Risk of SCB Damage

USDA ARS
Sugarcane Research Unit

Louisiana Agricultural Consultants Association
Paragon Casino Resort, Marksville, LA
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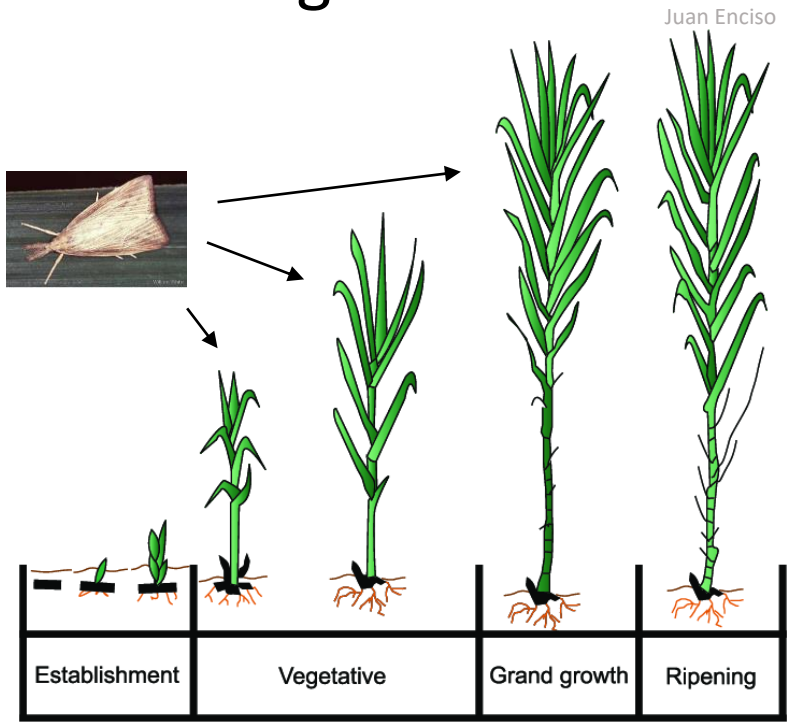
Sugarcane borer (SCB)

- *Diatraea saccharalis* F. (Lepidoptera: Crambidae)
- ↑pathogens/breakage, ↓sugar content
- Up to $8 million annual losses
- Management methods:
  - Chemical control
  - Varietal resistance
  - Biological control

Potential importance of prior damage

- Prior insect damage changes plant attractiveness
- Particularly for other insects of the same species
- Per 1% bored internode, 0.61-0.7% loss of sugar
- 5 generations of SCB



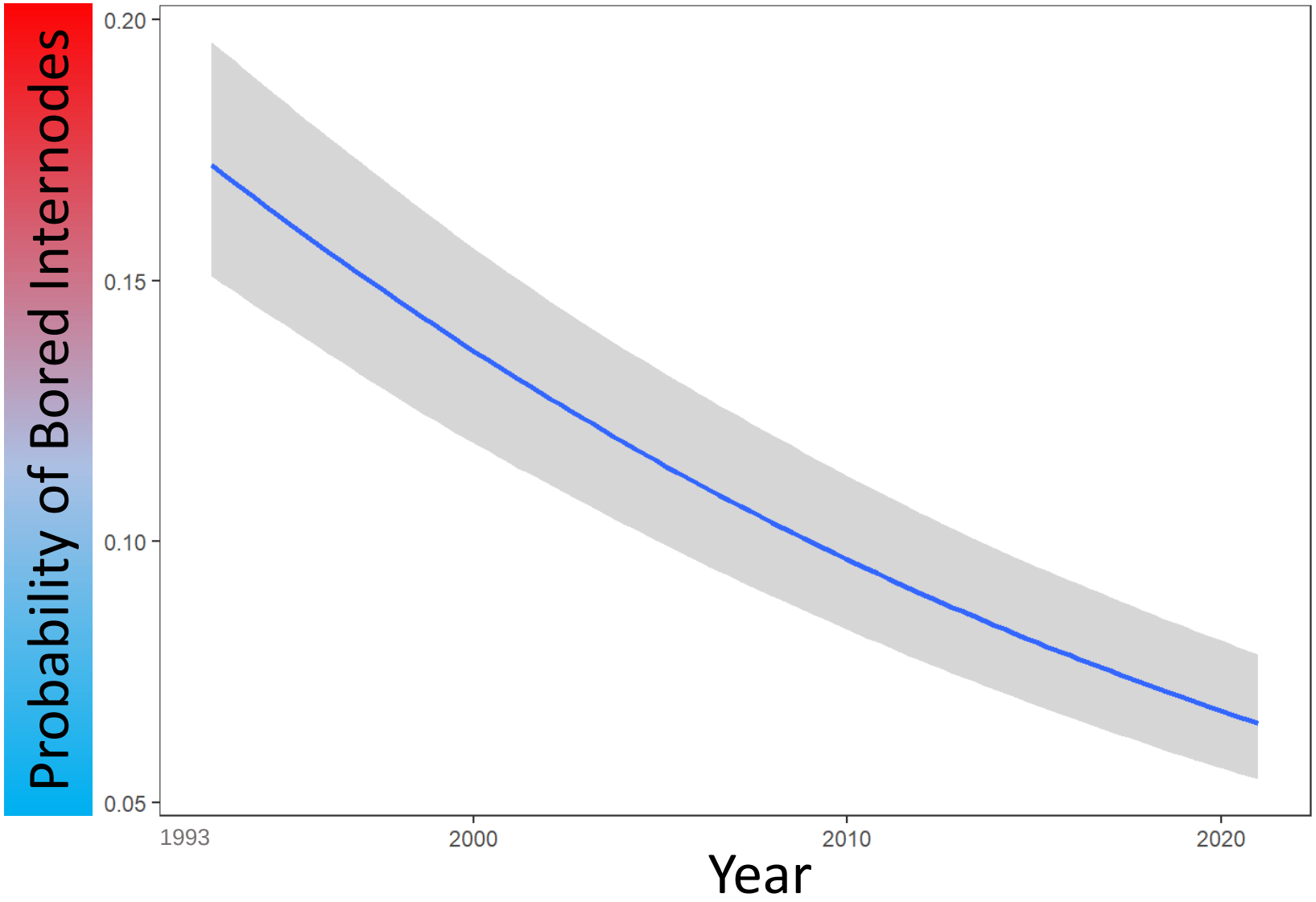
Sugarcane Borer Damage

1. Varietal resistance
2. Differences between stubbles
3. Risks of not treating soon enough
4. What if I didn’t treat last year?

