

Maggots, Worms and Bugs, Oh My!

Daivd Owens and Joe Deidesheimer

Delaware AgWeek

owensd@udel.edu



Peas and Beans - Maggots

- Seedcorn maggot is the most important early season insect pest
- Overwinter as pupae in soil. Emergence dependent on growing degree days.
- Begin developing at 39 degrees



Seedcorn maggot

- ~ 354 GDD (base 39) = peak adult emergence
COULD be different in our area (soil vs air temp)
Typically between the 4th week of March and April 10

~First generation adults again at 1080 degree days
Typically around 1st week of May

<https://newa.cornell.edu/seedcorn-maggot> (coming soon)



Seedcorn Maggot

- LOVES tilled up organic matter – cover crop, manure
- Field at greatest risk up to 3 weeks post incorporation – flies lay eggs, maggots nearly finished with development
- Warm soil = faster crop growth, less maggot impact
- UD trials: spread manure at predicted peak fly emergence, till in cover crop/weeds, plant 5-7 days later. Pray for warmish weather after incorporation and light rain and cool weather after planting. Spread wet dogfood over plots, watch clouds of flies descend on plots



Seedcorn Maggot

2020 diazinon



2020 Cruiser seed treatment

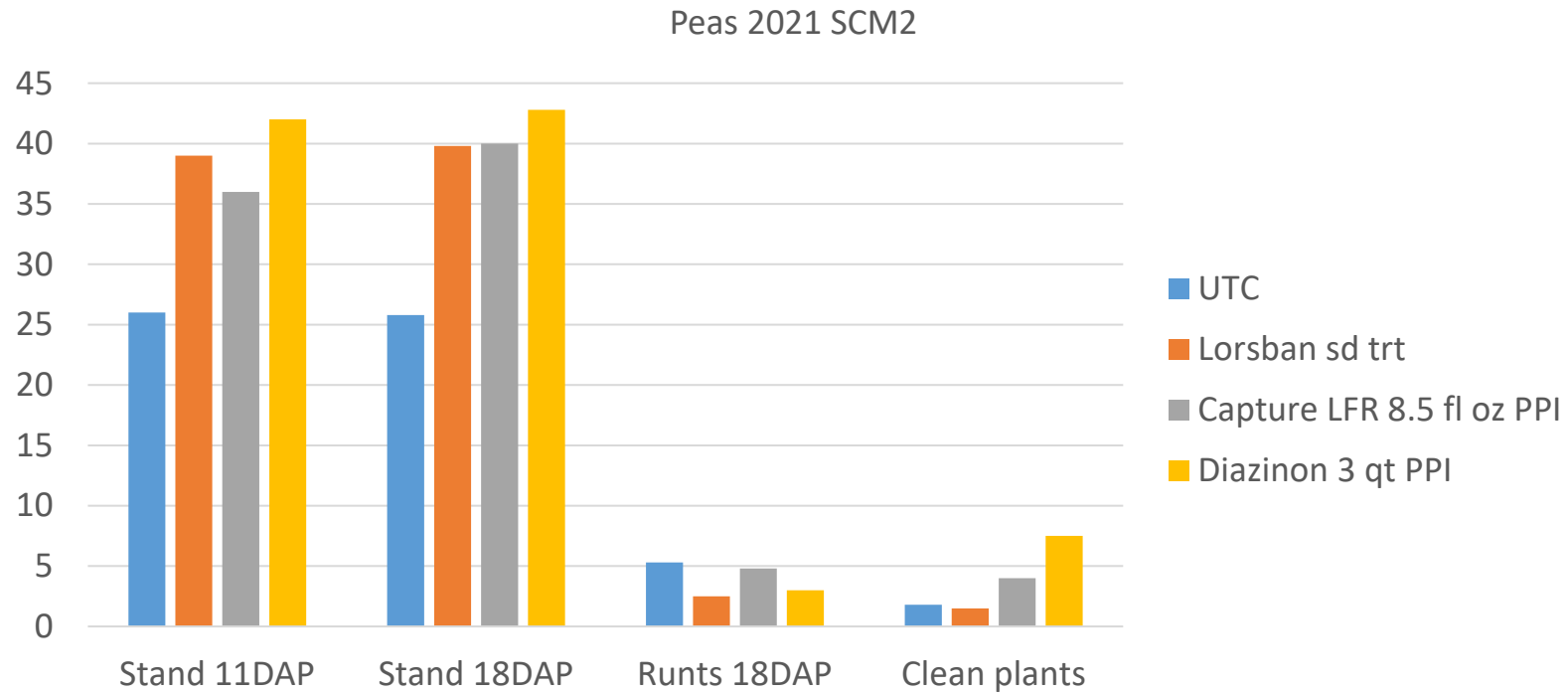
2020 planted DEEP!



Seedcorn Maggot 2021

- April 6 and May 10
- Evaluating other seed treatment candidates for SCM management – losing chlorpyrifos, in NY losing neonics
- New chemistry promising, promising results with spinosad
- May 10 – Variability in stand!

