

Slimy Early and Late Season Pest Management



May 1, Planted ~ March 19



Seedcorn Maggot Enemy # 1

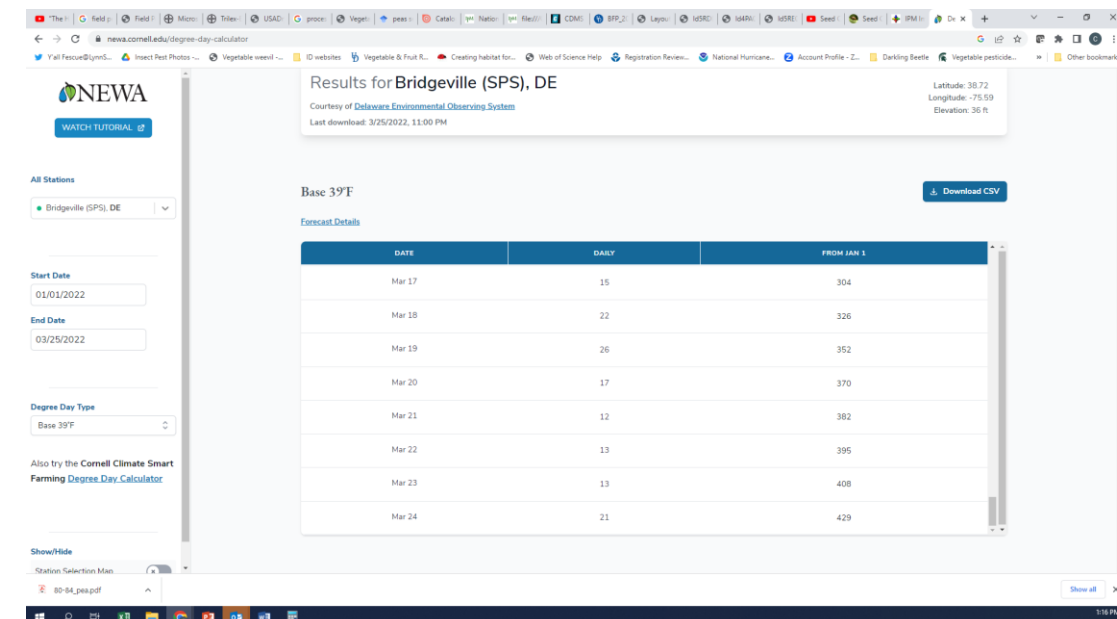
- Lost Lorsban in 2022
- Current seed treatment option: thiamethoxam Cruiser 5FS
- Soil applied options: Diazinon and Bifenthrin?
 - Diazinon AG500 labeled for wireworms and cutworms, 3 day REI, incorporate into soil immediately
- Crop Profile 2006: “up to 80% acreage, losses typically 10-15%
- Extension YouTube video:
<https://www.youtube.com/watch?v=nDhj8QTz8hw> (12 minutes)

Seedcorn Maggot Biology



Photo Jon Baker

- Pupae overwinter in soil
- Emerge ~ 360 Degree Days (base 39F, start Jan 1)
- NEWA data from DEOS to calculate degree days
- Fly activity near target degree days on warm sunny days temps above ~ 60-65 F
- Peak SCM Georgetown:
 - March 10, 2020
 - March 31, 2021
 - March 21, 2022



What Do They Like?