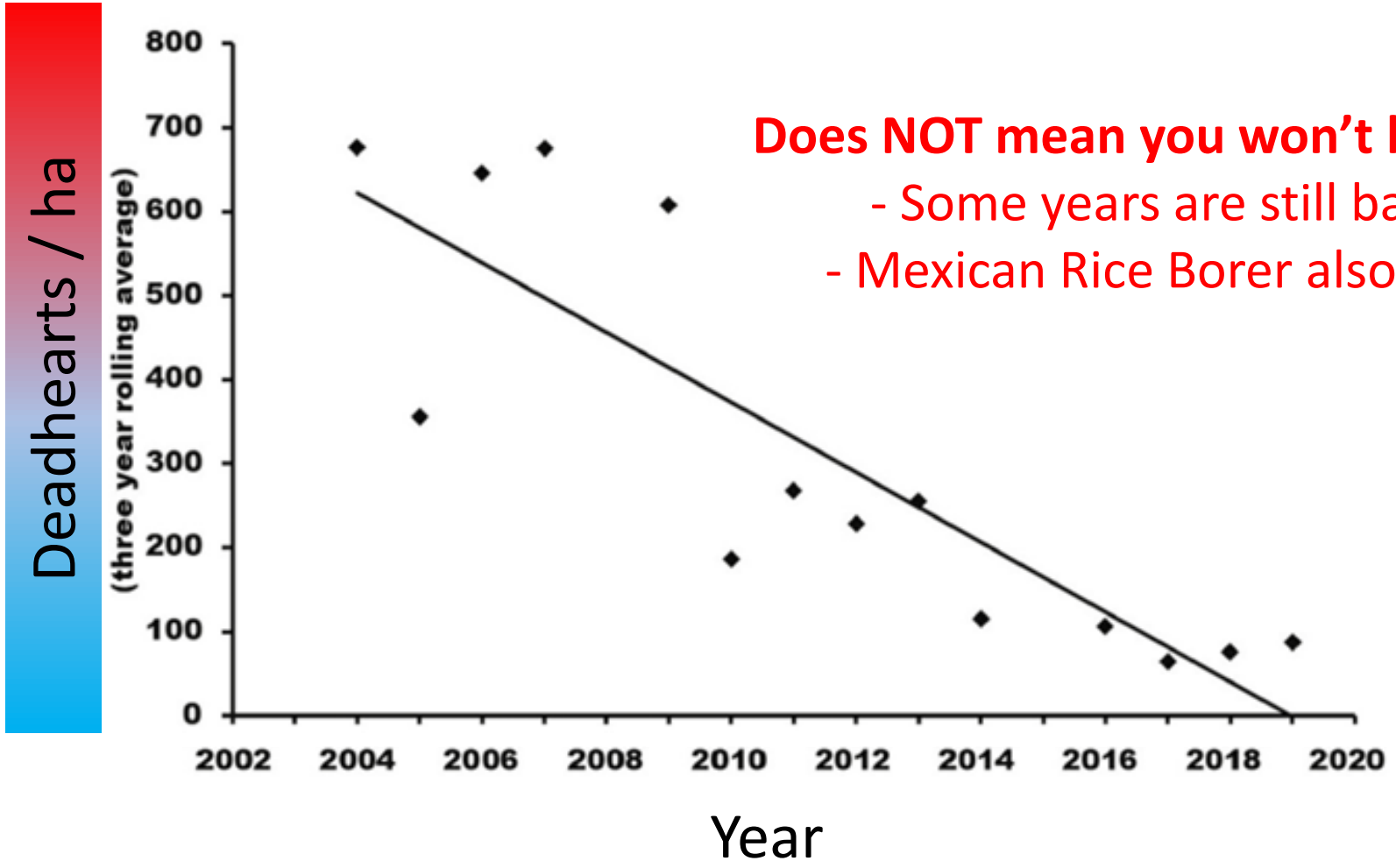
Yield Reduction Studies

- Plant potential new varieties
- Inoculate with sugarcane borers (SCB)
- Control SCB in half the plots
- Compare…among varieties
  - SCB damage
  - Fiber content
  - TRS
  - Plot yield

SCB damage decreasing over time (1993-2021)



Matches the deadheart data (2003-2020)

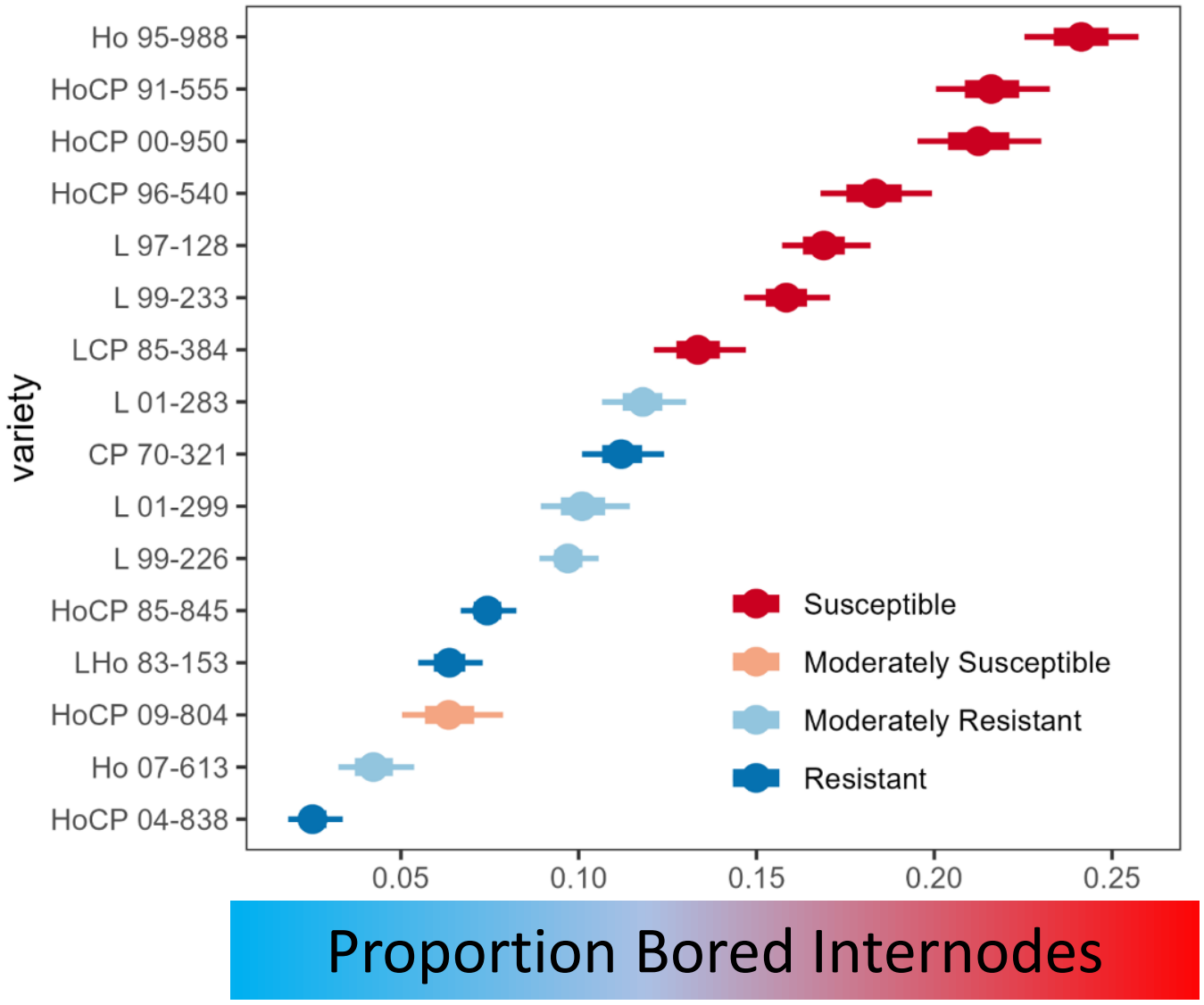


Does NOT mean you won't have damage!

