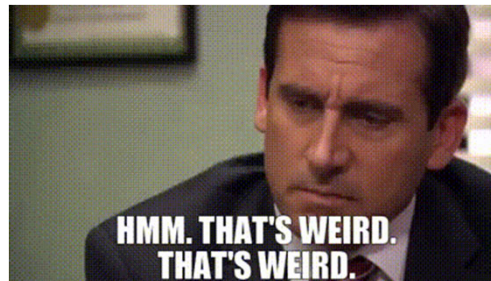




What Happened to Insect Pests in 2023?

David Owens and Morgan Malone



Miscellaneous



Product Updates

- Lorsban back for asparagus and strawberry?
- Vantacor eVo
- MyIPM App for Vegetables available for tomatoes and cucurbits
- Photo compendium

MyIPM for Vegetables provides Integrated Pest Management (IPM) information for conventional and organic production of vegetable crops including, cucurbits (cantaloupe, cucumber, pumpkin, squash, watermelon) and tomatoes.

The target audience is commercial growers (conventional and organic), farm advisors, and specialists, but homeowners may also find useful information.

[DOWNLOAD 2022/2023 MID-ATLANTIC
COMMERCIAL VEGETABLE PRODUCTION
RECOMMENDATIONS \(PDF\) >](#)



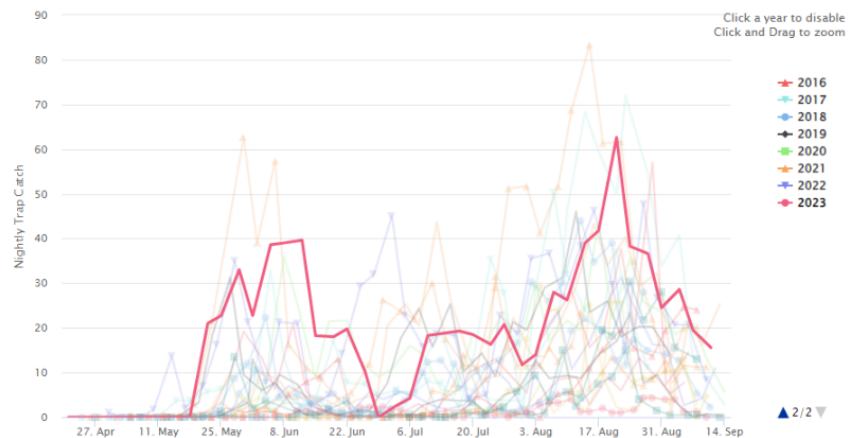
View our interactive database featuring photos of various pests and diseases impacting Delaware's commercial vegetable and fruit crops.

[PEST AND DISEASE PHOTO DATABASE >](#)

Sweet Corn



Laurel-CEW Pheromone

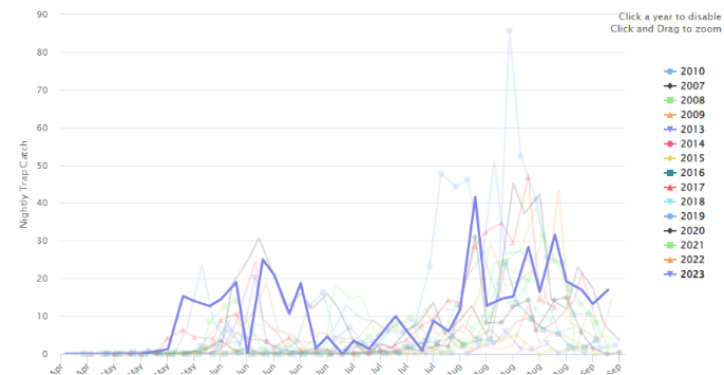


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25 injured ears out of
1,200