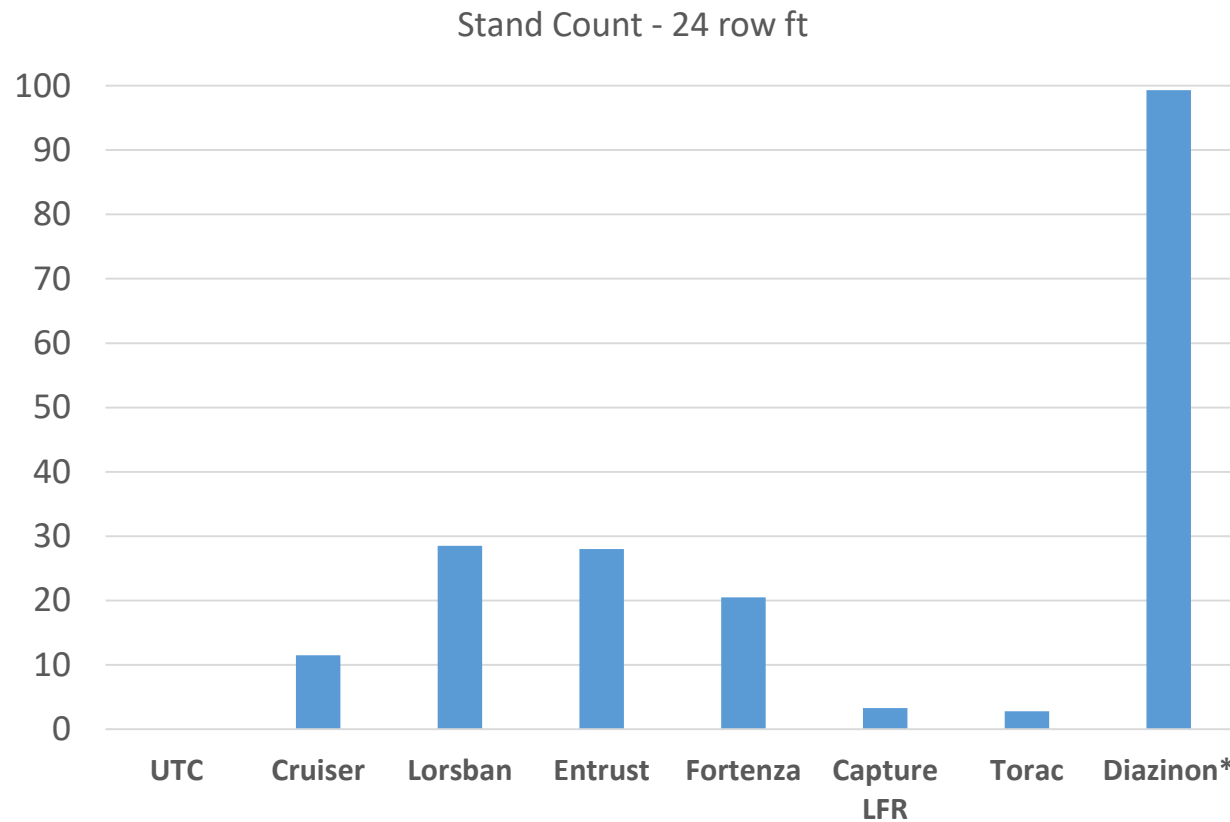


Why SCM Trials?

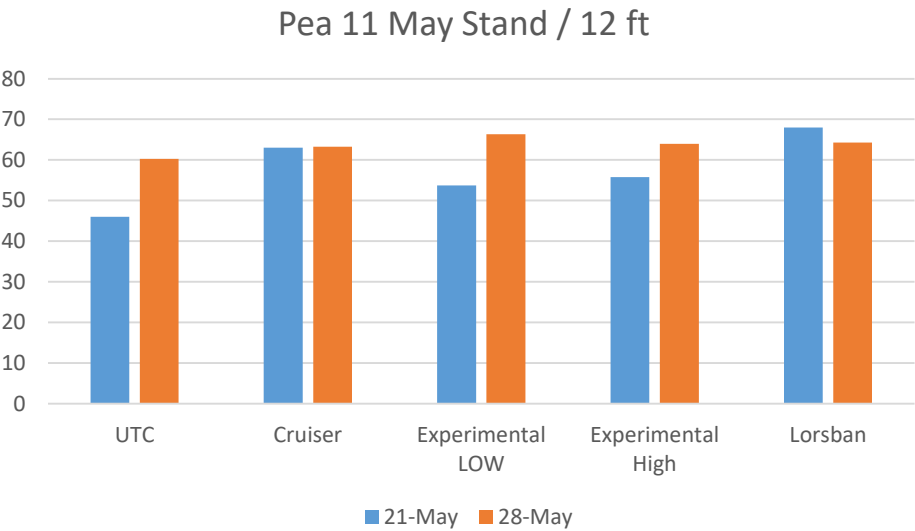
- Legislative pushes and lobbying to restrict seed treatments
- Seed treatments overused in other crops
- Lost Lorsban, Diazinon not labeled for SCM and may lose it
- Cruiser can be overwhelmed by SCM
- 3 years of seed treatment trials

