

Sweet Corn Pest Management Workshop

February 25, 2020

Belle Glade, FL

Fall armyworm and aphid management in sweet corn

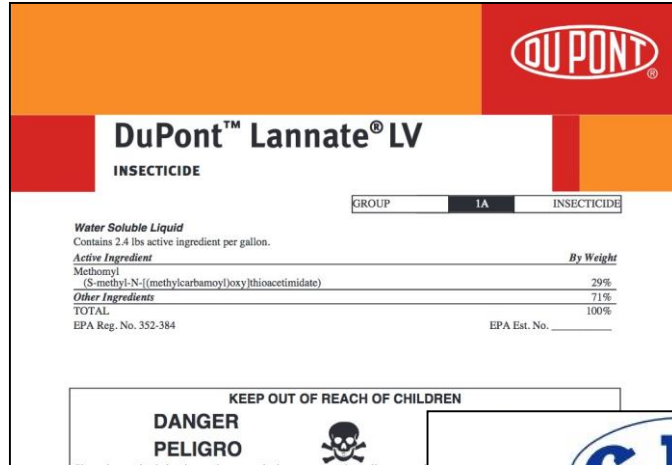
Julien Beuzelin

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Fall armyworm in Florida sweet corn: A major insect pest but not a management problem

- Methomyl remains the go-to insecticide for FAW control
- Numerous insecticides with diverse modes of action are registered
- Insecticide resistance is a major issue in Puerto Rico