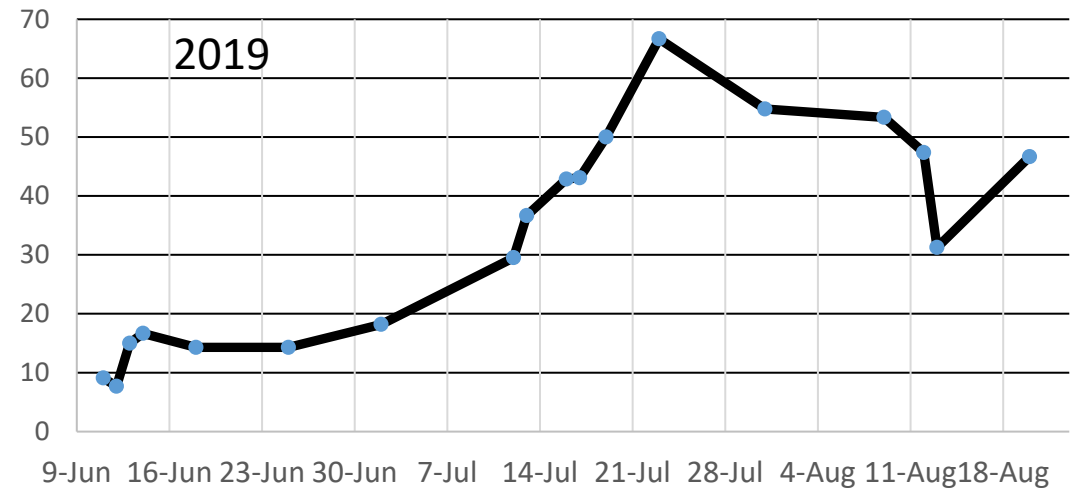
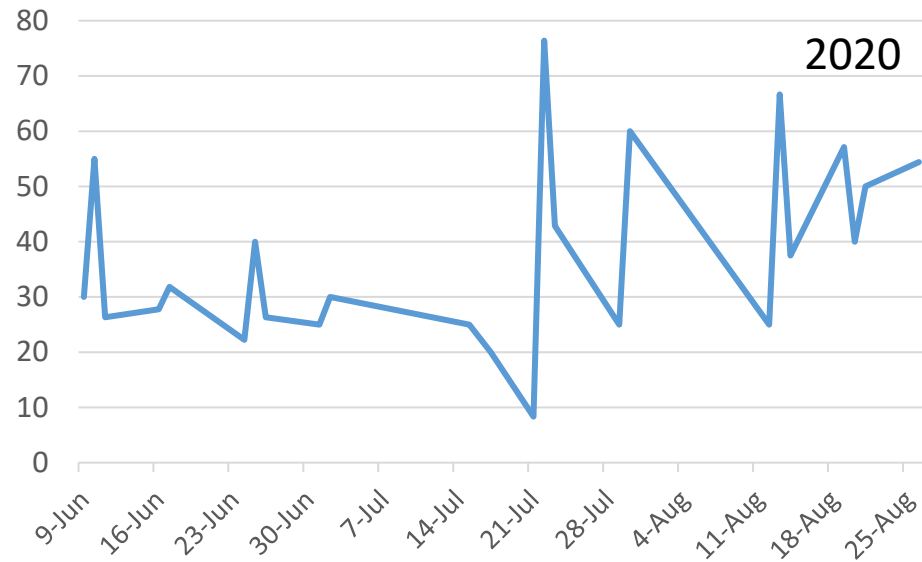
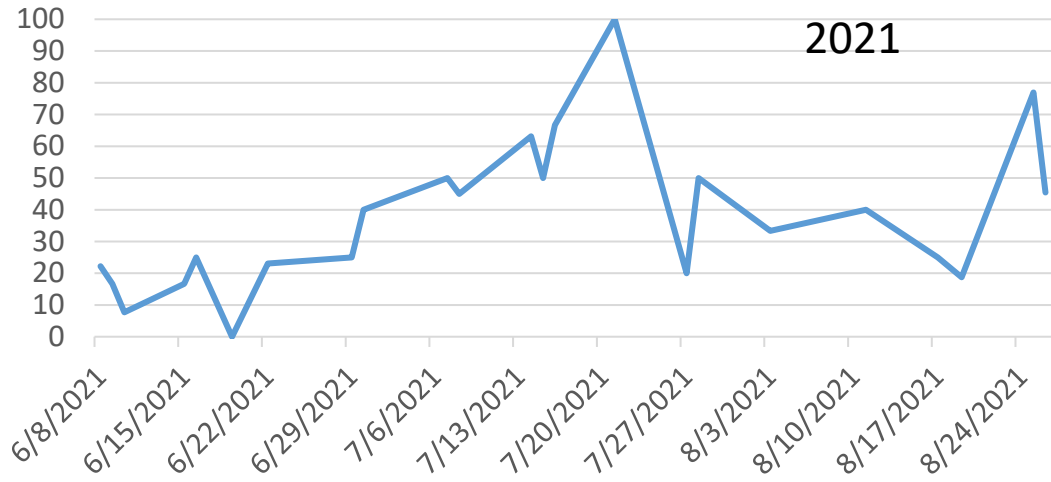
Lorsban significantly fewer runts, Diazinon more ‘clean plants,’ interesting results with Capture LFR PPI; yield/50 plants did not differ



Worms!