2020 SCM Trial

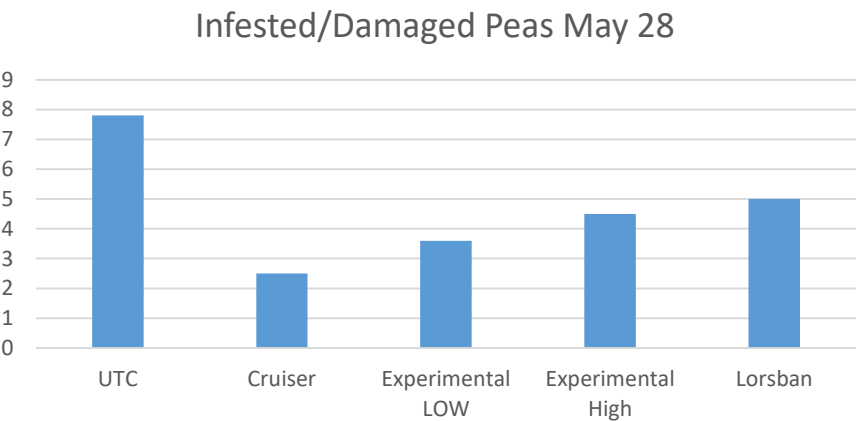
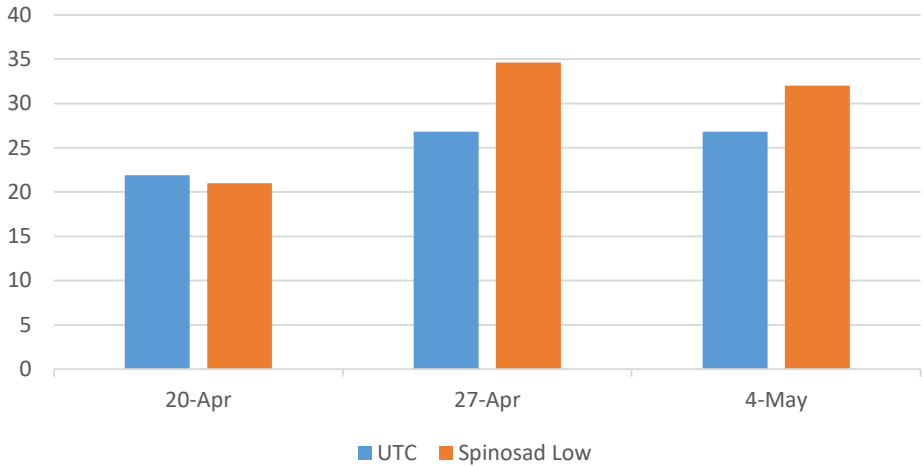
Spinosad and cyantraniliprole slightly better than Cruiser



