

# Sugarcane Insects Update

Blake Wilson

LATMC Sugarcane Breakout Session

February 14, 2020



---

---

---

---

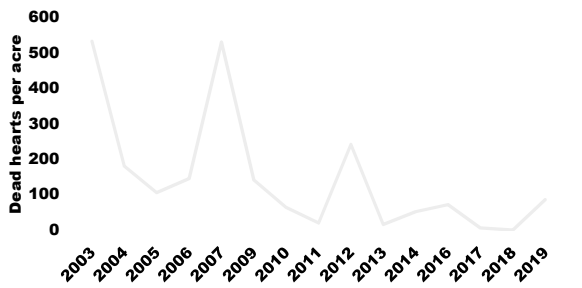
---

---

---

---

## Spring Insect Outlook Historic Deadhearts/acre



Data from Randy Richard et al. at USDA Houma



---

---

---

---

---

---

---

---

## Many acres sprayed, mostly Prevathon



---

---

---

---

---

---

---

---

**Industry Assessment: Billet Samples**



**Billet samples from separate trucks (fields)**

**Collected from 5 sugar mills**

**Hand inspected for SCB injury**

---

---

---

---

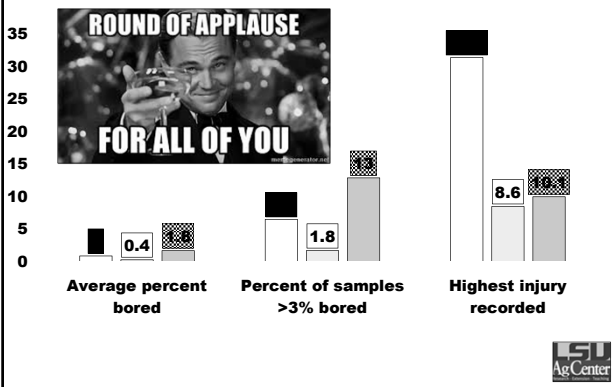
---

---

---

---

**Industry Assessment: Billet samples**




---

---

---

---

---

---

---

---

**Industry Assessment: Economic Impact**

**SCB Injury**

**\$8/acre<sup>4,5</sup> x Avg % bored**

**Control cost**

**No. Insecticide sprays: 0.6/acre**

**Control cost: \$14/acre**

**Total Impact of SCB:**

**2017: \$24/acre, \$9.3 million total**

**2018: \$17/acre, \$7.3 million total**

**2019: \$28.4/acre, \$12.1 million**

<sup>4</sup>White et al. 2008.

<sup>5</sup>Wilson et al. 2017.