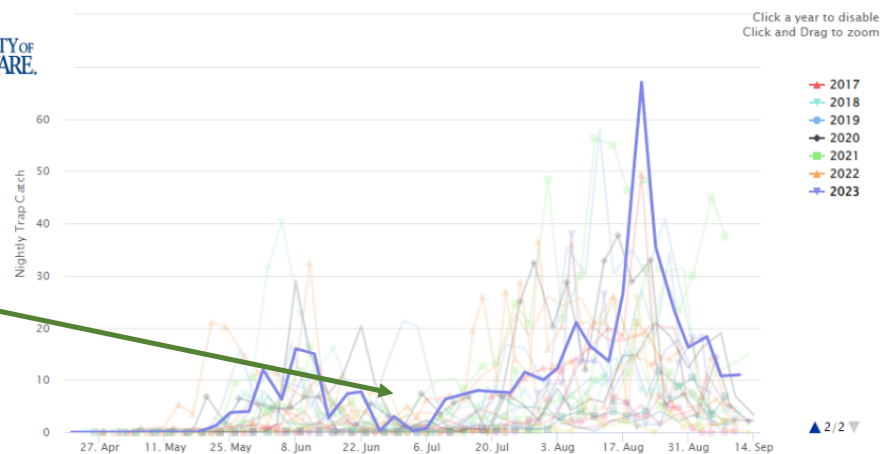
Concord-CEW Pheromone



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Georgetown-CEW Pheromone

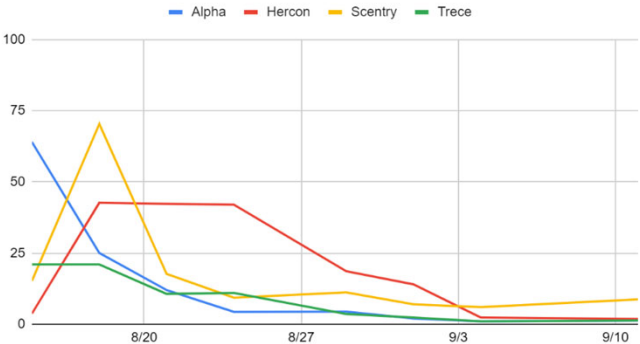


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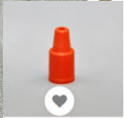
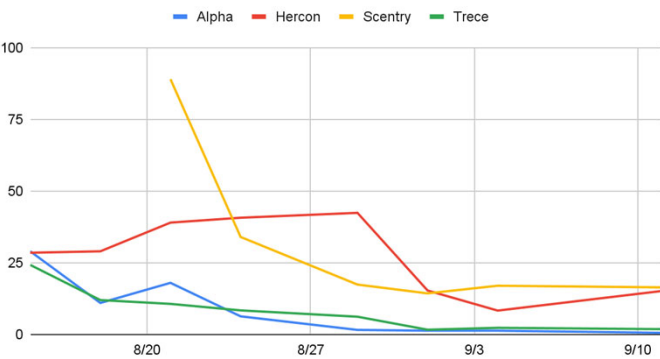


Trapping Comparison

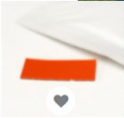
Scentry Trap Nightly Catch



Cone Trap Nightly Catch



TRECE PHEROCON
TOBACCO BUDWORM
(TBW) LURES, 3/CS
GL/TR-3122-03
US\$6.18



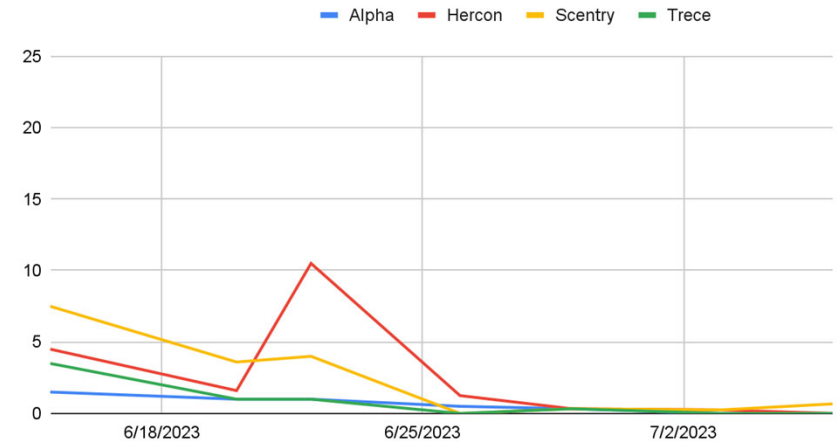
HERCON LURETAPE CORN
EARWORM, 10/CS
GL/HC-3138-10
US\$21.38



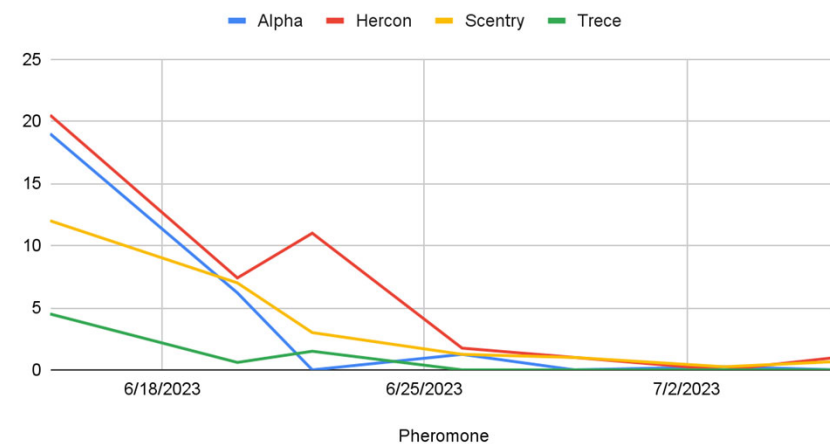
Trapping Comparison

- Generally, wire cone traps more efficient, especially with low populations
- Scentry traps affordable, but more difficult to deploy and maintain
- Hercon and Scentry lures seem to be more reliable – based on multiple trapping locations (Brian Nault lead)