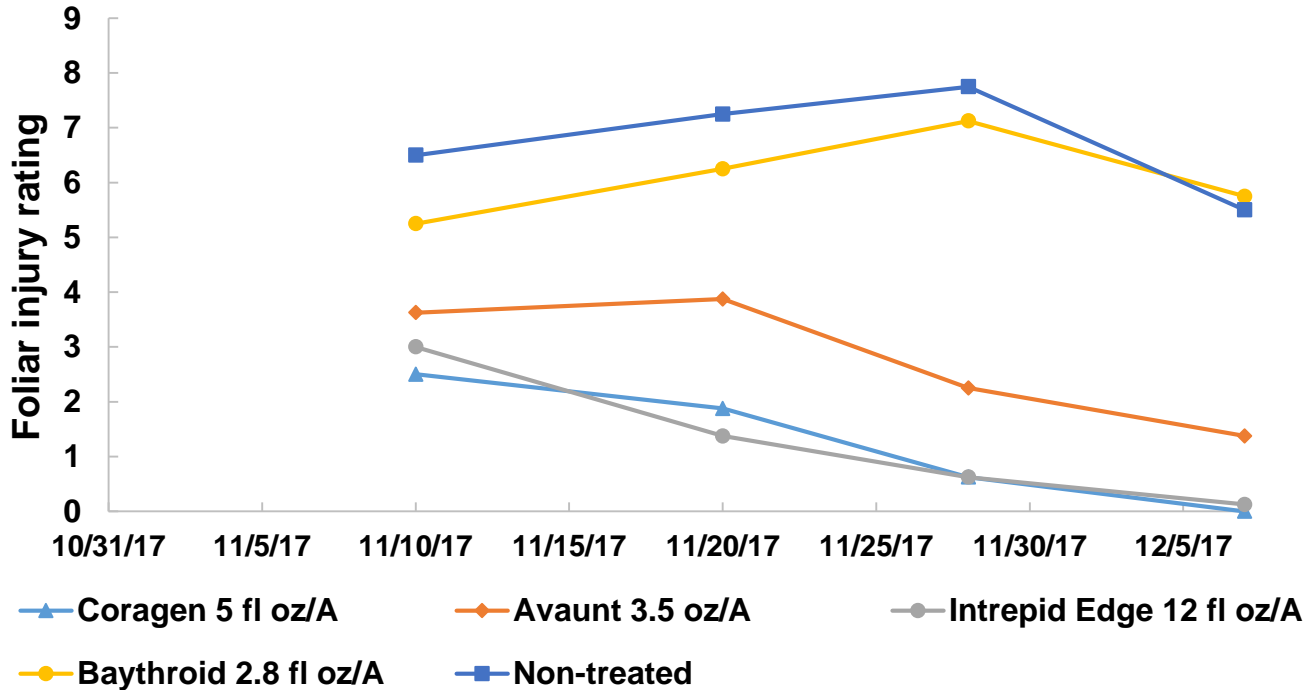


Fall armyworm research

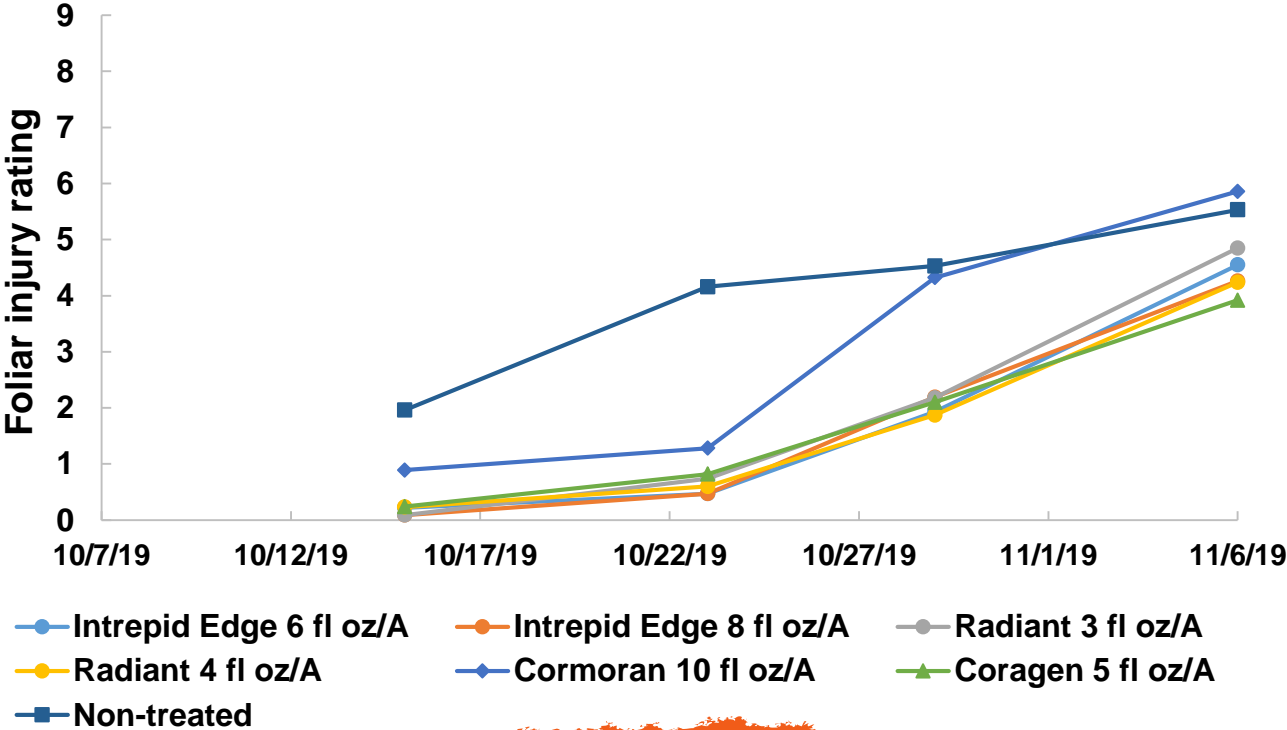
- **Field insecticide evaluations**
 - Conventional insecticides, viruses, *Bacillus thuringiensis*, peptides
- **Chlorantraniliprole (Coragen, Besiege) resistance monitoring**
- **Host plant resistance studies**



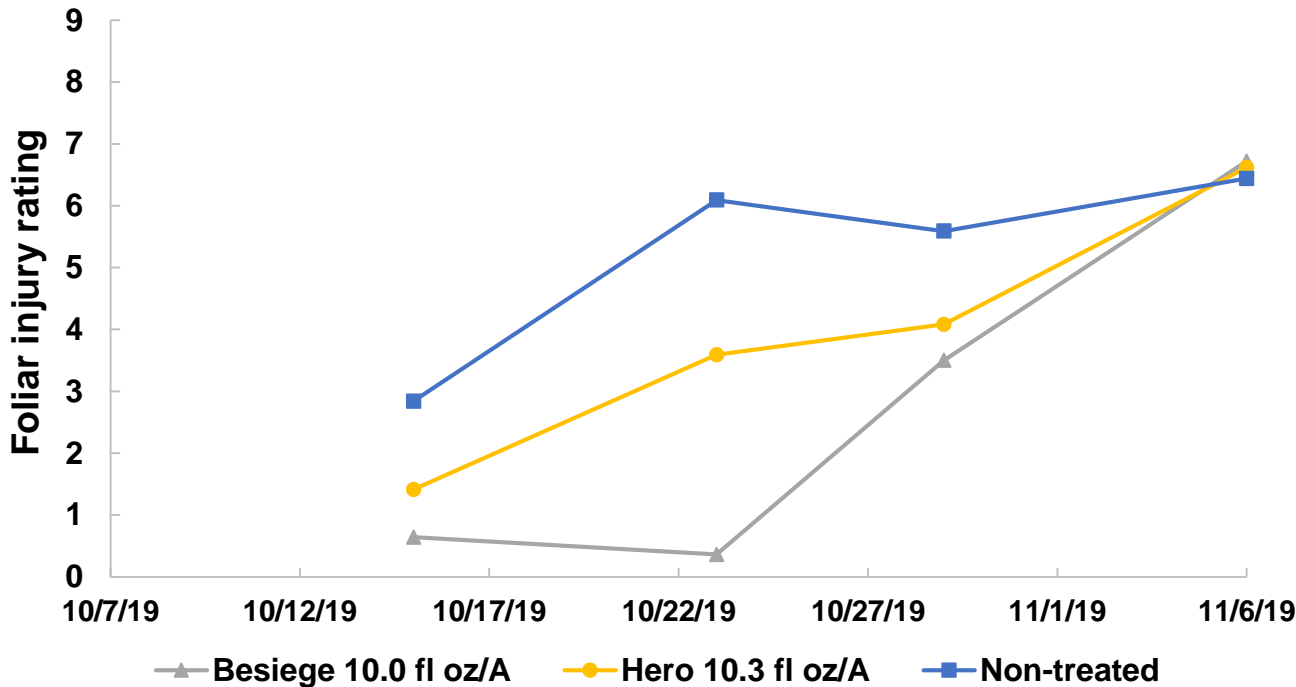
Insecticide efficacy evaluation, fall 2017