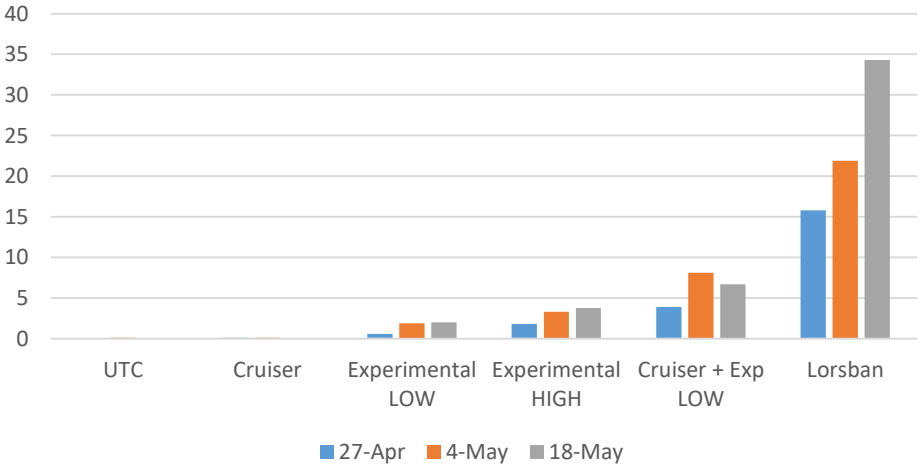
2021 SCM Trials



Sweet Corn April 6 Stand 20 row ft

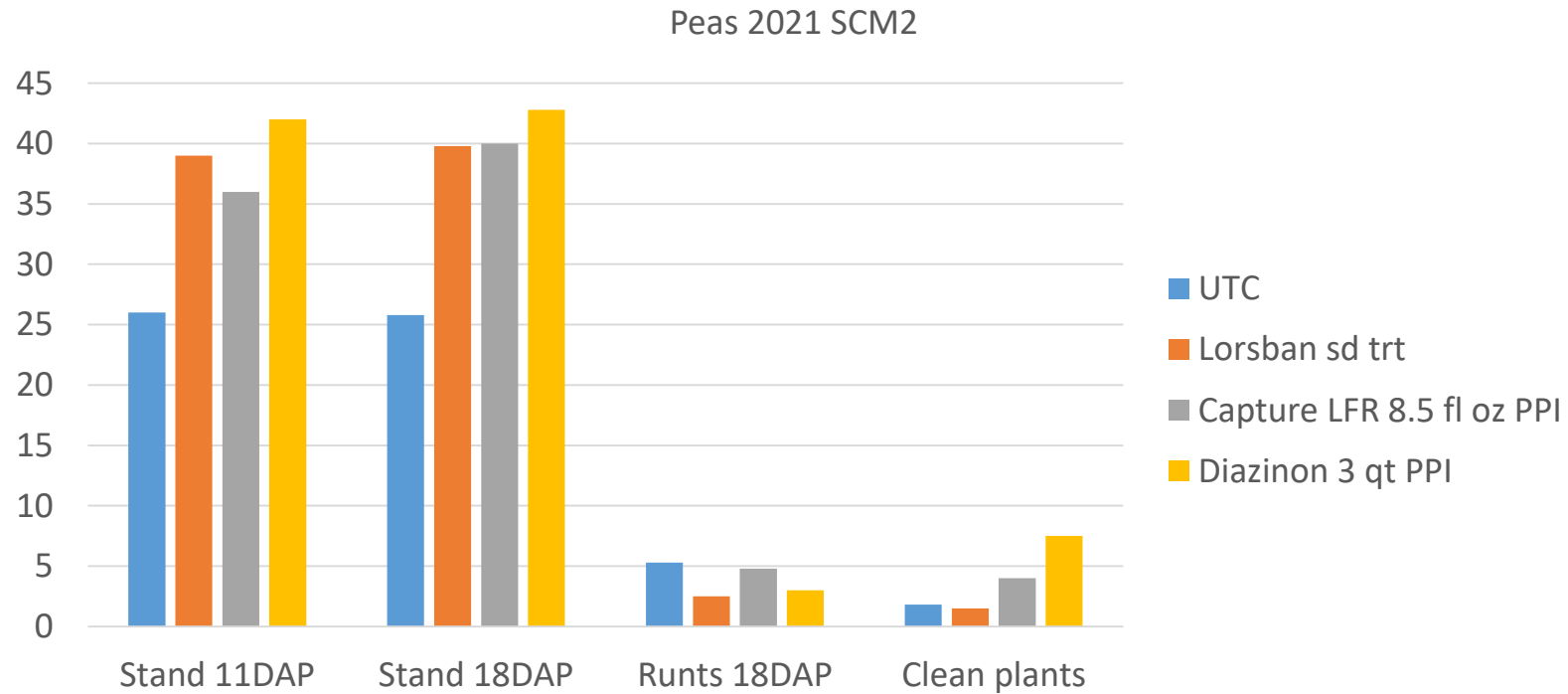


April 6 Snap Bean Stand Count 40 row ft



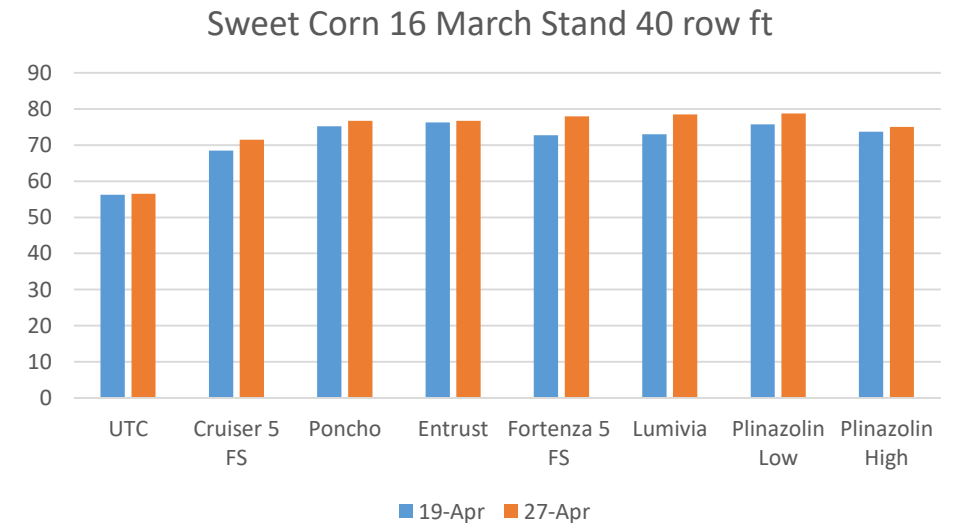
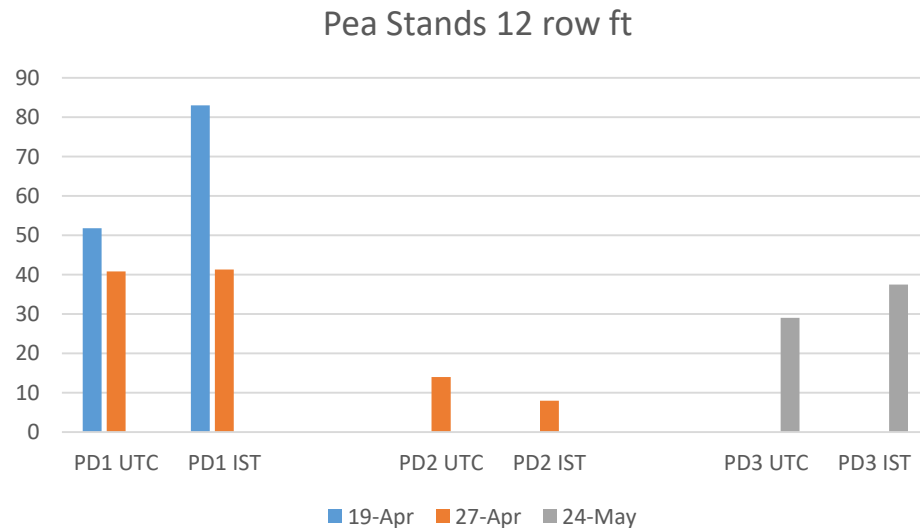
2021 SCM Trial # 2, May 10