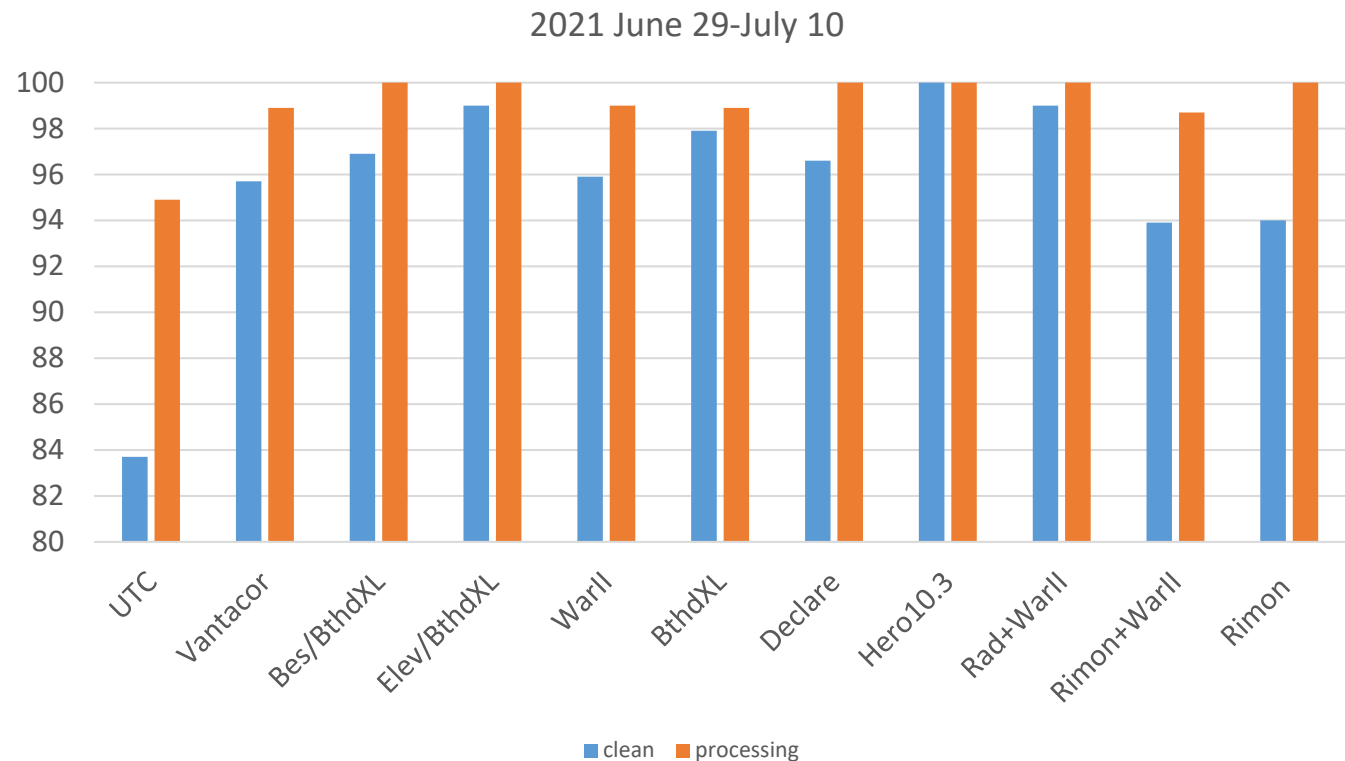
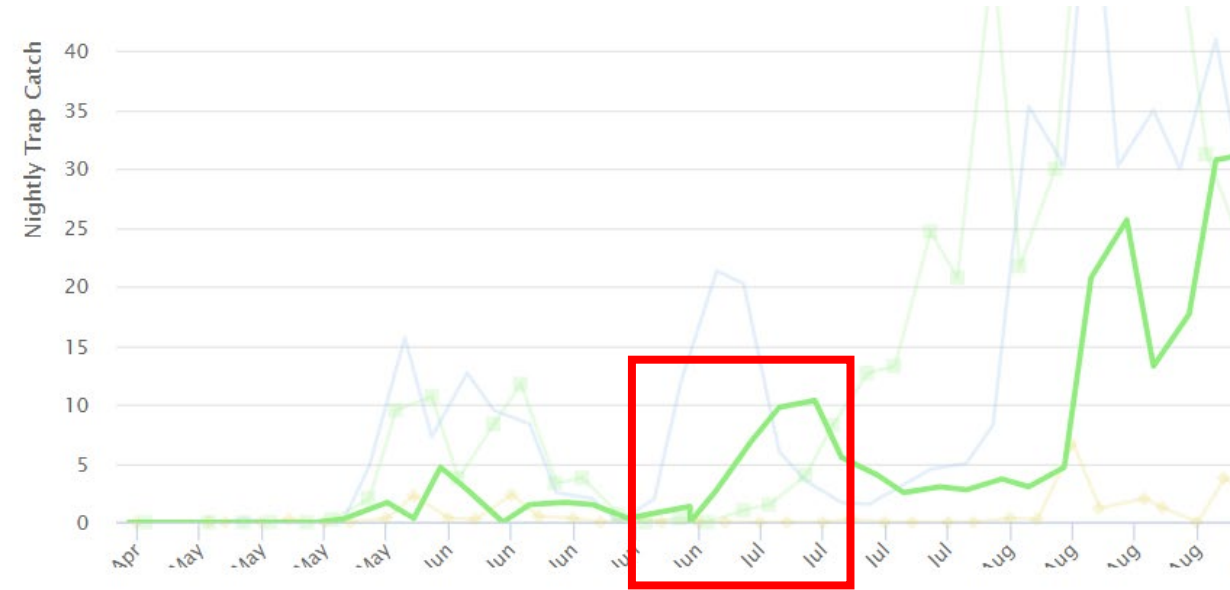


Corn Earworm Pyrethroid Susceptibility



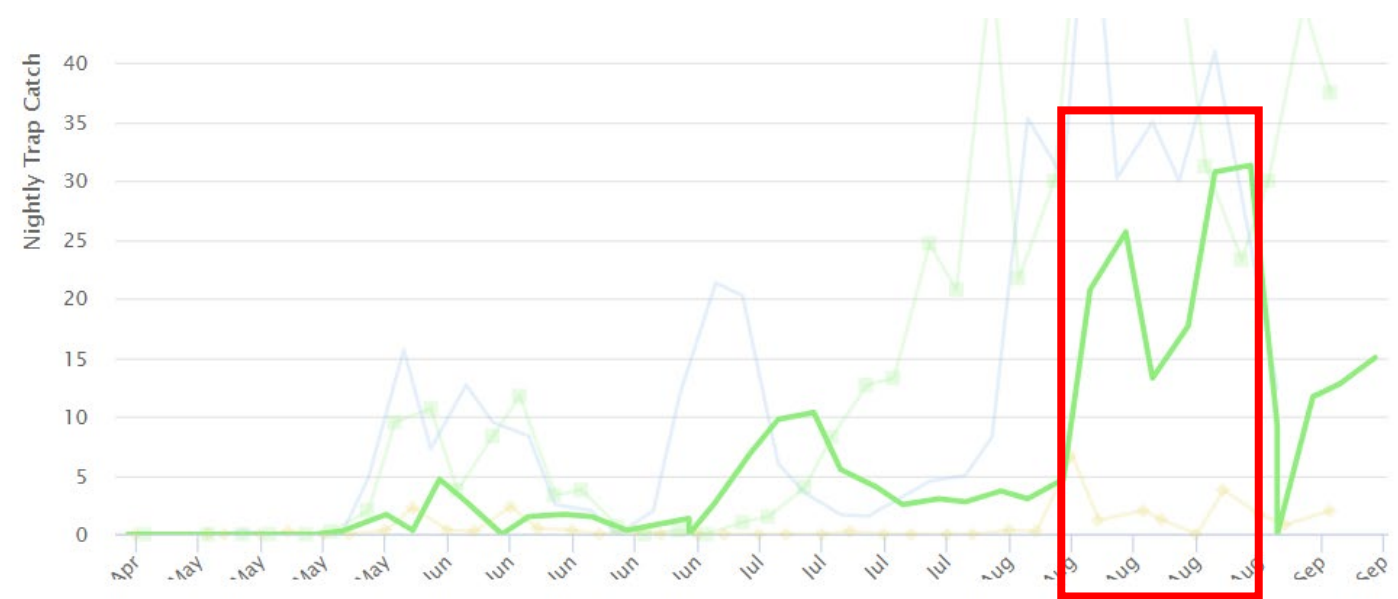
CEW Spray Trials 2021: 1

- 'Awesome'
- Low-moderate CEW, treated June 29 – July 10, 4 applications
- Harvested 15 July
- Best treatments: Bes/Bthd, Elev/Bthd, *Declare*, Hero, Rad+War, *Rimon+War*
- Biggest Takeaway: spray timing conservative early, Pyrethroid performance very good