Scentry Trap Nightly Catch



Cone Trap Nightly Catch



Sweet Corn and Foul Weather

- What to do when this chases your sprayer?

4) Ear Protection

Corn Earworms (CEW) and Other "Worm" Pests Including European Corn Borers (ECB), Fall Armyworms (FAW), and Western Bean Cutworms (WBC)

CEW is the major pest attacking corn ears in the mid-Atlantic U.S. Moth activity increases after mid-July and continues into September. One female can deposit an egg on hundreds of ears. Direct sampling for CEW, FAW, and ECB during silking is not practical. Begin treatment when the ear shanks emerge or the very first silks appear. Silk sprays should continue on a schedule based on area blacklight or pheromone trap counts, geographical location, and time of year. Before mid-July, silk sprays may be required on a 3-6-d schedule. When CEW populations are heavy (> 10 moths per night), and/or later in the summer, it may be necessary to treat on a 2-3 day schedule.

Note that some localized CEW populations have developed resistance to pyrethroids (Group 3A), and that these insecticides should be used with caution and rotated to other insecticide classes within a season.

Applications during the low populations can be terminated up to 5 d before last harvest. During heavy populations and high temperatures, treatments will need to be made according to the legal "days to harvest" of the chemical. For best control during heavy infestations, maximize the gallonage of water per acre, use a wetting agent, and make applications during the early morning if possible. **If irrigation or rains wash off the spray within 24 h after an application, repeat treatment as soon as the foliage dries.** For more precise timing of silk sprays, use blacklight and pheromone traps to determine the actual moth activity on your farm. Contact your county Extension agent or consult your state pest management newsletter for more information on these techniques.

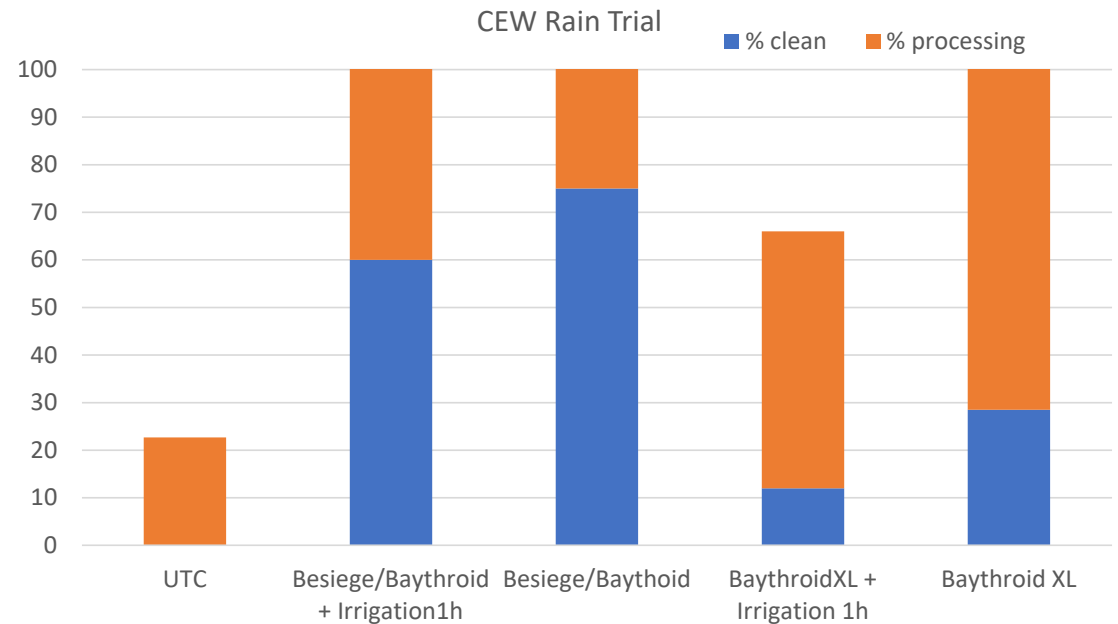
Apply one of the following formulations:						
Group	Product Name (*=Restricted Use)	Product Rate	Active Ingredient(s)	PHI (d)	REI (h)	Bee TR
1A	Lannate LV*	1.0 to 1.5 pt/A	methomyl	see label	48	H
3A	Pyrethroid insecticides registered for use on Sweet Corn: see table at the end of Insect Control.					
5	Blackhawk 36WG	2.2 to 3.3 oz/A	spinosad	1	4	M
5	Radiant SC	3.0 to 6.0 fl oz/A	spinetoram	1	4	M
18 + 5	Intrepid Edge	4.0 to 12.0 fl oz/A	methoxyfenozide + spinetoram	3	4	M
28	Vantacor	1.2 to 2.5 fl oz/A	chlorantraniliprole - foliar	1	4	L