- Warm soil, Capture LFR PPI = Lorsban seed treatment



2022 SCM Trials

- Significant damage even up to 4 weeks after incorporation
- Spinosad, Cyantraniliprole, and Plinazolin provided better sweet corn protection than Cruiser and better than Fungicide-only

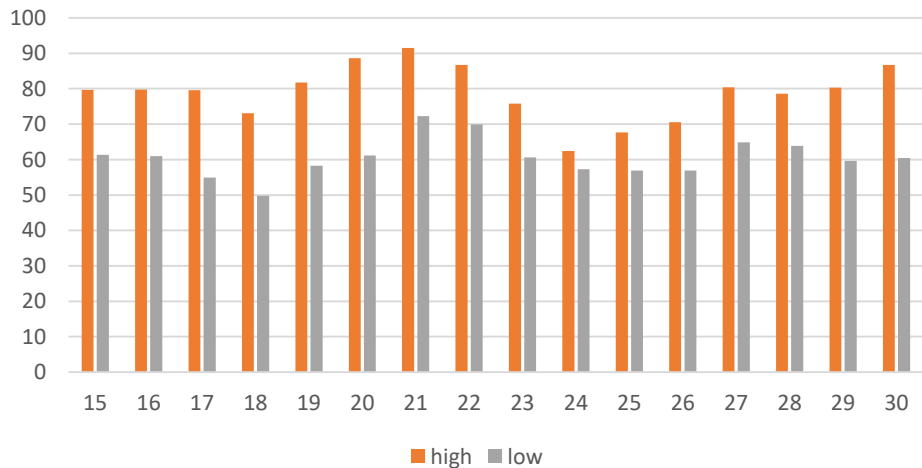


Unusually Late Activity

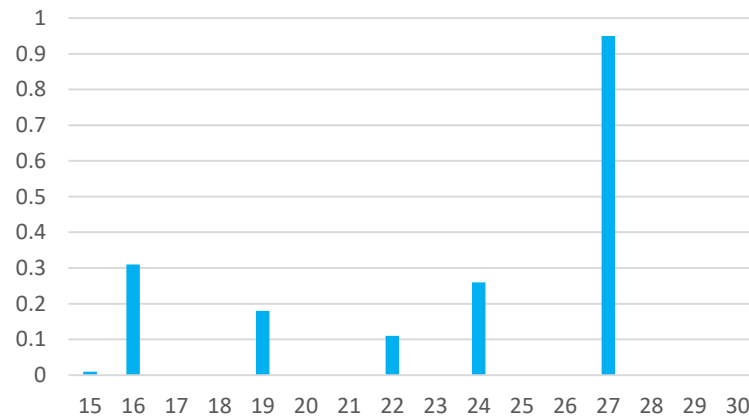


- May 23rd planted snap beans without IST
- Typically, warm soil, warm weather shuts SCM down.

Temps May 15-30

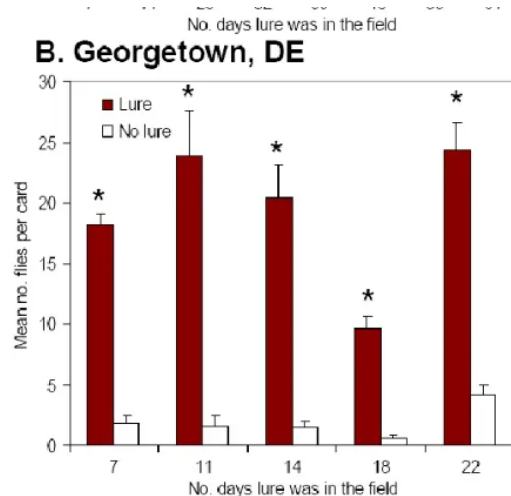


Georgetown Rainfall May 15-30



Where Do We Go From Here?