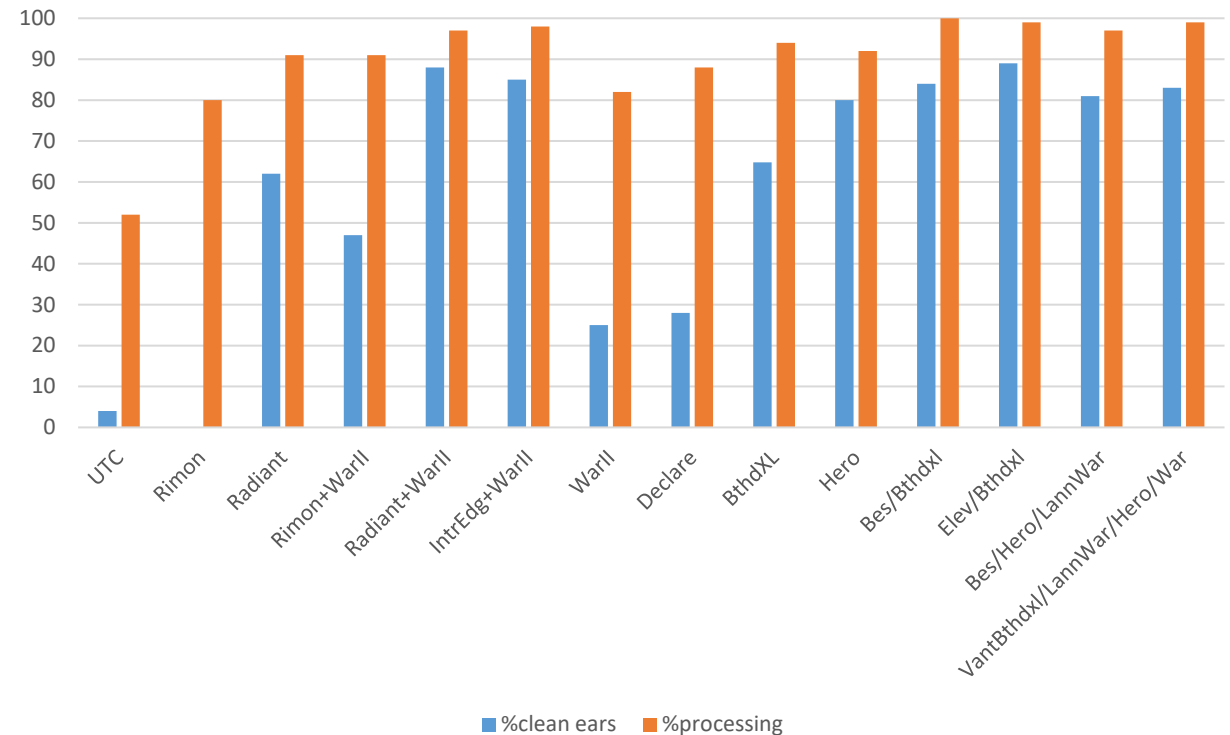


CEW Spray Trials 2021: 3

- ‘American Dream’
 - Moderate-high CEW, treated Aug 20 – Sept 4, 6 applications
 - Harvested 7 Sept
 - Treatments initiated at 50% silking
-
- Among pyrethroids: Hero>BthdXL>War=Decl
 - Pyrethroid tank mixes: Radiant+War and Intrepid Edge + War performed well
 - Bes/BthdXL and Elevest/BthdXL simple schemes performed as well as some more complex schemes