---

---

---

---

---

---

---

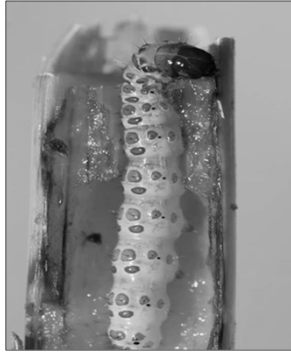
---

## Stem Borers Attacking Sugarcane

Mexican rice borer



Sugarcane borer




---

---

---

---

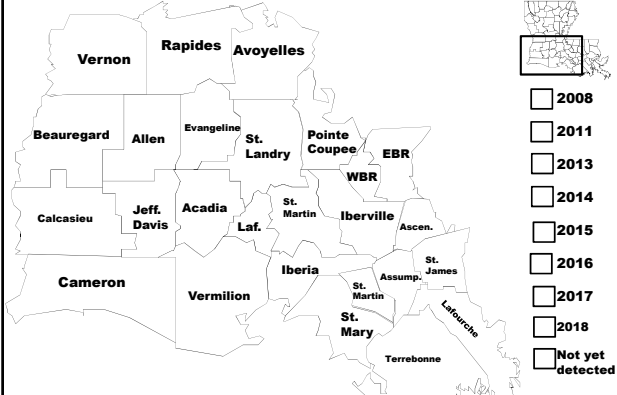
---

---

---

---

## MRB Range Expansion




---

---

---

---

---

---

---

---

## MRB in Vermilion Parish




---

---

---

---

---

---

---

---




---

---

---

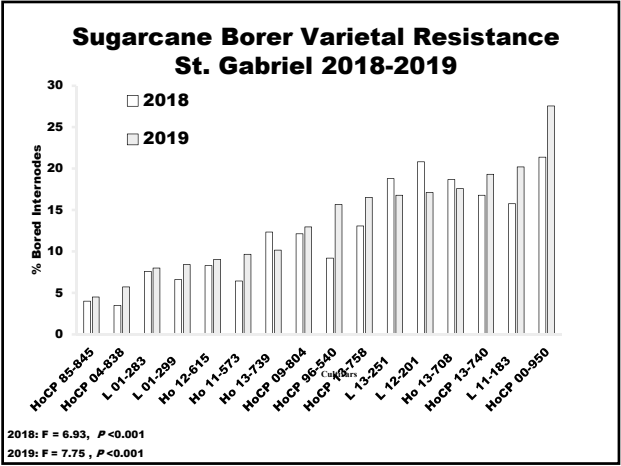
---

---

---

---

---




---

---

---

---

---

---

---

---

## Stem Borer IPM Variety Resistance

Susceptible	Intermediate	Resistant
• HoCP 00-950	• HoCP 07-613	• L 01-299
• HoCP 96-540	• L 01-283	• HoCP 85-845
• Ho 05-961	• L 03-371	• HoCP 04-838
• HoCP 04-838 (MRB)	• HoCP 12-615	(SCB)
• L 11-183		
• L 12-201		

**Susceptible cultivars are often >5X more injured than resistant varieties when not protected.**

---

---

---

---

---

---

---

---

## USDA Yield loss studies 2019 1<sup>st</sup> Stubble (2018 plant cane)

Cultivar	% Bored	Sugar yield (lbs/a)		% yield loss	% response
		Protected	Unprotected		
L 13-251	42.6 a	7586	5979	21.2	0.5
HoCP 13-740	31.1 b	6437	4688	27.2	0.9
L 11-183	30.4 b	8454	7475	11.6	0.4
HoCP 13-758	29.5 b	6487	5207	19.7	0.7
HoCP 96-540	21.9 c	8425	7286	13.5	0.6
Ho 13-708	18.4 cd	9049	6908	23.7	1.3
Ho 13-739	15.3 d	10474	8679	17.1	1.1
L 01-299	10.1 e	7772	9056	NA	NA

F = 54.3  
P < 0.001

Studies done in cooperation with Randy Richard, Rich Johnson et al.

---

---

---

---

---

---

---

---

---

---

---

---

## USDA Yield loss studies 2019 Plant cane

Cultivar	% Bored	Sugar yield (lbs/a)		% yield loss	% response
		Protected	Unprotected		
HoCP 00-950	40.0 a	11525 bcd	8300 cd	28.0	0.7
HoCP 14-885	31.4 ab	15321 a	8705 bcd	43.2	1.4
HoCP 13-758	23.9 ab	10798 bcd	8441 cd	21.8	0.9
L 14-267	23.9 ab	12203 abc	9954 bcd	18.4	0.8
HoCP 14-802	23.6 ab	11621 bcd	9810 bcd	15.6	0.7
Ho 13-739	18.0 b	12329 ab	10082 bcd	18.2	1.0
Ho 11-573	15.4 b	11116 bcd	10182 bcd	8.4	0.5
HoCP 85-845	11.8 b	11252 bcd	10601 bcd	5.8	0.5

F = 4.4                      F = 3.6  
P = 0.004                    P = 0.004

Studies done in cooperation with Randy Richard, Rich Johnson et al.