- Hard to get away from preventative treatments
- Building support for additional MOA seed trts, but cost effective?
- AgBio lure, monitoring survey of peas to match adult counts, SCM infestation and injury, and Root damage samples
- Would a broadcast treatment help a high risk planting?



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Field Evaluation of a Novel Lure for Trapping Seedcorn Maggot Adults

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Let's Not Till



Soybeans, not edamame or snap beans

Scouting For Slugs

Shelter traps – best examined in early morning hours.

Shingles

Cardboard

Shingle + pitfall trap

Single + fermenting bread dough

Varying extension recommendations – 1, 3, 5 / sq ft





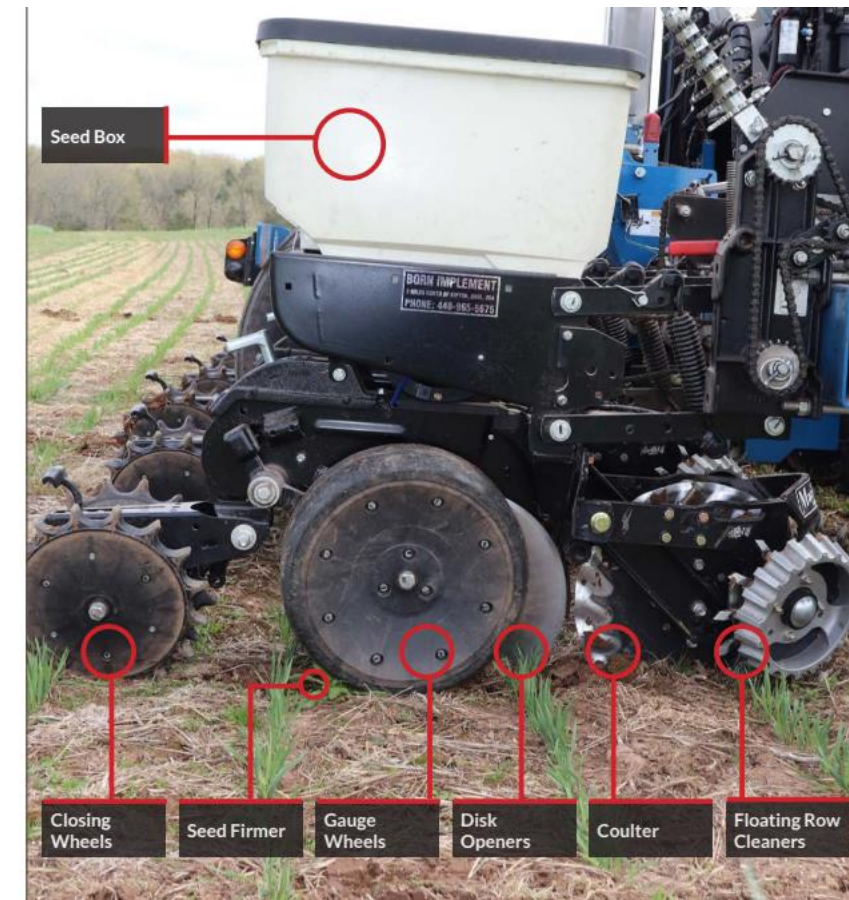
Cultural Controls: Close Seed Slots

- Seed slot is like a slug superhighway
- Seed slot is dark, moist
- Slugs have direct access to germinating seed



Cultural Controls: Take Out The Trash

- Row cleaners pushing residue away from crop – slugs aren't sheltering right at base of seedling; soil warms a little faster = faster germination
- Get that seed into the ground!



Thresholds in FIELD CORN

- PA suggests 1/ft² corn (Busch et al. 2020)
- Slug feeding on corn peaks 2-3 weeks after planting, leaf damage can be as great as 47% without significant yield loss.
 - Byers and Calvin 1994 EIL range 2-59% defoliation, depending on environmental conditions
- Soybean?
- Cool, wet conditions at planting (with or without lower plant stands) or before unifoliates expand = higher risk

Have a No-Till, High Res Field with Slugs?

- And the weather is cool, wet, cloudy?



Deadline M-PS Slug Bait Killer - 50 Pounds

[Write a Review](#)

Price: \$129.95

Model:
[5481-507]



Other Early Season Processing Pests

- Brown stink bugs favored by late termination small grain cover crop
- Scout for stink bug damage up to V6
- No thresholds for sweet corn
- Visited some fields with heavy stink bug injury in spots, hard to find!