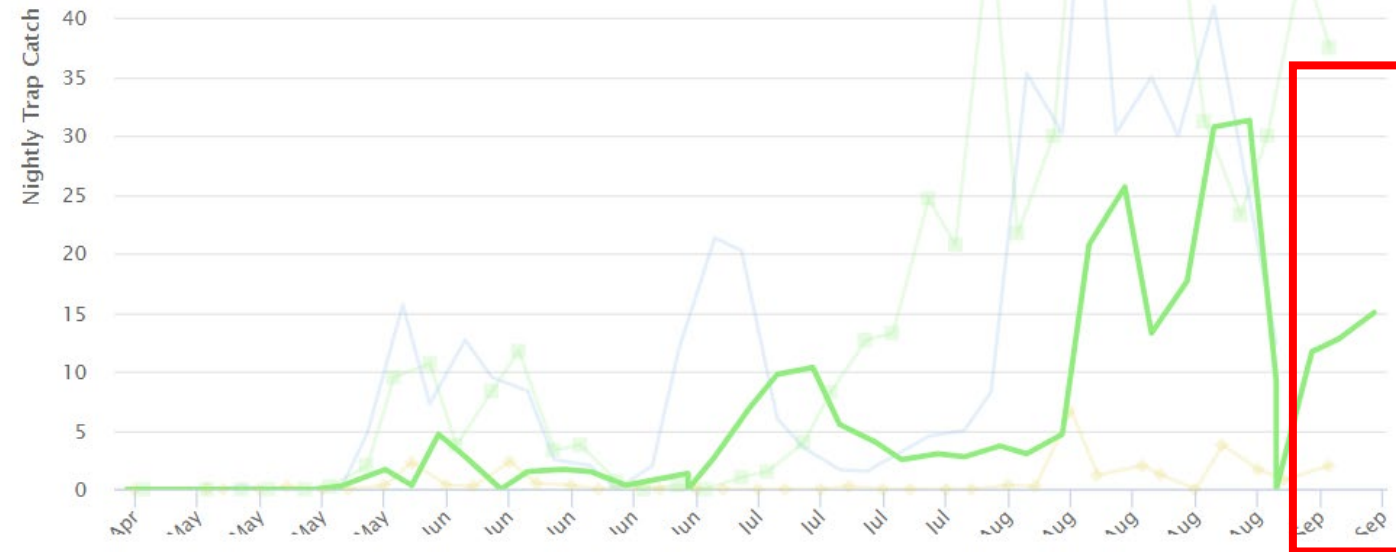
‘American Dream’ CEW3



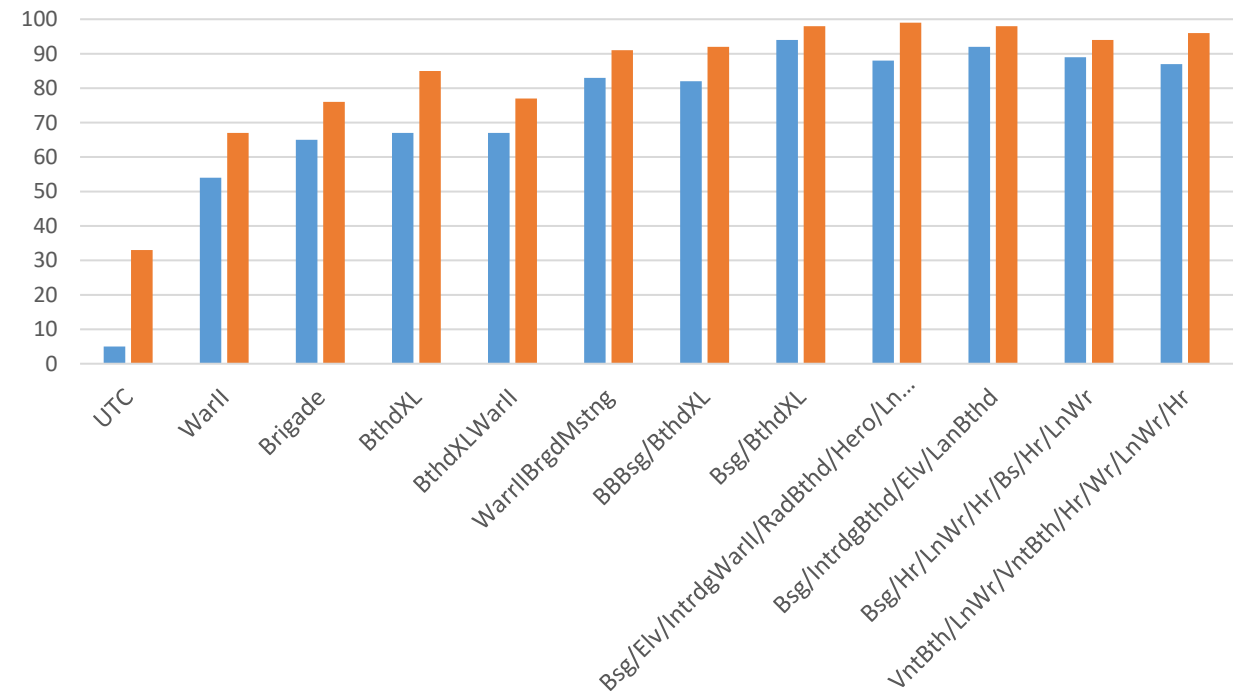
CEW Spray Trials 2021: 4

- ‘Overland’
- Moderate CEW, treated Sep 4 – Sep 19; 6 applications
- Harvested 24 Sept
- Treatments initiated at 25% silking

- Among pyrethroids: Bthd=Brgd > Wrr, multi pyrethroid mixes: 3 way low > 2 way high
- Bes/Bthd slightly but not significantly better than Bes x 3/Bthd x 3
- Bes/Bthd as well as multi component schemes
- Initiating prior to silking = no improvement