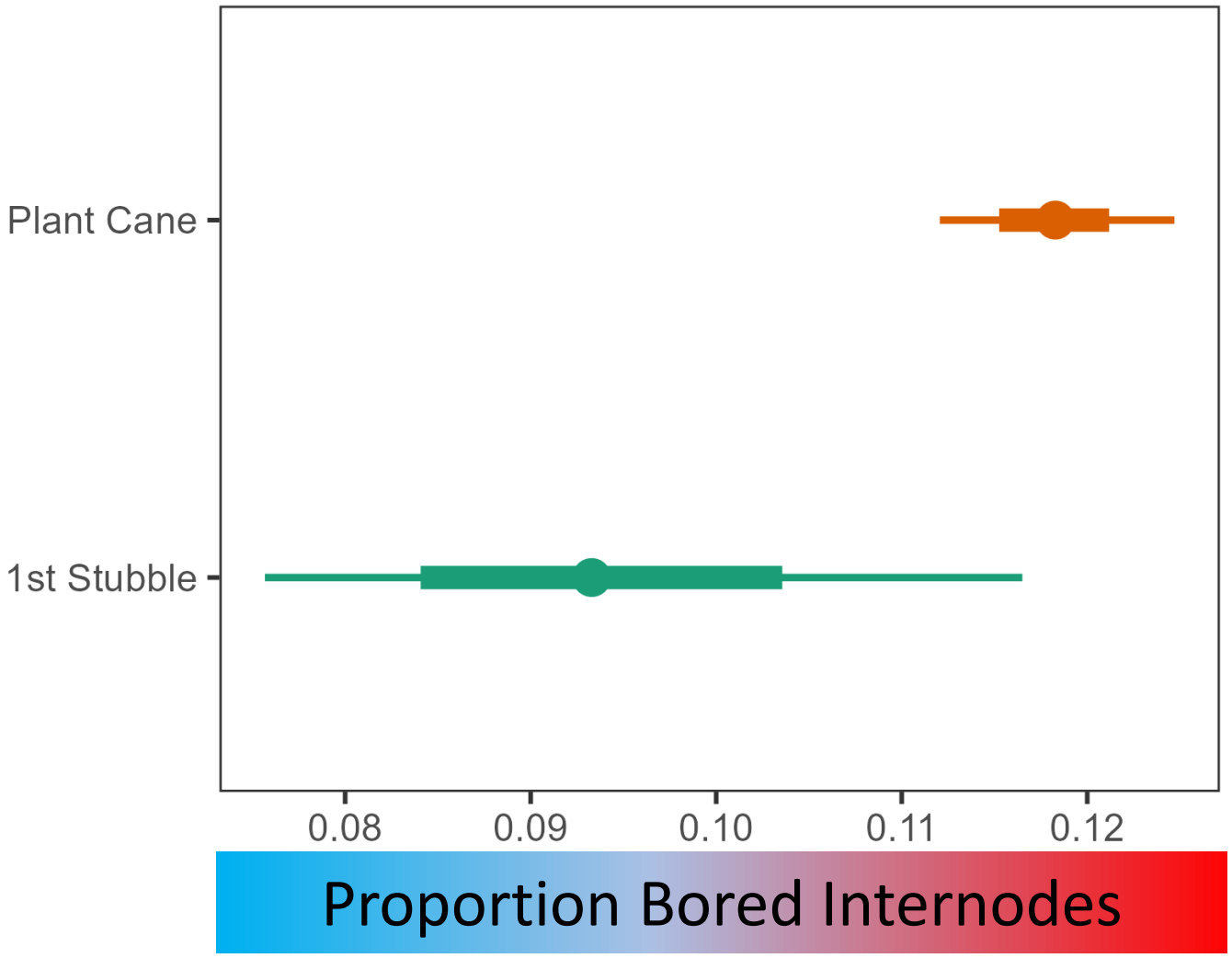
- Some years are still bad (2022)
- Mexican Rice Borer also a problem

Wilson, B. E., White, W. H., Richard, R. T., & Johnson, R. M. (2020). Population trends of the sugarcane borer (Lepidoptera: Crambidae) in Louisiana sugarcane. *Environmental Entomology*, *49*(6), 1455-1461.