Growth stage	Area to sample	Do not treat	Take more samples	Treat
V1 to V6	Base of plant on stalk below lowest green leaf	≤ 6	>7 to 12	≥ 13

(Photos Rick Bessin on Field Corn)



‘Slimy’ Late Processing Pest



The Chemical Toolbox: 4 MOAs

Pyrethroid (3A) cheap,
broad spectrum and formerly
very effective



Diamides (28) Narrow spectrum,
effective, longer residual, inconsistent
alone under high pressure



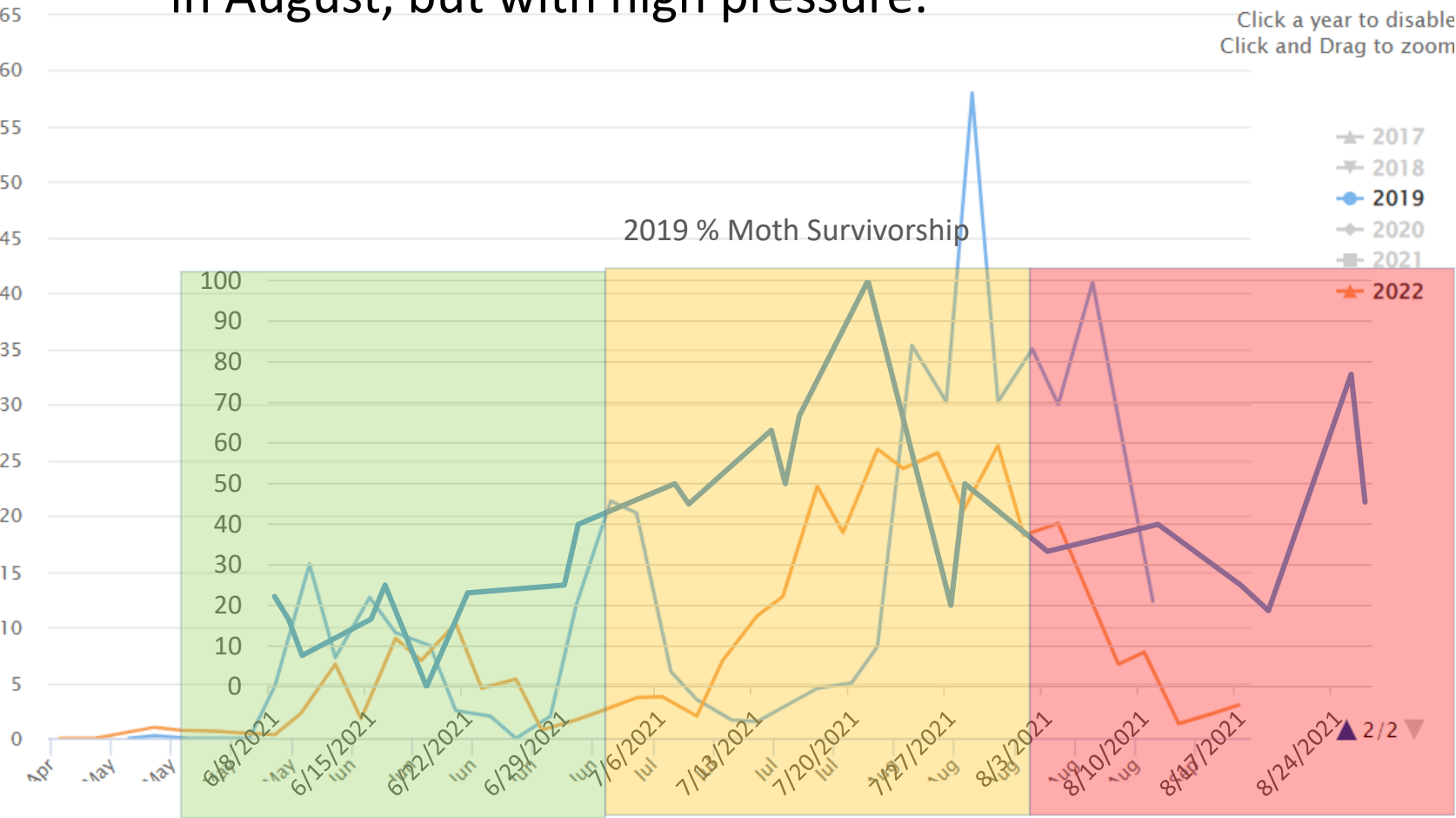
Carbamate (1A) – ovicidal,
no residual activity, high
oral and eye tox concerns



Spinosyns (5) – expensive,
will not alone control CEW
under high pressure

Pyrethroid Resistance

Moth resistance fairly low early in season, builds in mid July, plateaus in August, but with high pressure.