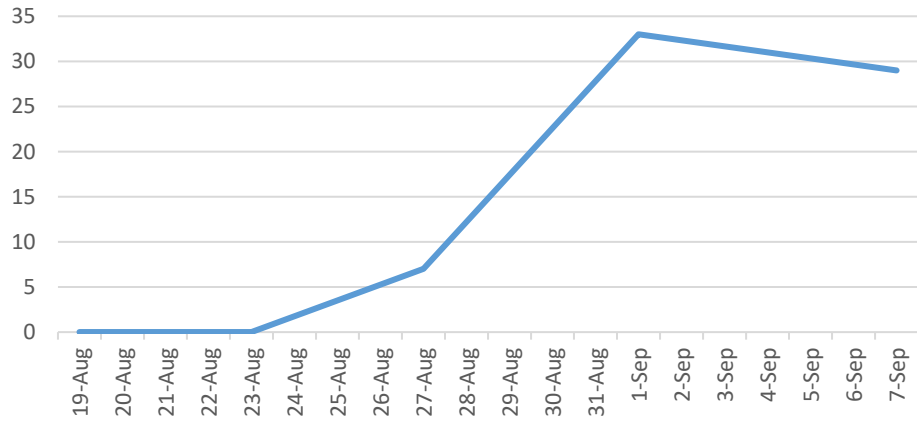
Overland Sept4-Sept19



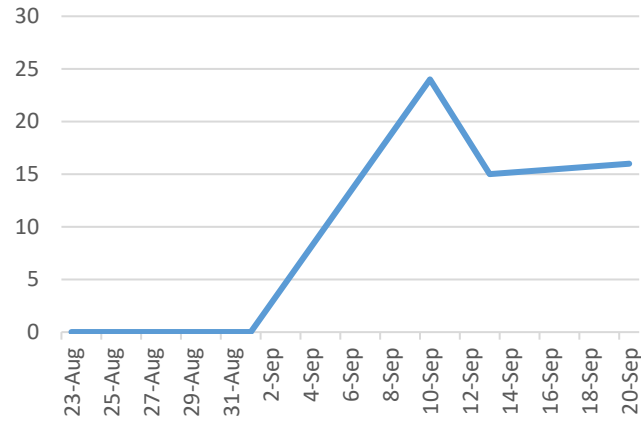
Worms in Hemp

- CEW is THE pest of Hemp; Hemp even more attractive than sweet corn for moths

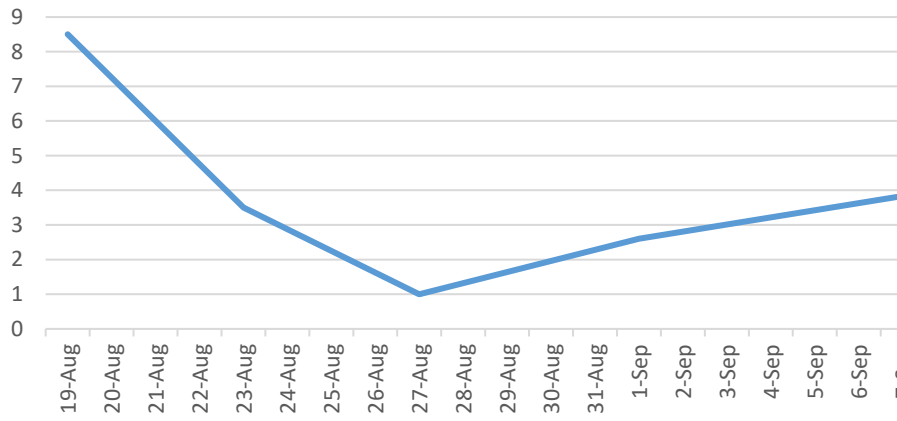
Location 1 CEW/30 buds



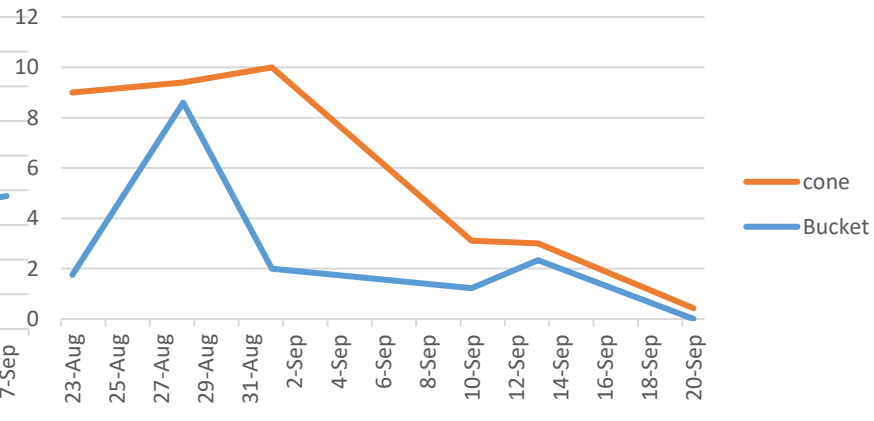
Location 2 CEW/30 buds



Nightly CEW capture, bucket trap Location 1



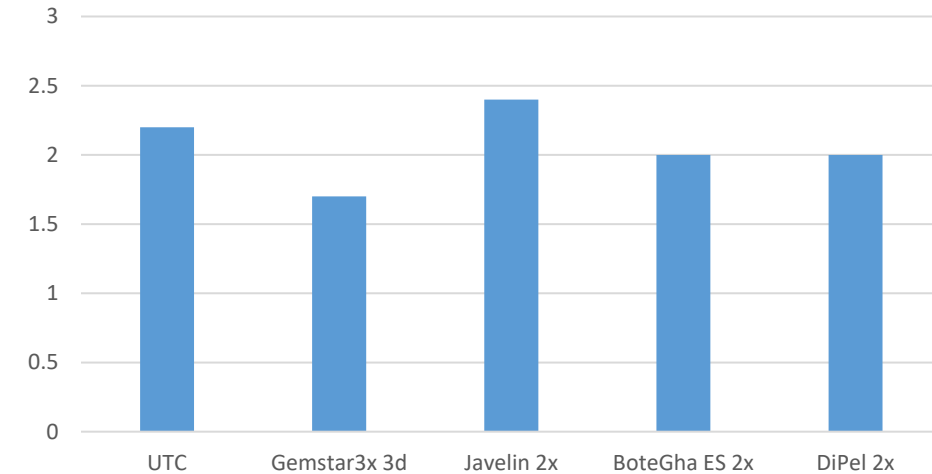
Nightly CEW capture, Location 2



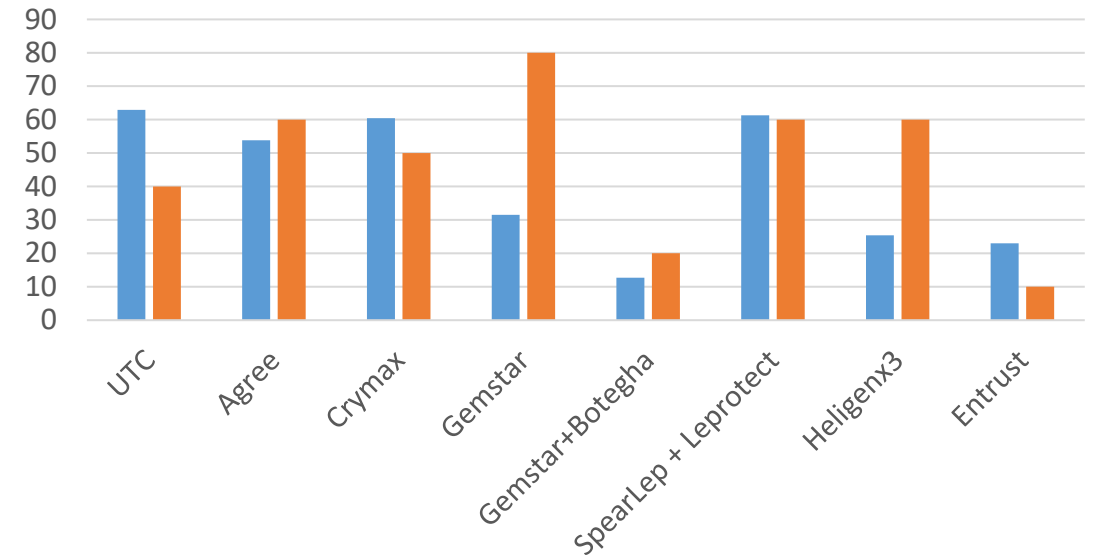
Worms in Hemp

- Trials by Tom Kuhar, VT
- Without conventional chemistry, options are poor
- Bt and viruses alone don't perform well
- Gemstar + BoteGHA decent 2019 trials