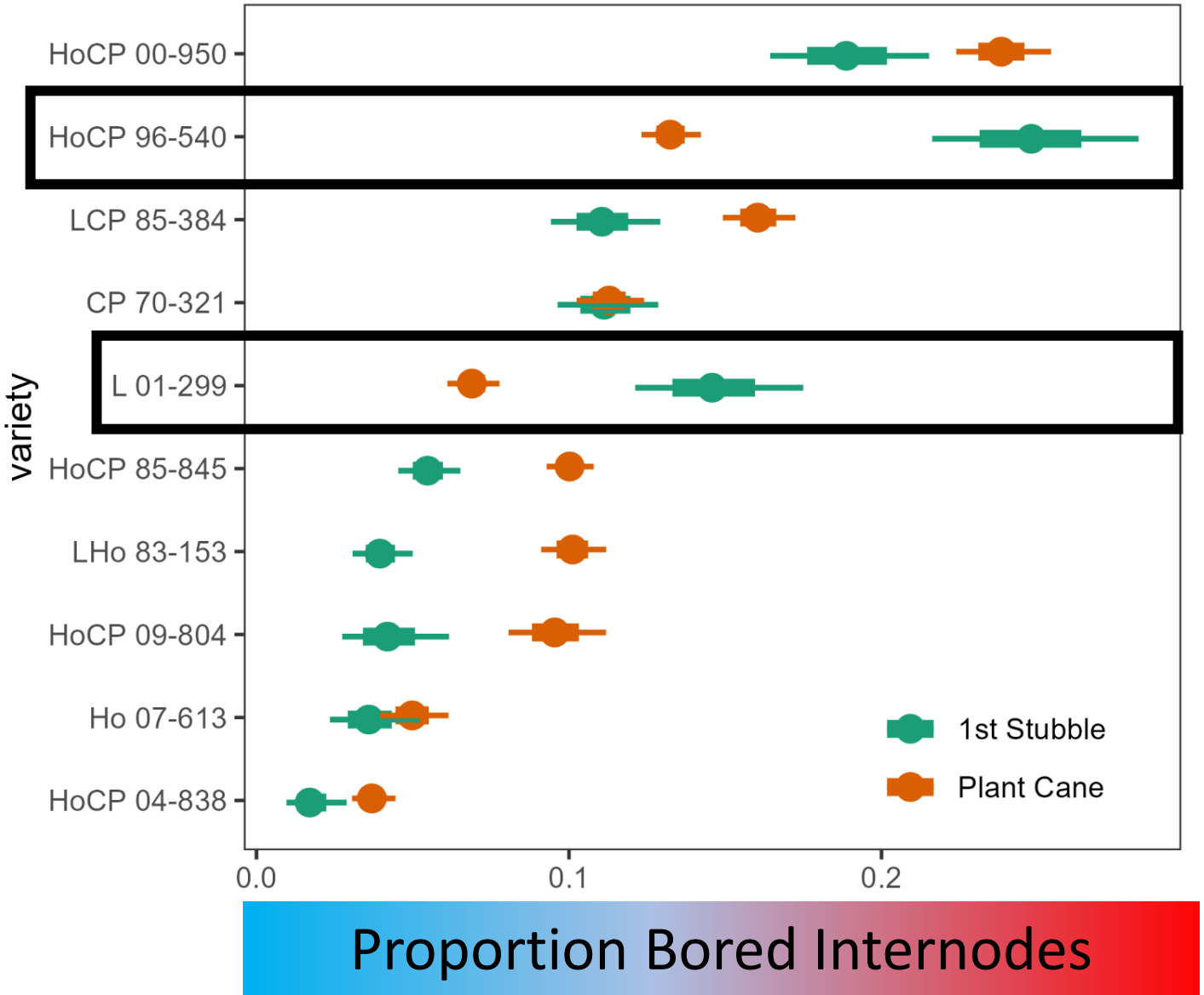
Damage differs with variety



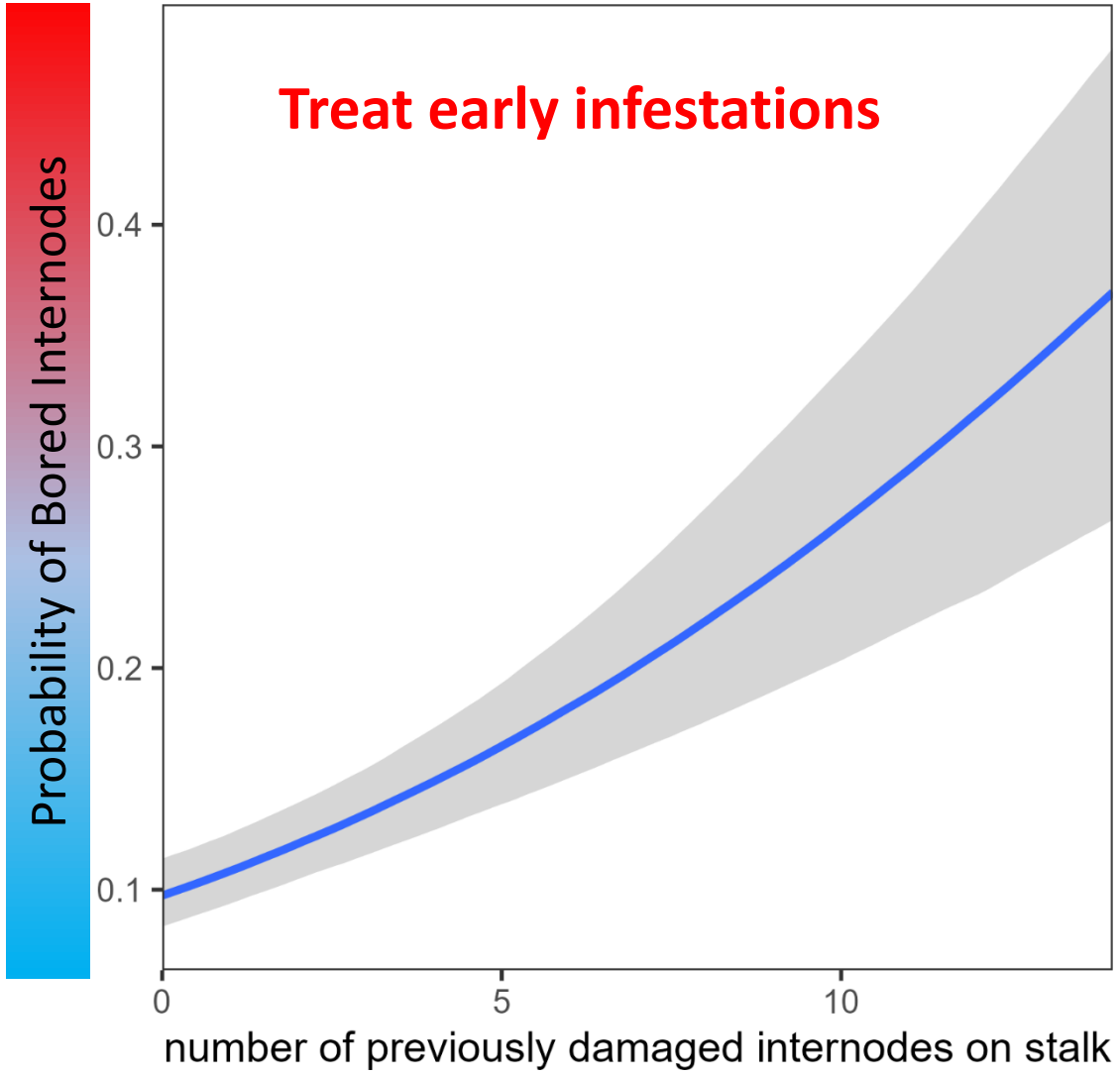
Damage to PC greater than 1st Stubble