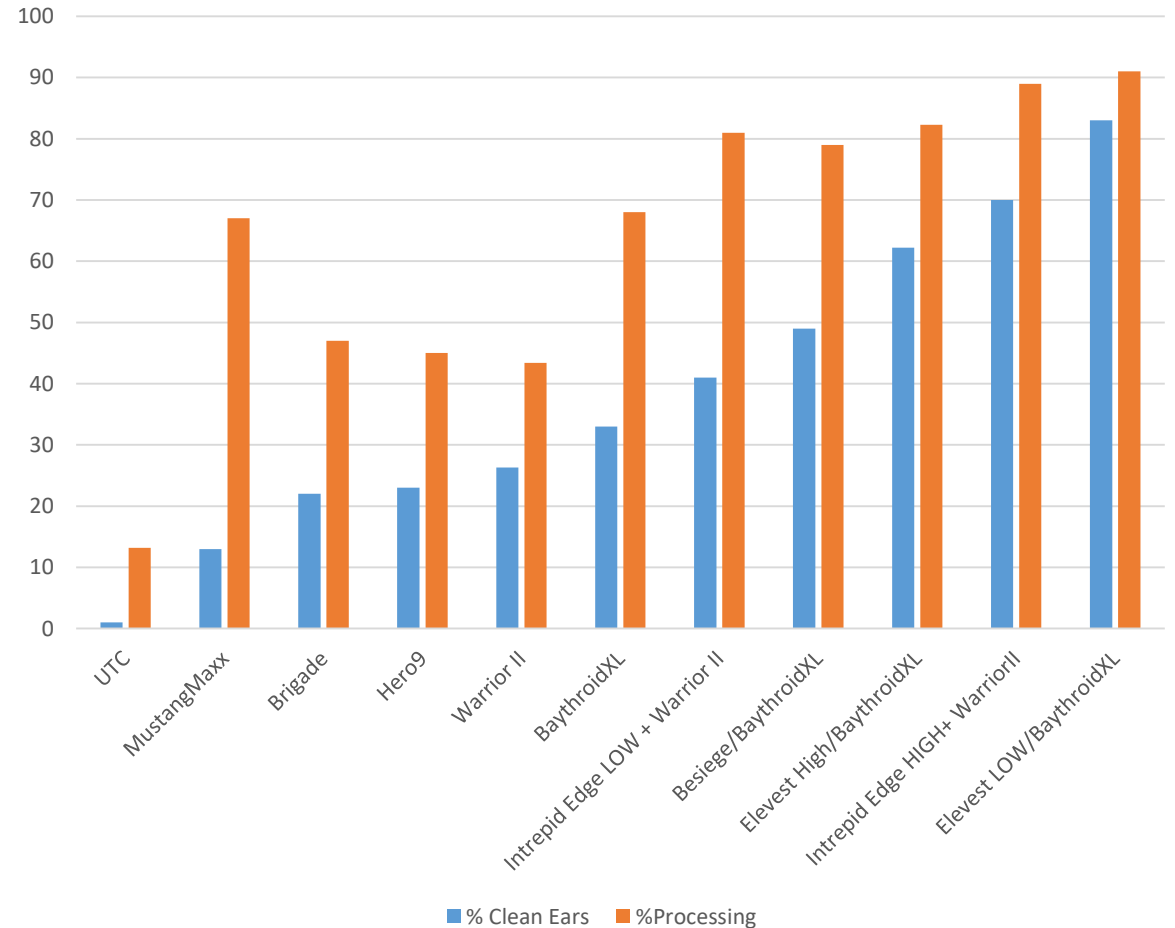


Pyrethroid Testing 2019-2021

- Baythroid XL performed better than Bifenthrin and Warrior II in 2019, 2020, and 2021
- Besiege or Elevest rotated with Baythroid XL simplest, most effective program in small plot spray trials

Pyrethroid Testing 2022

- 6 treatments every 3 days
- 100% silking
- Hero usually outperforms
- Worst pyrethroid performance



Does Efficacy Differ By Air?

Ground Treatment – coverage reduced 30-90%

- I do not usually include Lannate
- Treatments need to start early in silking process (but not pre-silk)
- Diamides have no adulticide activity, need to be on silk!



Upper leaf - 23.4 – 31.1% coverage



Upper stem - 5.8 – 8.8% coverage



Lower leaf - 9.3 – 10.5% coverage



Lower stem - 0.5 – 1.2% coverage

What You Don't Want When Spraying...



When You Don't Want to Spray...



Acknowledgements

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