Sweet Corn 2023 “Rain Trial”

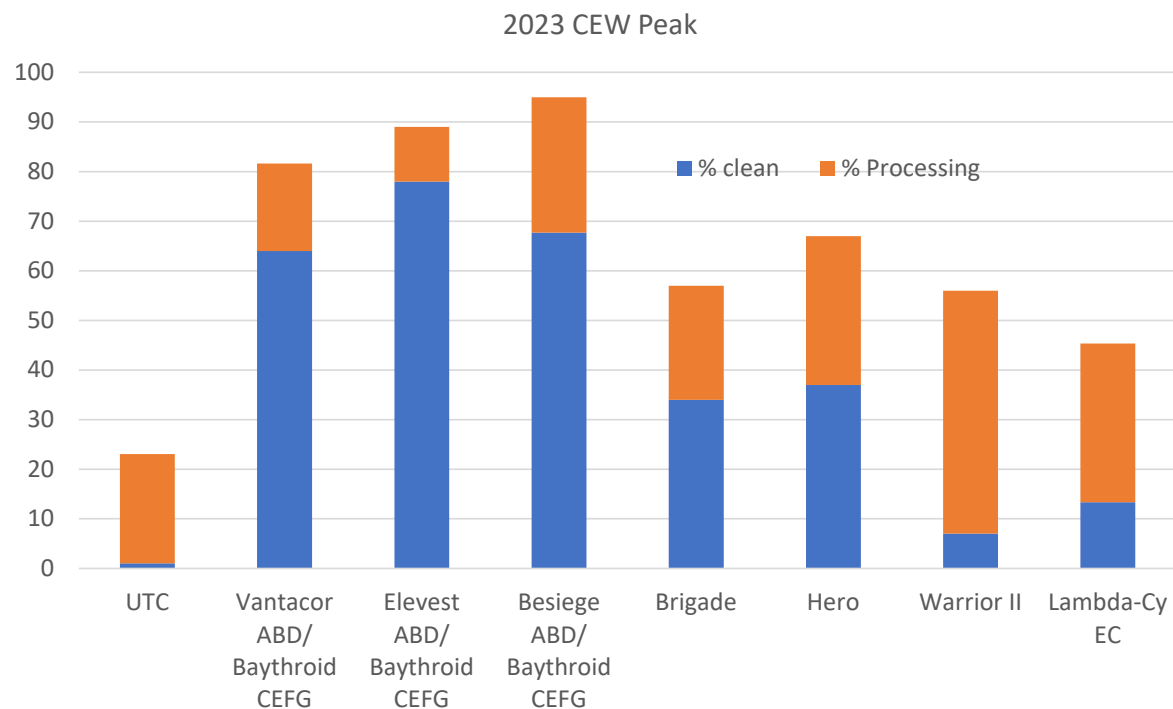


- 7 applications August 16-Sept 3
- Harvest Sept 7
- Next year will run again with just Besiege.



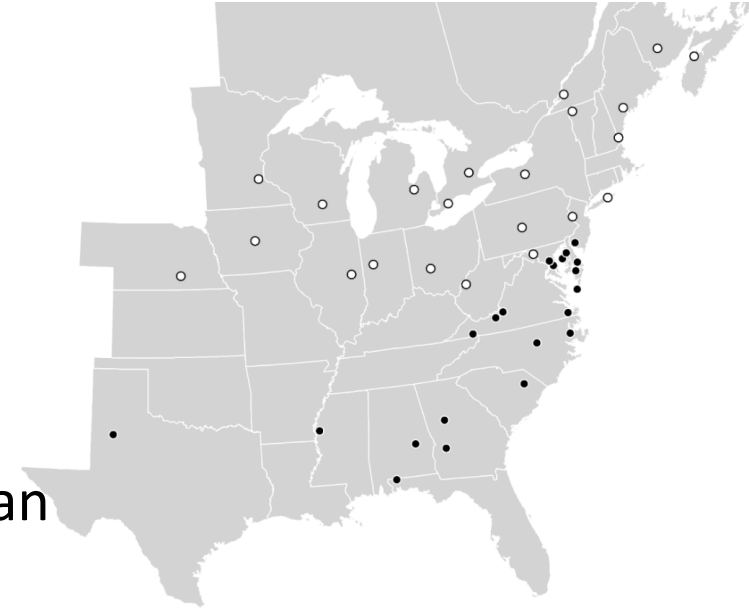
Do Some Pyrethroids Work Better?