Insecticide efficacy evaluation, fall 2019



Insecticide efficacy evaluation, fall 2019



Susceptibility to chlorantraniliprole (Coragen, Besiege)

- **Five Florida populations vs. one lab population**
- **Diet incorporation bioassays with formulated Coragen**
 - Mortality checked after 7 days



Susceptibility to chlorantraniliprole

Population (F2)	<i>n</i>	Slope	LC₅₀ (ppm a.i.)
Laboratory	878	4.1	0.003
Belle Glade, 2017	439	1.3	0.032
Valrico, 2017	544	1.9	0.072
Indiantown, 2017	599	1.9	0.062
Jupiter, 2018	479	1.7	0.082
Belle Glade, 2018	576	1.4	0.062

Probit analysis (SAS PROC PROBIT)

Beuzelin et al. unpublished data.

Susceptibility to chlorantraniliprole

- Insecticide resistance is a concern but has not been detected or caused control failures in the region
- Consider rotating modes of action



Host plant resistance studies

- Robert Beiriger's work
- USDA Crop Protection and Pest Management Program with Penn State
 - Development and evaluation of corn lines producing high levels of flavonoids



Aphids infesting sweet corn in Florida

- **Corn leaf aphid**
- *Rhopalosiphum maidis*



Photo: R. Brantham, OK State Univ.

- **Bird cherry-oat aphid**
- *Rhopalosiphum padi*



- **Cotton aphid**
- *Aphis gossypii*



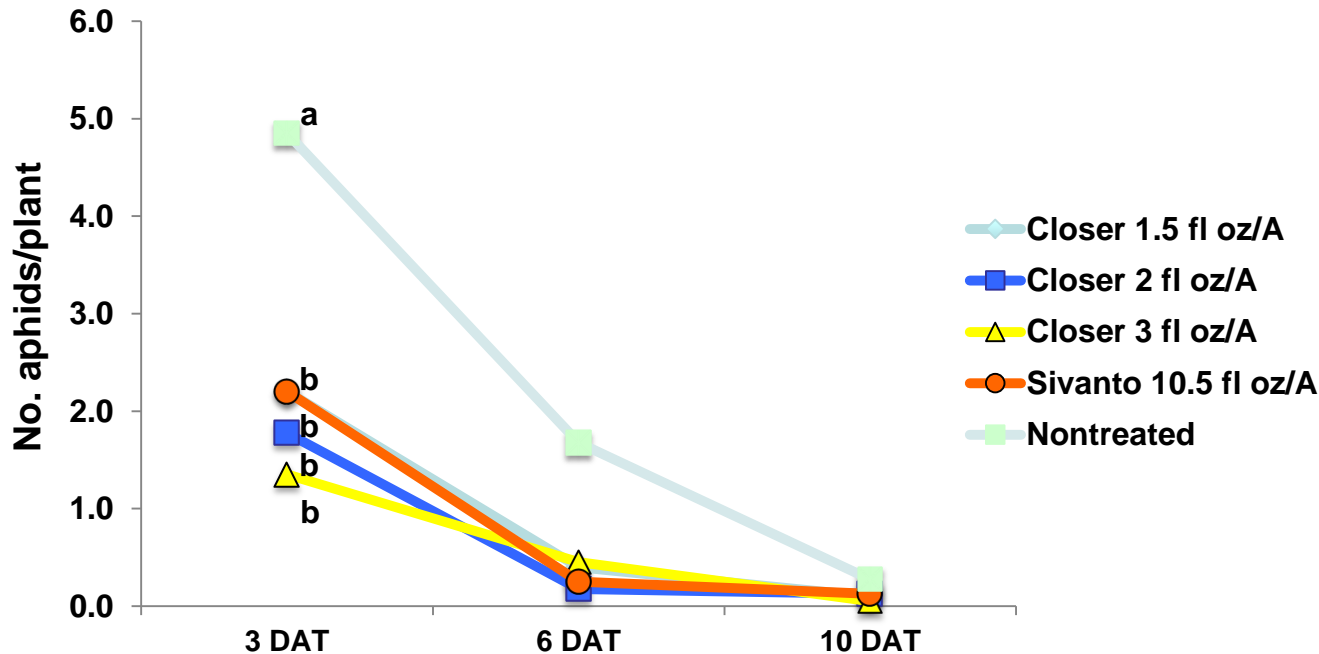
Insecticides for cotton aphids in sweet corn