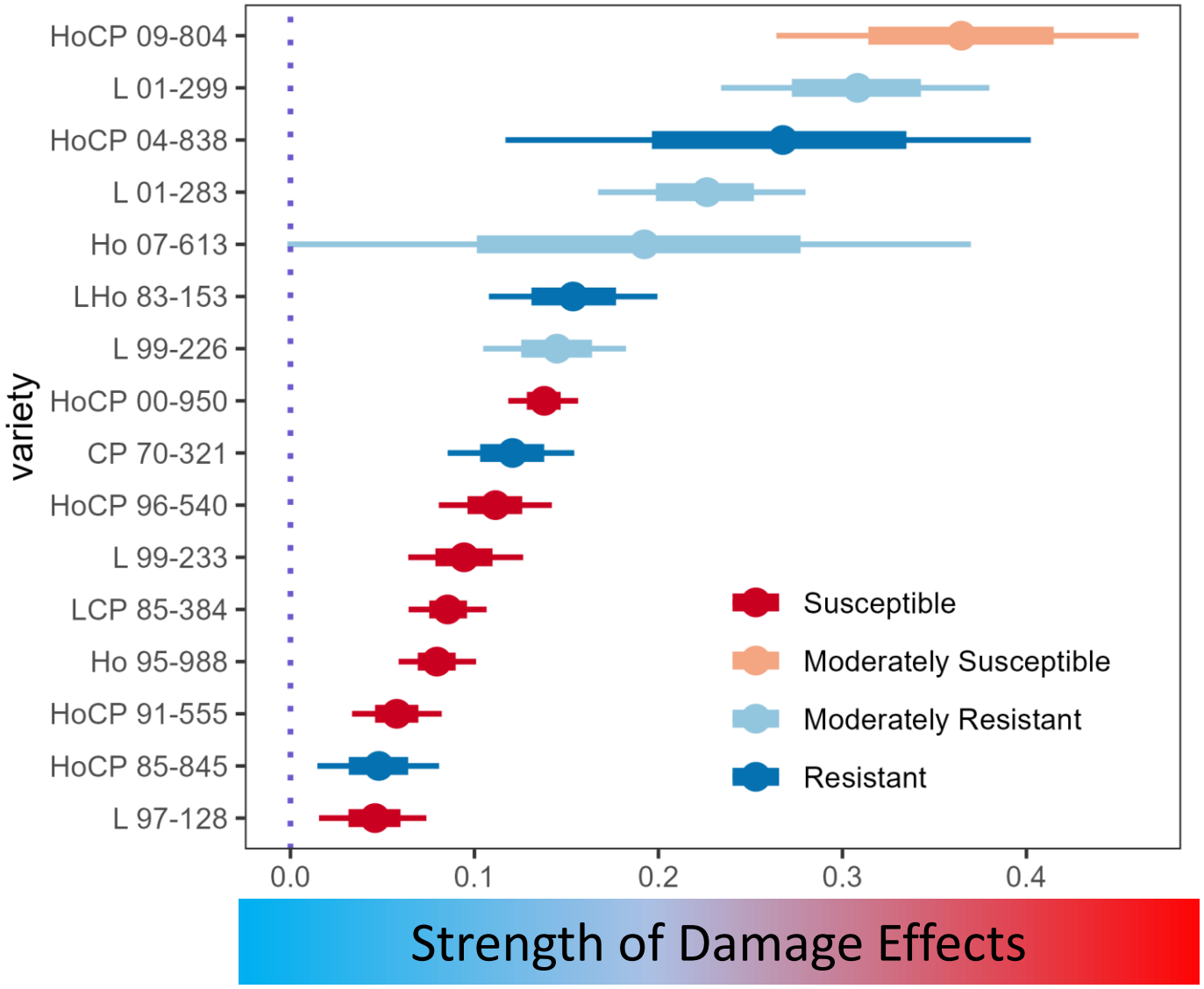
BUT this also varies with variety



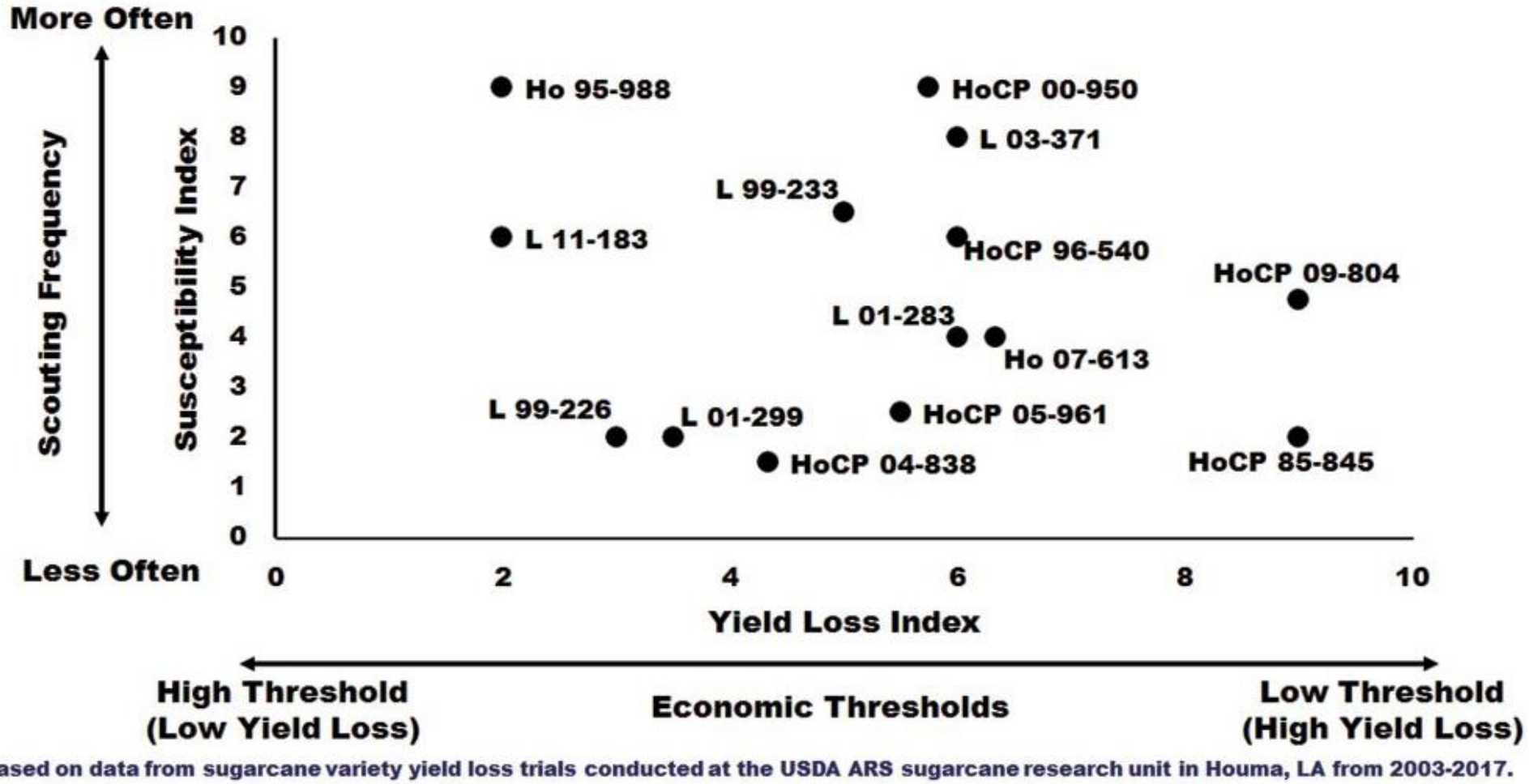
Risk greater with prior damage in a season