- 2023: Hero = Brigade > Lambda-Cy \geq Warrior II
- Pyrethroid efficacy quite low



Bt Sweet Corn Changes

- 60 sites, 3 Canadian provinces and 25 states
- Attribute I, Attribute II, Performance
- Sentinel plots (UMD) : Vip traited sweet corn = clean
- Handy Bt Trait Table for Sweet Corn



Cucurbits

Striped Cucumber Beetle: What Happened?

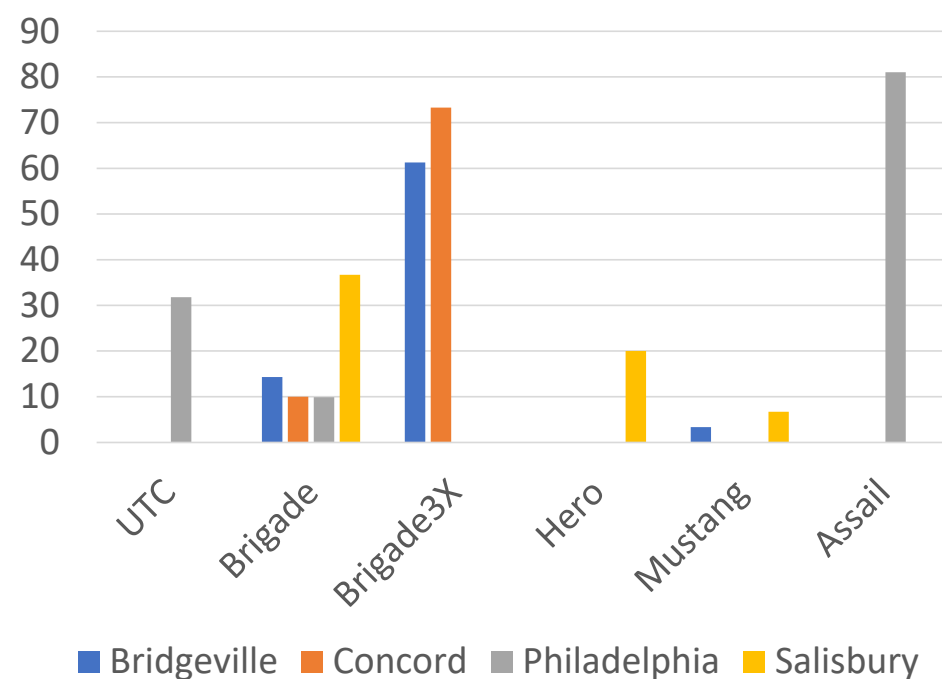
- Collected beetles from several locations
- Treated watermelons in field, 40 GPA



Why Are They Still Here?

