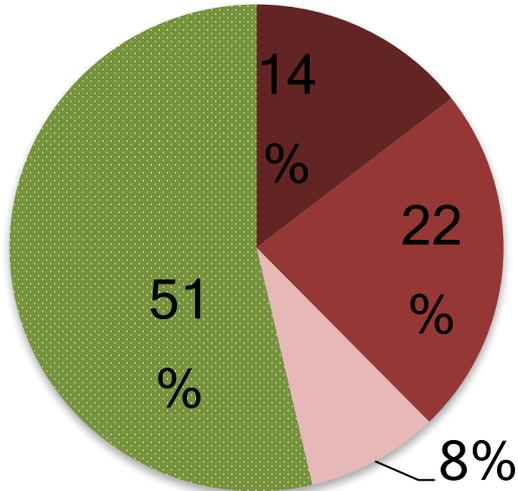


Unsuccessful program:



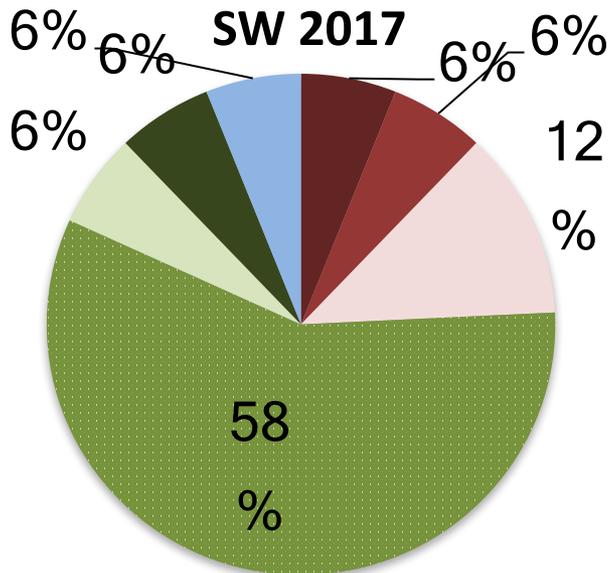
Percentages of Insecticides Used for SWD in WC and SW (2017)

WC 2017



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- Zeta-cypermethrin (Mustang Max)
- Fenpropathrin (Danitol)
- Cyfluthrin (Baythroid, Tombstone)
- Permethrin
- Phosmet (Imidan)
- Spinetoram (Delegate)
- Cyantraniliprole (Exirel)
- Malathion
- Lorsban
- Assail

SW 2017



Summary of Observations in WC & SW MI

- WC growers are generally still getting acceptable management
- The increase in sprays observed in southwest and west central in 2017 represented a major regional shift in SWD management
- Growers further south are generally applying fewer sprays on average than northwest
- Programs in northwest and southwest were generally more diverse in products (not necessarily class) than west central
- Areas that had not previously struggled with this pest are now experiencing difficulty
- Is this the new norm in the south?

Thank you!

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Grower Cooperators

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Christie Kandel