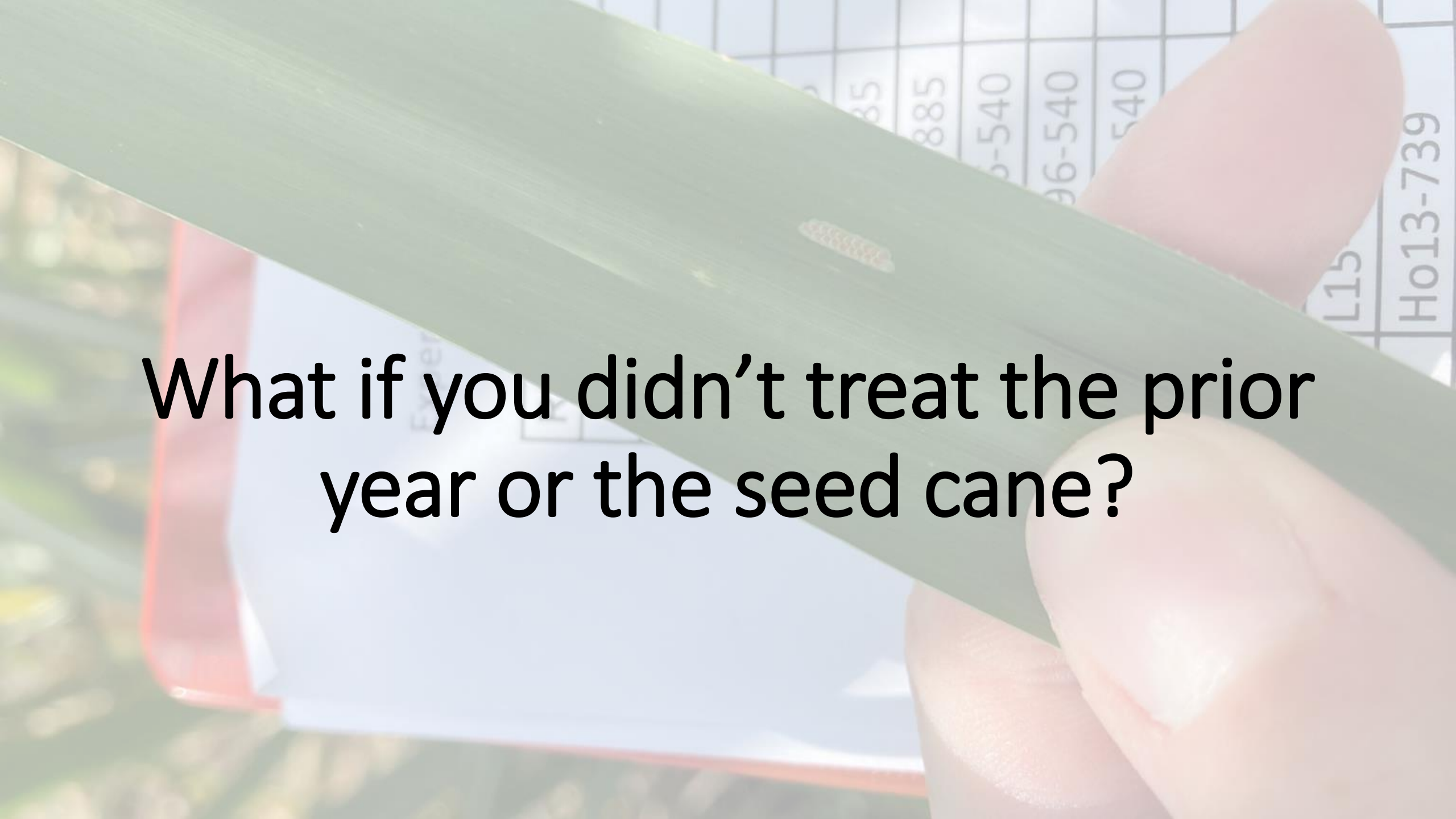
Increased risk differs with variety



Scouting needs vs economic threshold

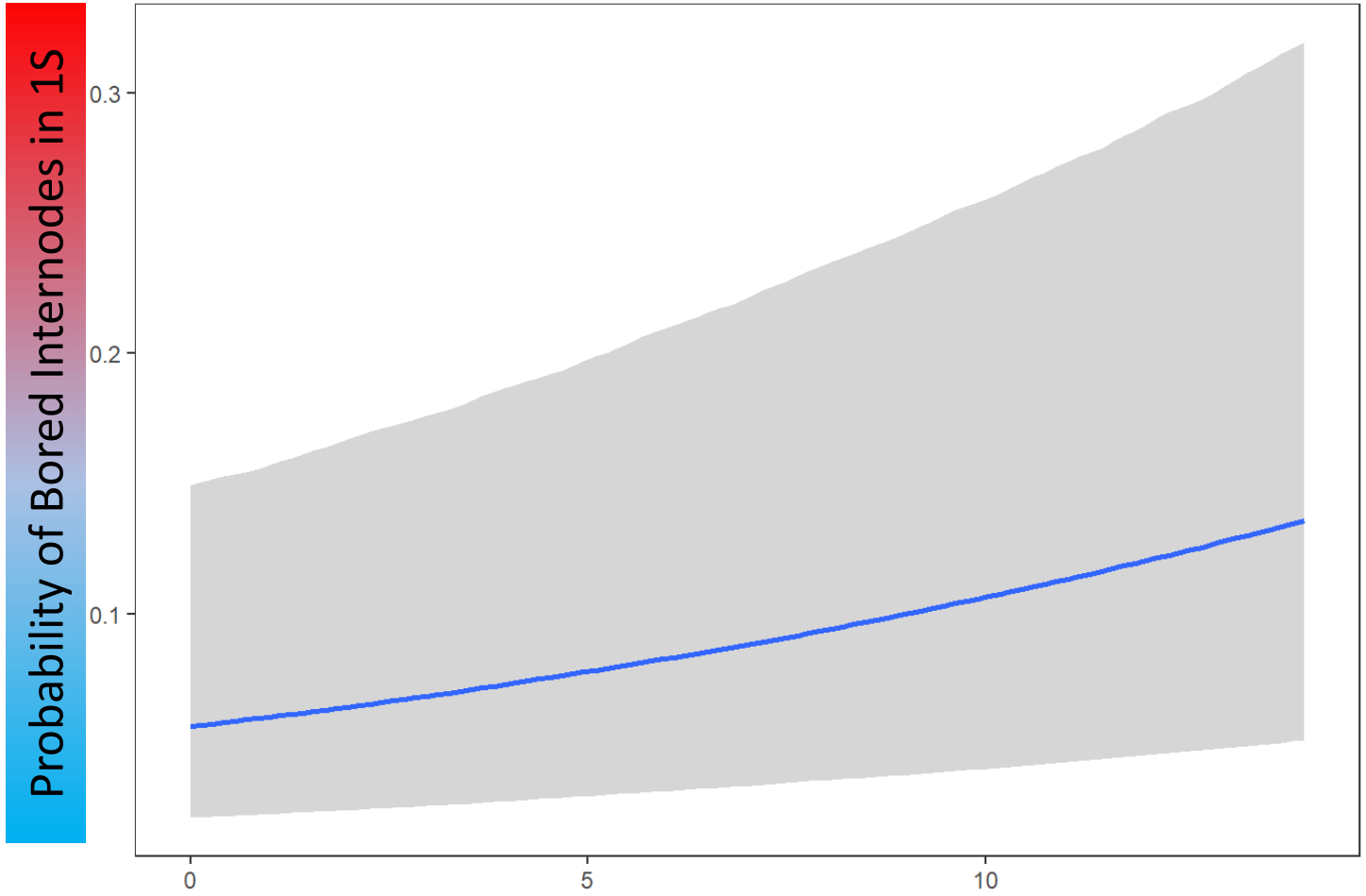


Wilson, B. E., Johnson, R. M. & Richard, R. T., (2019). Sugarcane Borer Management Guide for Sugarcane Varieties.

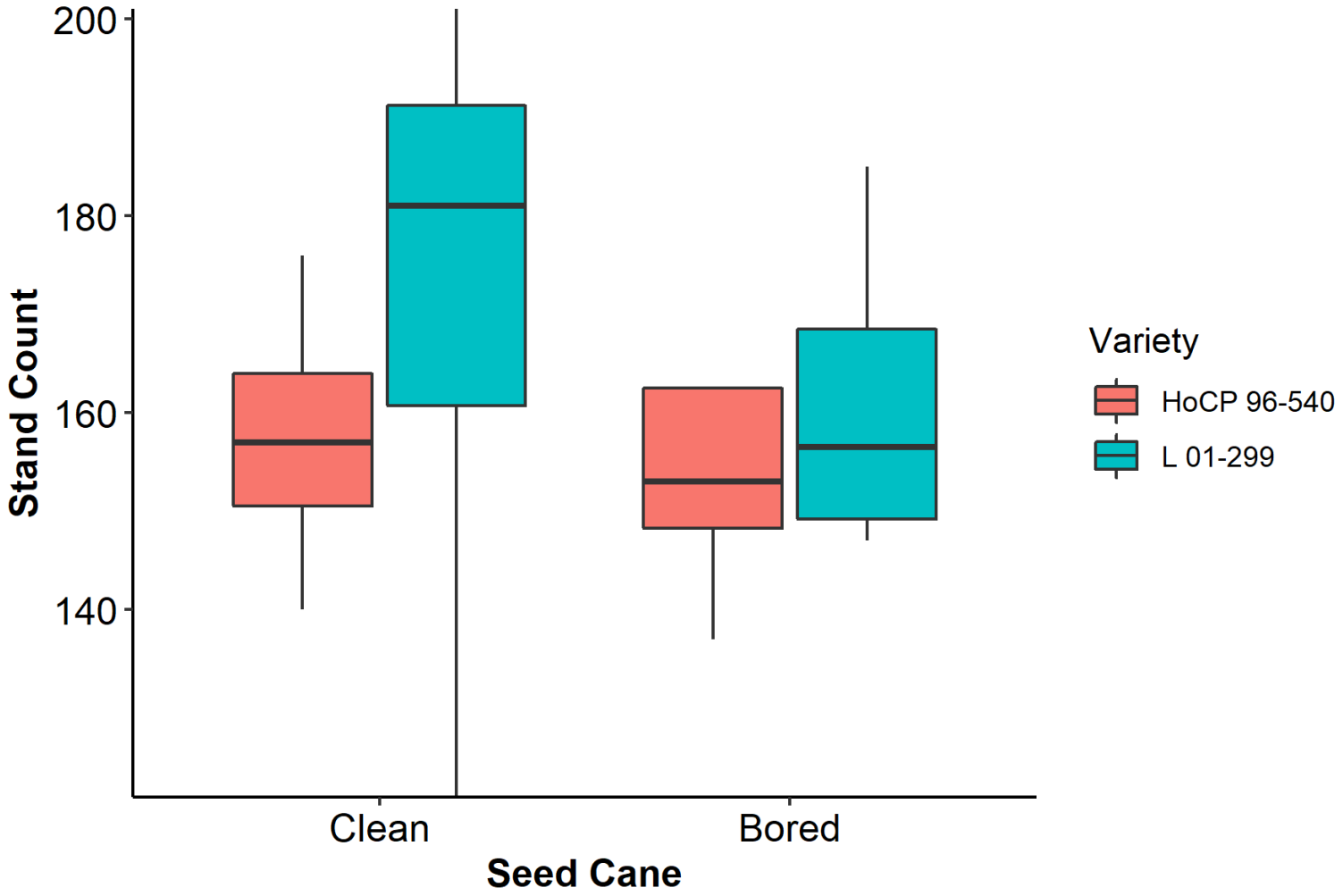


What if you didn’t treat the prior year or the seed cane?