---

---

---

---

---

---

---

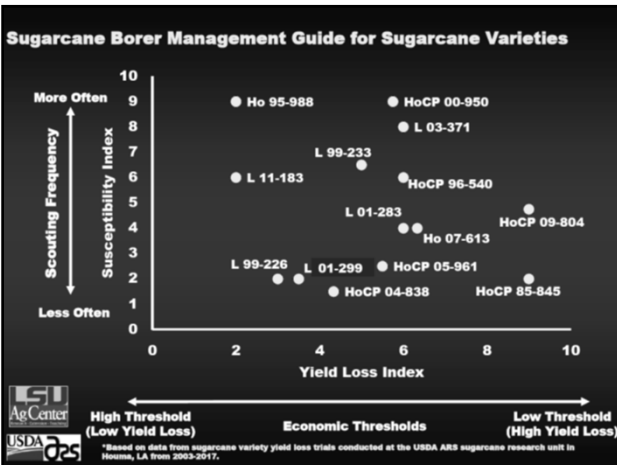
---

---

---

---

---




---

---

---

---

---

---

---

---

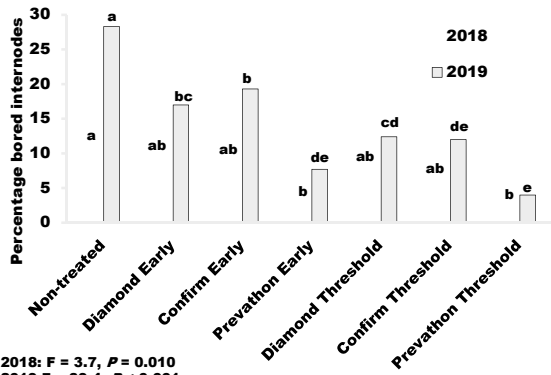
---

---

---

---

### Insecticide Timing St. Gabe 2018-2019




---

---

---

---

---

---

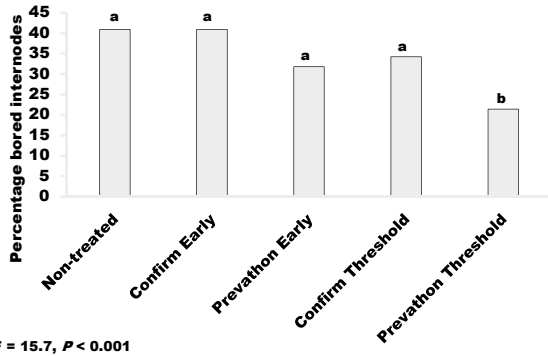
---

---

---

---

### Insecticide Timing, Houma 2019




---

---

---

---

---

---

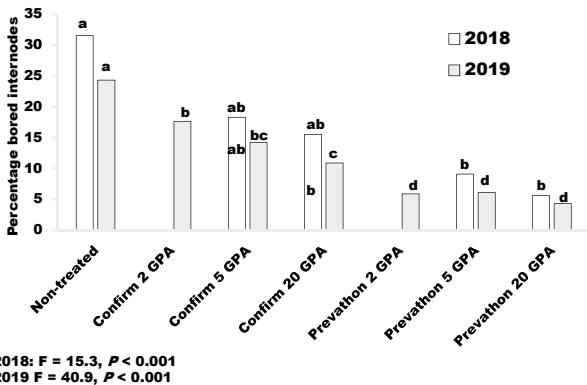
---

---

---

---

### Water Volume, St. Gabe 2018-2019




---

---

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

**WIC Resistance**

Variety	Nymphs per leaf	Sooty mold rating
L 11-183	44.0 a	7.2 a
HoCP 96-540	30.0 ab	4.6 ab
HoCP 04-838	23.7 abc	3.9 bc
L 01-283	20.3 bc	3.3 bc
L 01-299	14.4 bc	2.8 bc
L 09-804	12.8 c	2.3 c
F =	5.75	7.64
df =	5, 24.0	5, 19.8
P =	0.001	<0.001

---

---

---

---

---

---

---

---

- Research Priorities**
- Sugarcane aphid yield loss**
  - IR-4 Registration of Sivanto**
  - WIC yield loss/threshold**
  - MRB sampling/scouting studies**
  - MRB yield loss/threshold**
  - Wireworm trials**
  - In furrow Platinum? Whole stalk?**
- <sup>4</sup>White et al. 2008.  
<sup>5</sup>Wilson et al. 2017.

---

---

---

---

---

---

---

---

# Acknowledgements

Funding from AMSCL and industry partners

USDA Sugar Research Unit at Houma

Graduate and undergraduate student support

James Villegas  
Megan Mulcahy  
Leonardo Salgado  
Julian Lucero

Grower and consultant cooperators



---

---

---

---

---

---

---

---

---

---

# Questions?



Blake Wilson  
bwilson@agcenter.lsu.edu  
985-378-1234



---

---

---

---

---

---

---

---

---

---