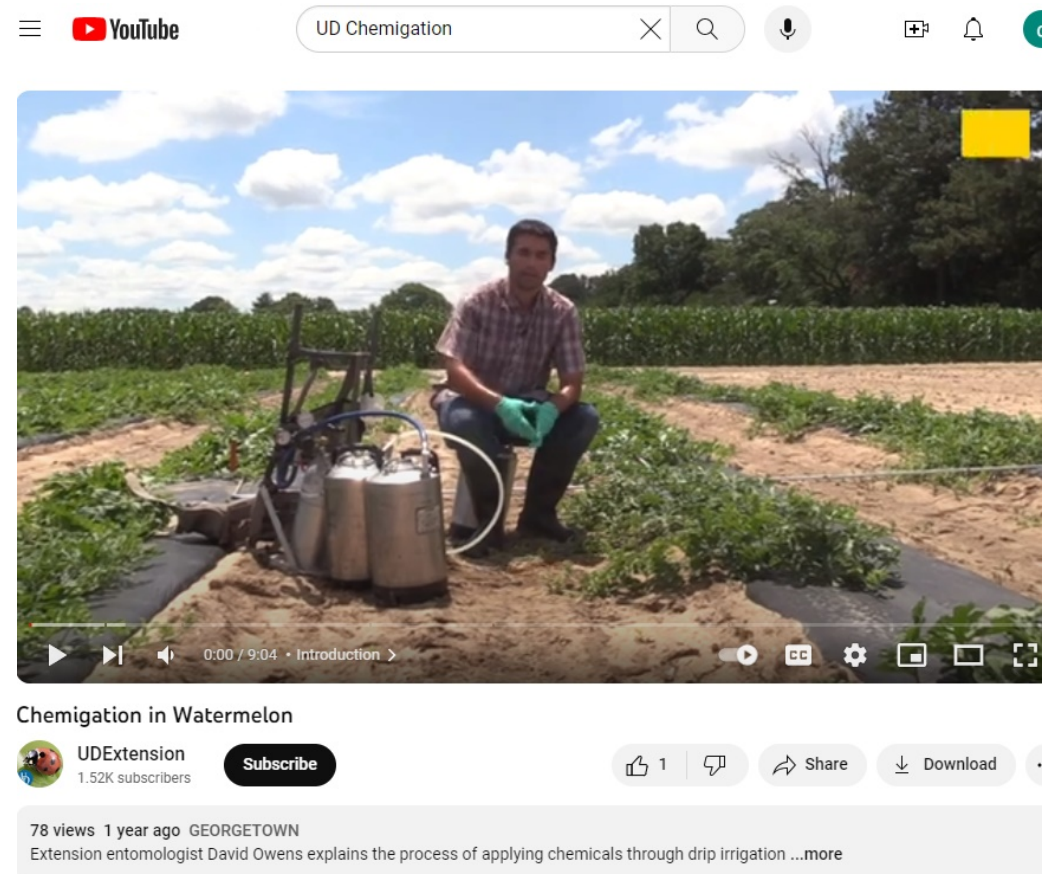
- Appear to be having widespread, poor pyrethroid performance
- Does not mean that this is true of the entire mid-Atlantic region
- A cautionary note will be in the 2024/2025 Vegetable Guide

24 Hr% Mortality and Morbidity



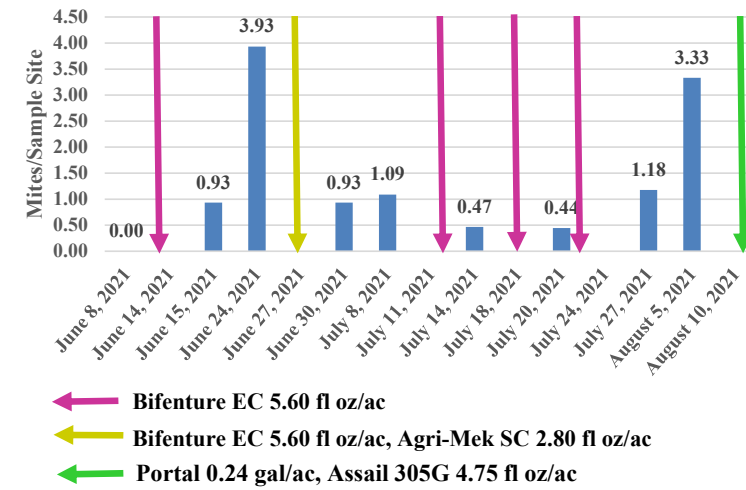
Chemigation Can Help IF Done Properly

- Product per 1,000 row ft drip
- Essentially the whole acreage concentrated into the drip
- NOT a banded application



Is The Problem An Opportunity?

- A threshold application reduce insecticide sprays 1-7x, increased pollinator visits 60%, yielded 49% more melons



Journal of Applied Ecology



RESEARCH ARTICLE

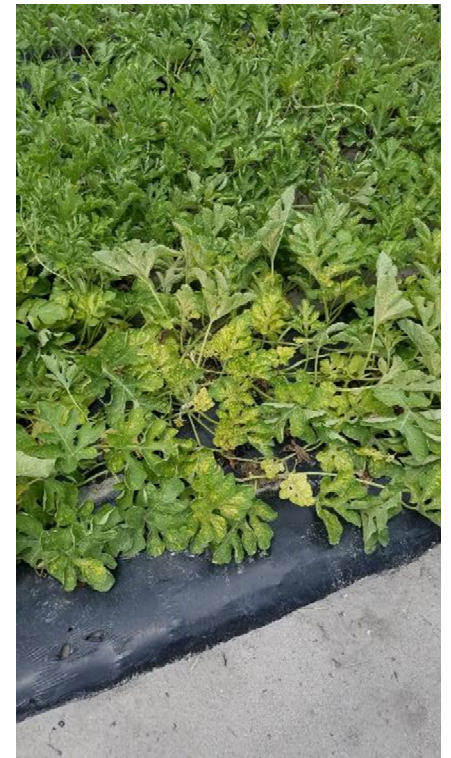
Does IPPM bear fruit? Evaluating reduced-risk insecticide programmes on pests, pollinators and marketable yield