Low impacts of prior year's SCB damage on SCB

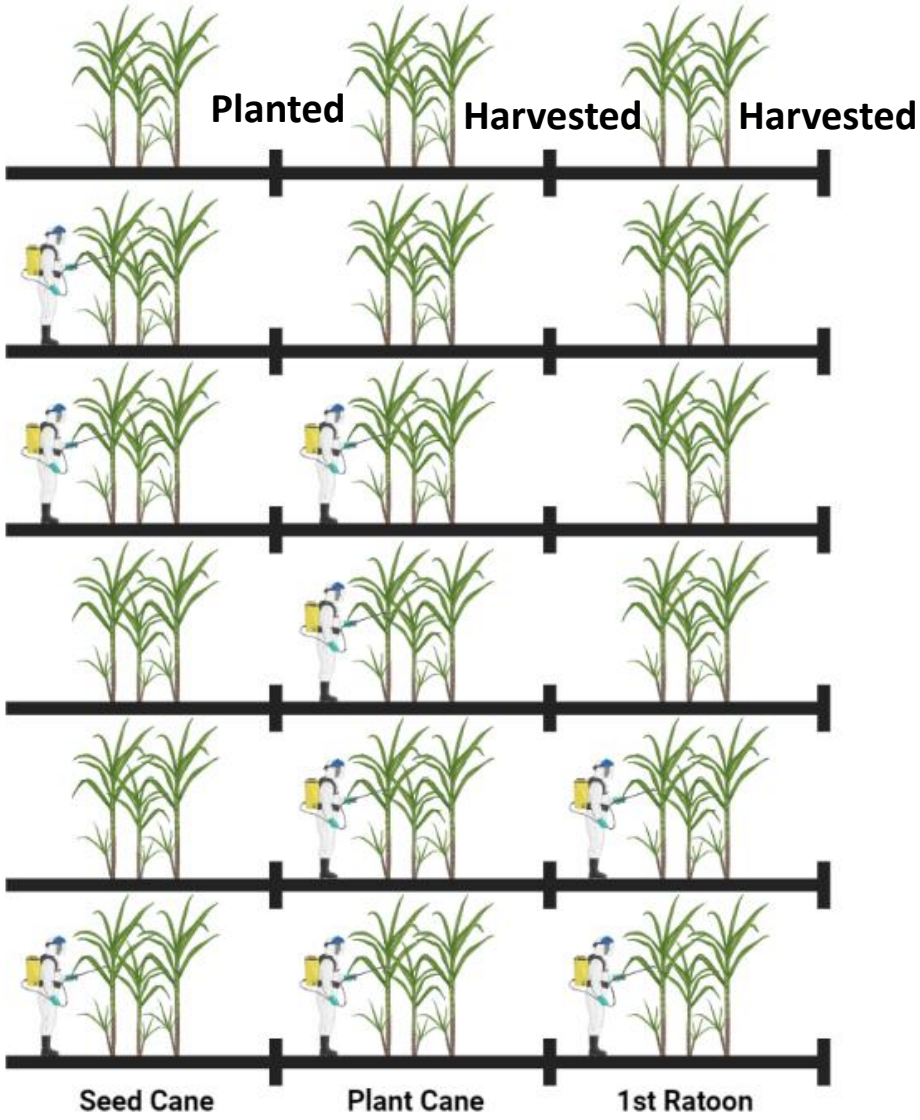


Prior *whole stalk* work from Wilson & Richard

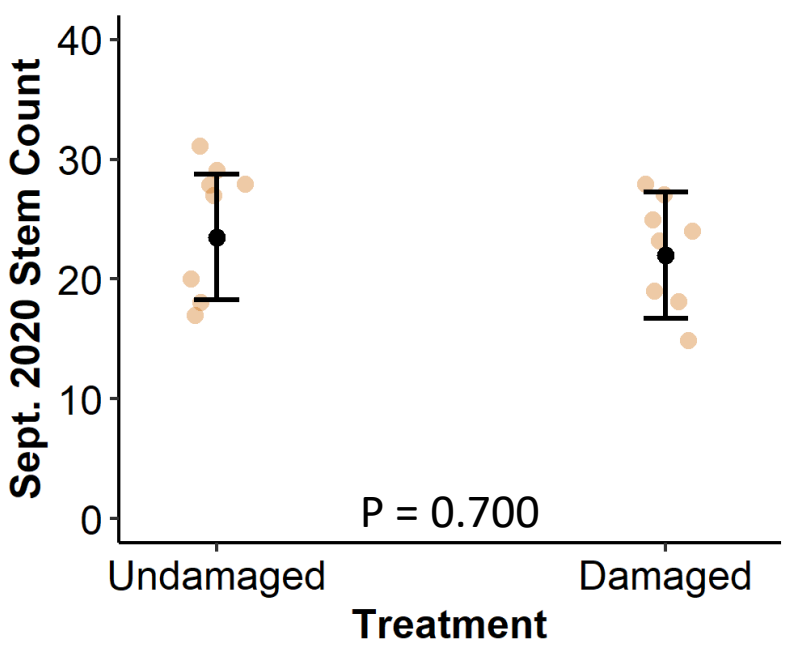


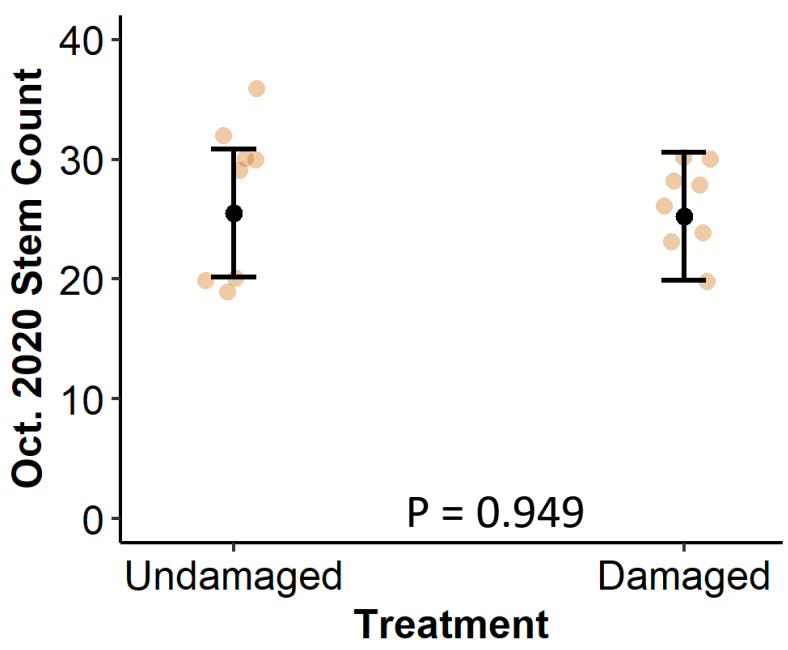
Risk of SCB across stubbles

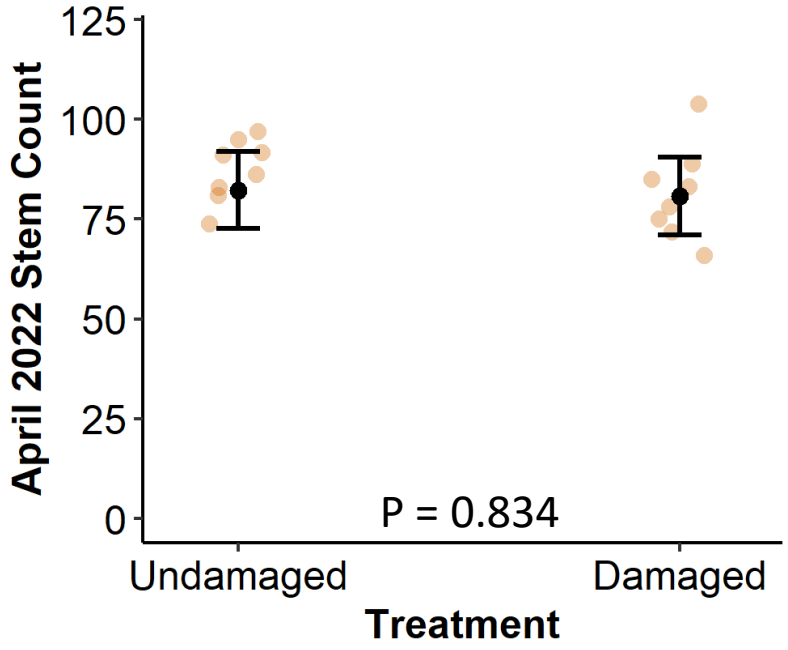