- **Sivanto Prime (flupyradifurone)**
 - Poor to acceptable control depending on rate
- **Transform WG (sulfoxaflor)**
 - Same a.i. as in Closer SC
 - Newly registered for use in sweet corn
 - 0.75-1.5 oz/acre
 - 7-day PHI
 - Efficacy?



Cotton aphid insecticide efficacy, spring 2018

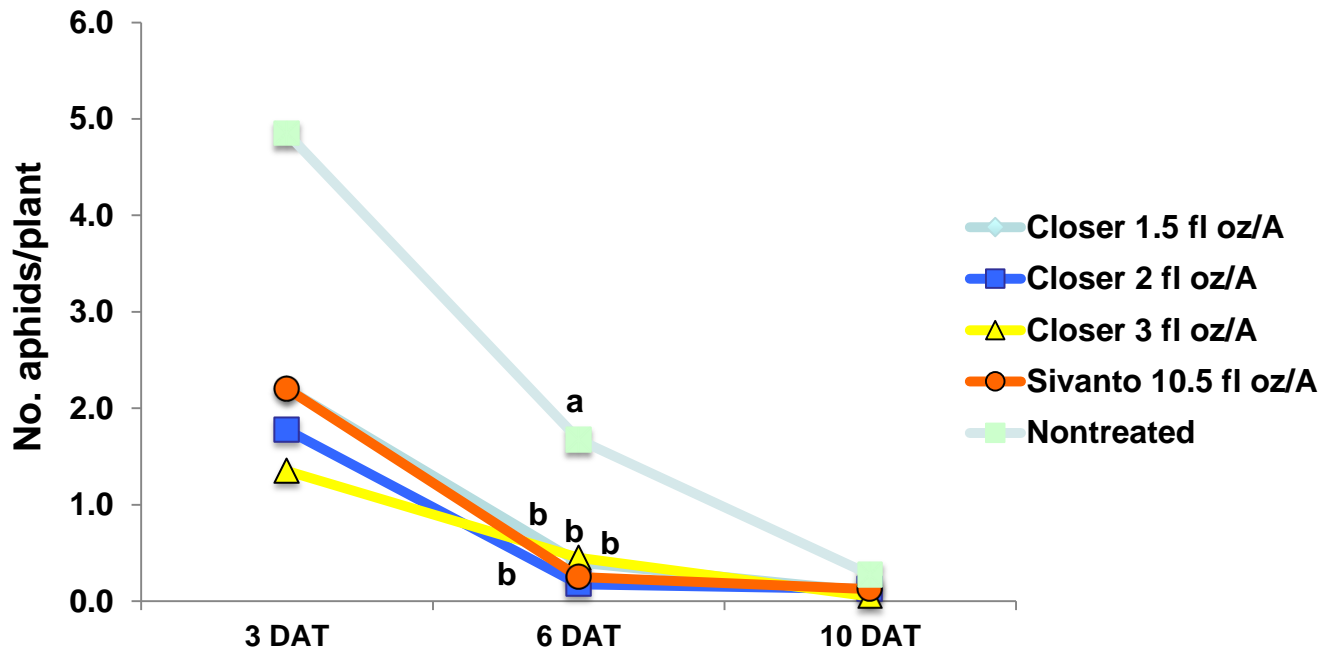
- Pretreatment infestation level: 19.6 aphids/plant



Means with the same letter are not different ($P > 0.05$)

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