CEW Damage Ratings



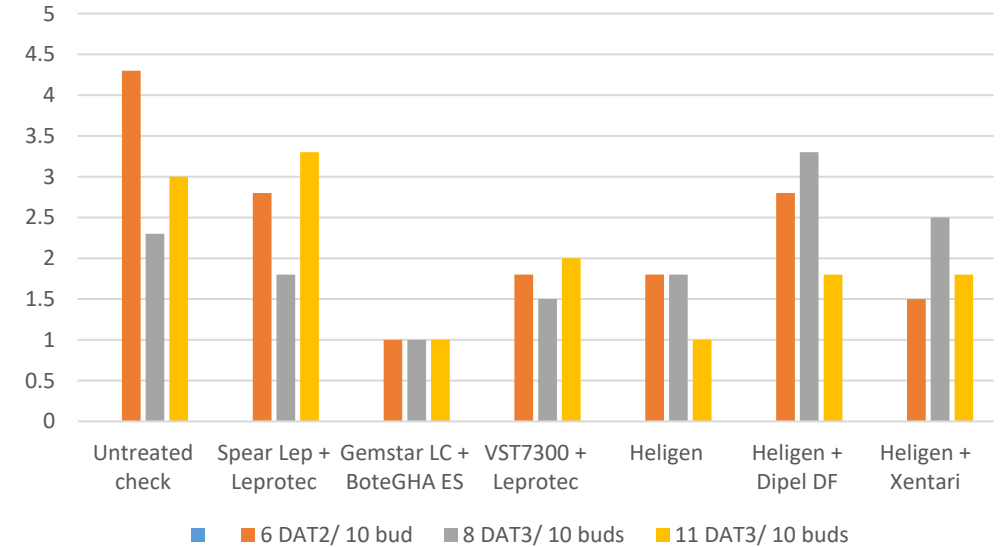
Cumulative CEW % Bud Rot



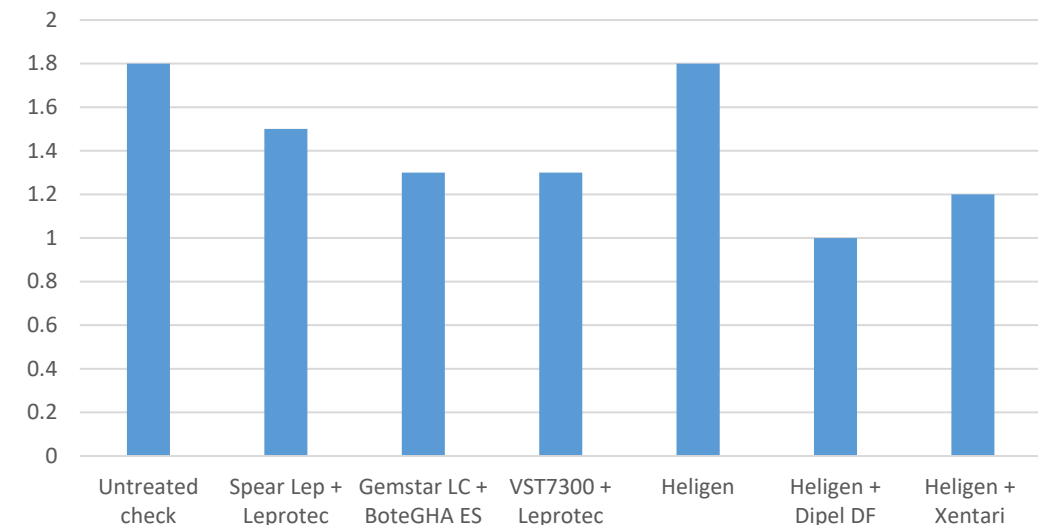
Worms in Hemp

- 2021 trials = NS
- High water volume, apply at dusk
- At this time...harvest early?
- Simon Zebelo at UMES evaluating trap crop options – preliminary results suggest hemp is the trap.

2021 Hemp Trials VT ESAREC, T. Kuhar; NS

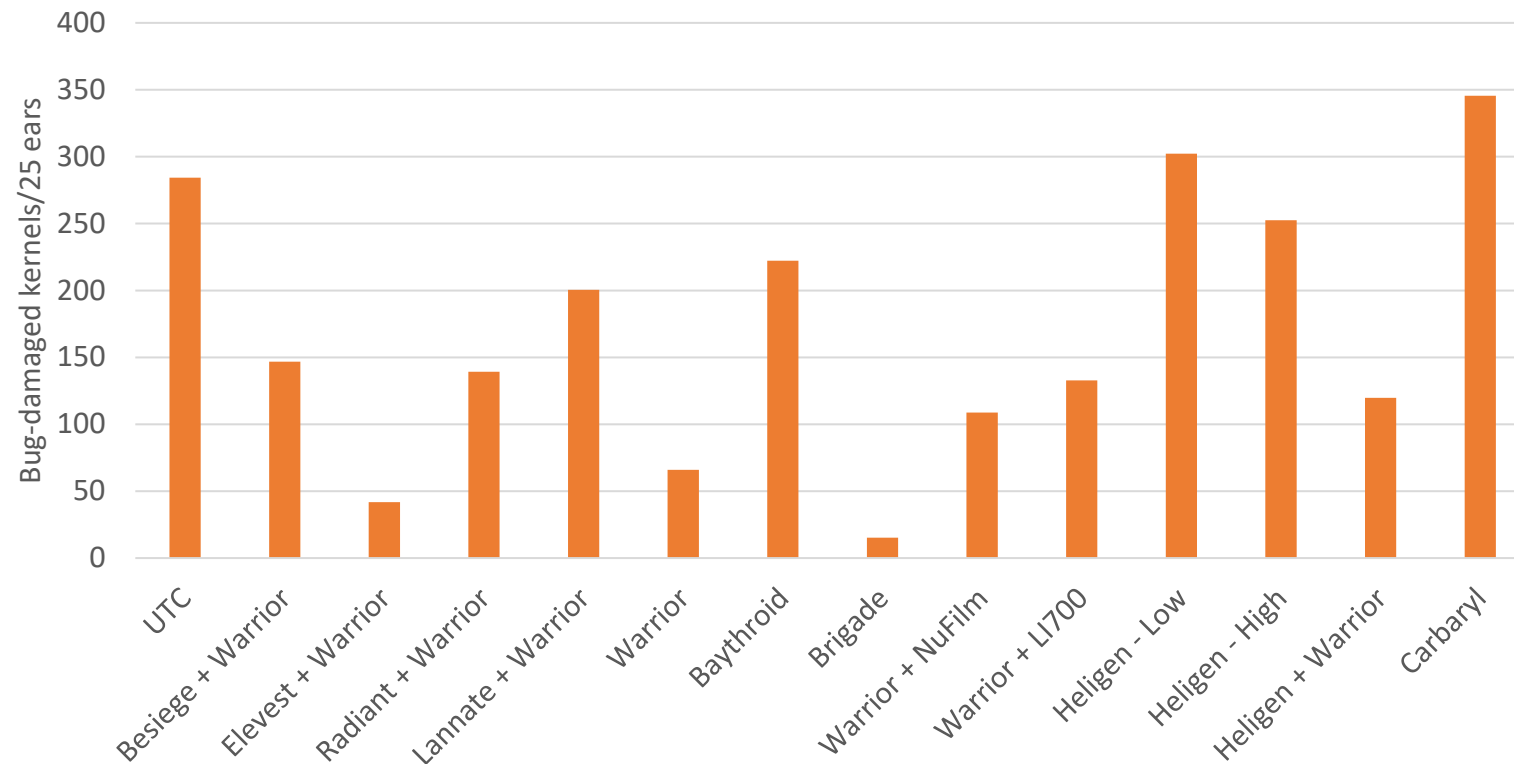


Damage Ratings - NS



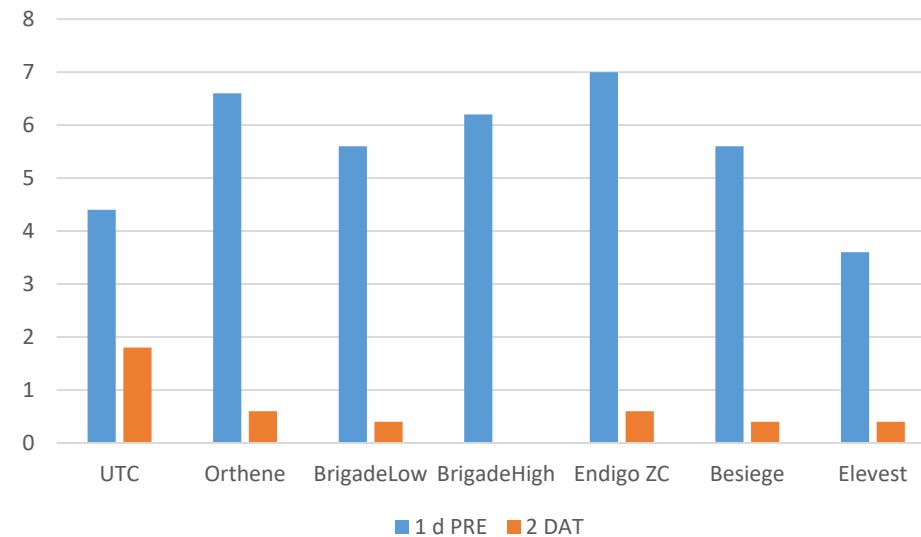
Bugs – corn

Bug damage particularly severe in 2020 sweet corn ‘Overland’ trials
Husks loose, tips on many plants partially exposed