Ashley Leach✉, Jacob Pecenka, Ian Kaplan

First published: 15 September 2022

<https://doi.org/10.1111/1365-2664.14294>

Pyrethroids Flare Up Mites

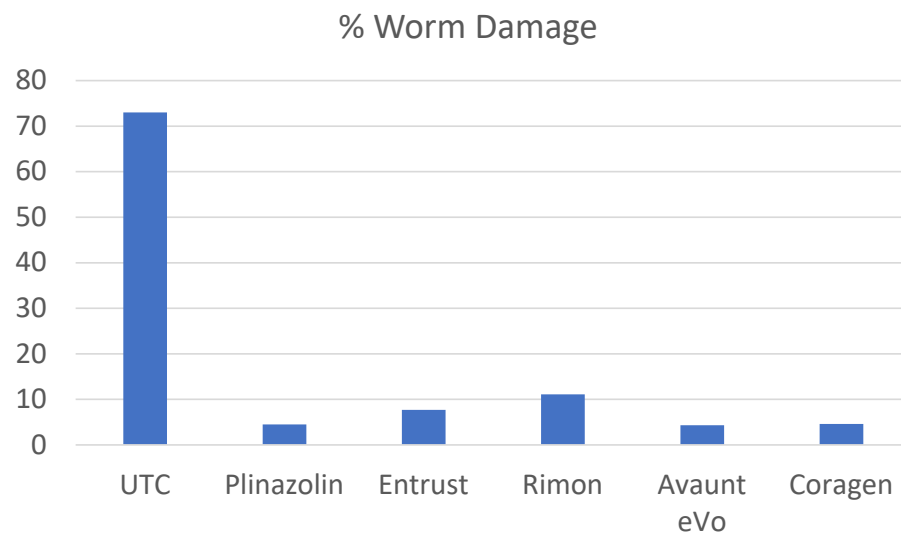


Tomatoes

- Corn Earworm is the most important pest in mid/late August – end of September
- Greatest threat is to blooming crops
- Use high pressure, high gallonage
- Do not rely on pyrethroids



- What happens when tomatoes bloom in mid-August
- Harvested 4 times, 5,000 tomatoes

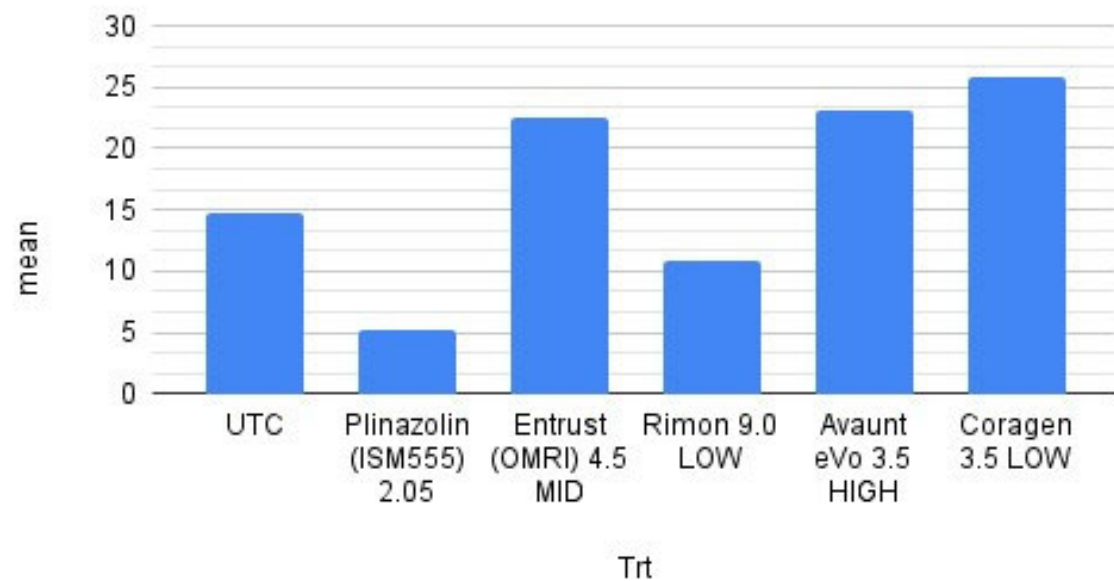


Tomato 2023 CEW

- Possible Plinazolin suppression. Trial was not for stink bug, and quite likely that a stink bug material would perform better with 4 applications. BUT to have a very good worm product also get SB's is interesting