Bugs – soybean trial

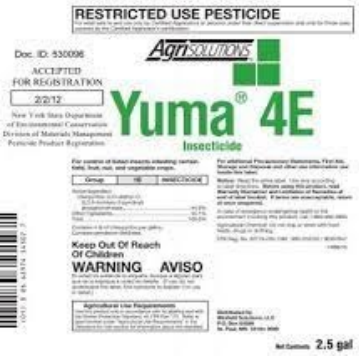
- Field was treated on 30 August, plots treated 31 Aug



Bugs in Lima Beans

- TPB Threshold: 15/50 sweeps from pin to harvest; SBs: 7/50
- Best materials are Beleaf and Transform; dimethoate, pyrethroids labeled





OH My! Chlorpyrifos Urgent Update



- <https://www.epa.gov/ingredients-used-pesticide-products/frequent-questions-about-chlorpyrifos-2021-final-rule#question-8>
- Food tolerances expire **Feb 28, 2022**
- Non ag, non-food uses can continue, but are also being reviewed (~Oct. 2022).
- Application to fruit tree bark is allowable IF trees do not and will not have fruit on them for 1 year after application



Chlorpyrifos Urgent Update

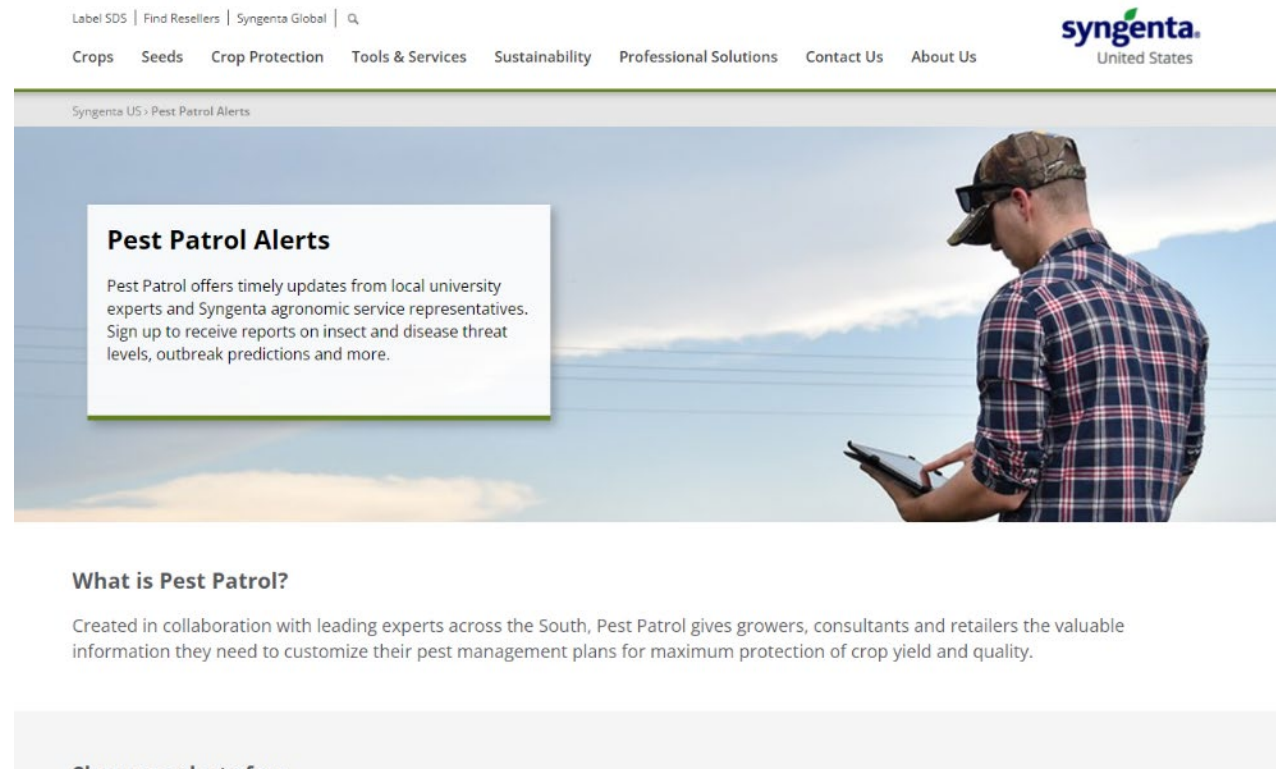
- Due to the potential contamination of live poultry from Chlorpyrifos that could produce trace amounts of this pesticide in processed meat, growers should not use this pesticide in areas where live meat-producing animals are raised. = POULTRY
- Crop use for EXPORT ONLY is not subject to the Final Rule.
- Existing stocks CANNOT be used on food uses
- Chlorpyrifos may be used on heifers in a cow-calf operation as long as not offered for slaughter within one year of tag removal.
- What about pea seed already treated? EPA working with FDA, check FAQ periodically. Big GRAY area.

Other updates

- Vantacor replacing Prevathon, use rate is roughly half that of Coragen's

Program Updates

- Planning to provide scouting videos on extension webpage
- Pest Patrol: <https://www.syngenta-us.com/pest-patrol>



- Insect Reports: <https://www.udel.edu/academics/colleges/canr/cooperative-extension/sustainable-production/pest-management/insect-management-reports/>

Welcome to Mike Crossley

- New ag research entomologist at UD: Mike Crossley
crossley@udel.edu



Wisconsin and Georgia, Colorado potato beetle, peanut pests

Ditch Survey



- How do ditches support beneficial insect communities?
- Can ditches be modified to enhance beneficial insects?
- Joint effort with UMD (Bill Lamp), UMES (Simon Zebelo)



Northeast
Sustainable Agriculture
Research and Education



Acknowledgements

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