Percent with Hemiptera damage



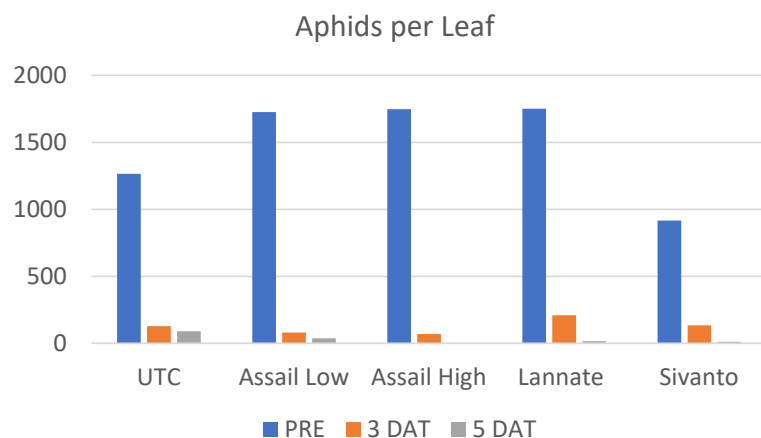
Melon Aphid Outbreak 2022

- Know your aphids
- Yellow = Melon aphids
- Green = Corn leaf aphid or Green peach aphid
- Straw color and Round = Parasitized
- Dark Green with Red Bum = BCOA



Aphid Control in Sweet Corn

- Sivanto Prime and Transform with 7 day PHI
- Assail 2.1 – 2.9 oz, 1 day PHI; labeled for up to 5.3 oz for sap beetles, PHI = 7 d
- Assail + Bifenthrin premixes available



Got Other Aphids?



Insecticides for aphid control on vegetables

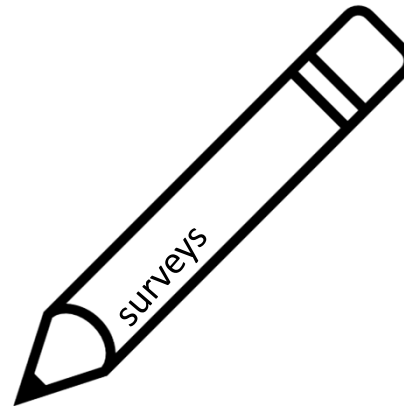
Authored by Tom Kuhar, Helene Doughty, Kelly McIntyre (Virginia Tech); Jim Walgenbach (NC State); David Owens (University of Delaware); Kris Holmstrom (Rutgers); Brian Nault (Cornell University); Tom Bilbo (Clemson University).

Recommended insecticide treatment* Aphid Management in Produce Crops - 2022							
Relative Efficacy Index For Aphids							
Product	IRAC MOA	Green peach aphid	Potato aphid	Melon aphid	Pea aphid	Foxglove aphid	Cabbage aphid
Lannate	1A						
Dimethoate	1B						
Orthene	1B						
Pyrethroid	3						
Imidacloprid/Admire	4A						
Actara/Platinum	4A						
Assail	4A						
Transform	4C						
Sivanto	4D						
Senstar	7C+23						
PQZ	9B					**	
Fulfill	9B						
Versys	9D					**	
Sefina	9D						
Torac	21A						
Movento	23						
Exirel/Verimark	28						
Harvanta	28						
Beleaf	29						
	Good residual control	* Always consult the label before applying any of these products on leafy vegetables or cole crops.					
	Marginal control; suppression						
	Poor control	** Has activity, but best control achieved on smaller, open plants					

* Recommendations based on John Palumbo's aphid control ratings in an article in American Vegetable Grower, December 2021 (Meister Media), as well as a consensus of entomologists (Tom Kuhar, Helene Doughty, Kelly McIntyre [Virginia Tech], Jim Walgenbach [NC State], David Owens [University of Delaware], Kris Holmes [Utah State], Brian Nault [Cornell University], Tom Bilbo [Clatsop University]).

Surveys 😊

- Insect Trapping Survey – SWEET CORN GROWERS PLEASE FILL OUT
- Extension Outreach Survey



Acknowledgements

- USDA NIFA CPPM EIP 2021-70006-35651
- 2023 Crew: **Morgan Malone**, Calista Turman, Irene Ernest, Danielle Watkins, Jase Hudson, Richard Monaco
- Industry Support
- Sussex County Council
- DDA Specialty Crop Block Grant : Insect Trapping Network