- 2 Studies - planted in 2020 and 2021
- Evaluating effects of damaged seed
- Impacts of prior damage on future damage across stubbles



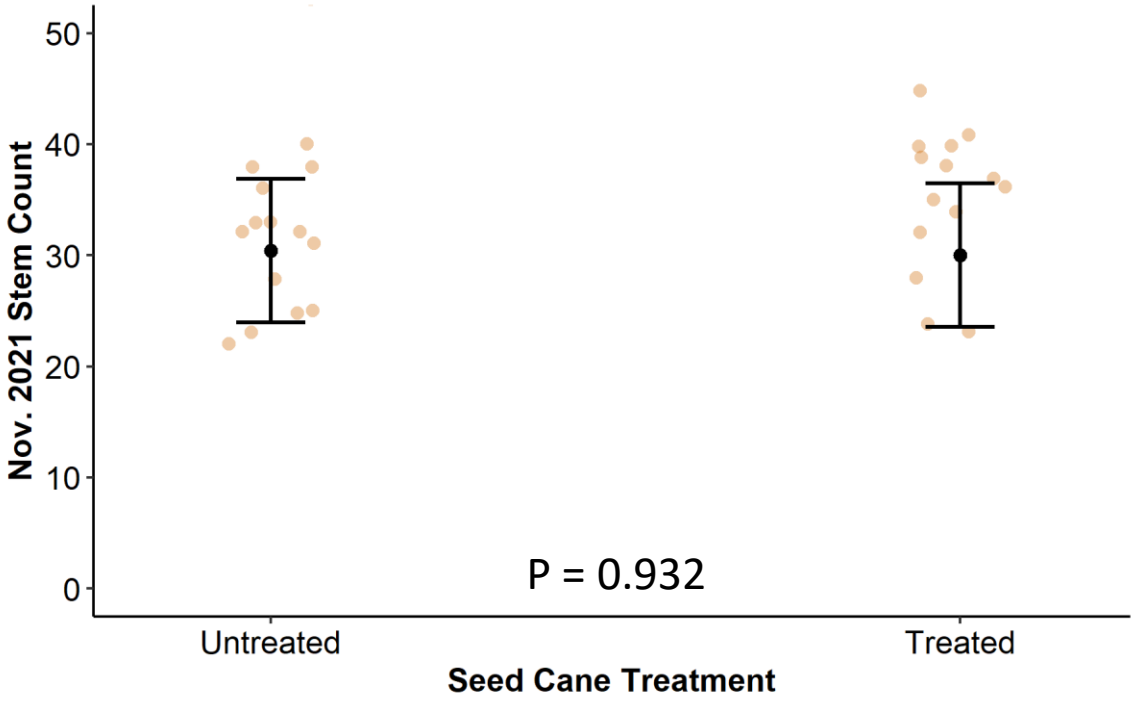
No effects of damaged seed on 950 emergence

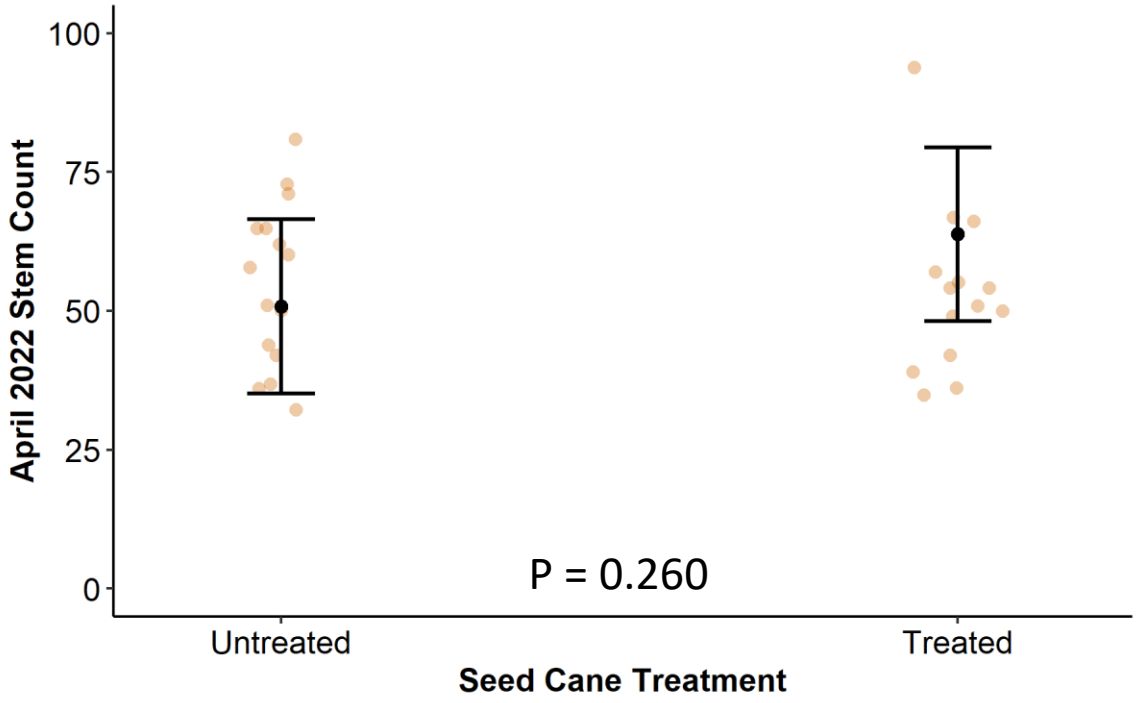




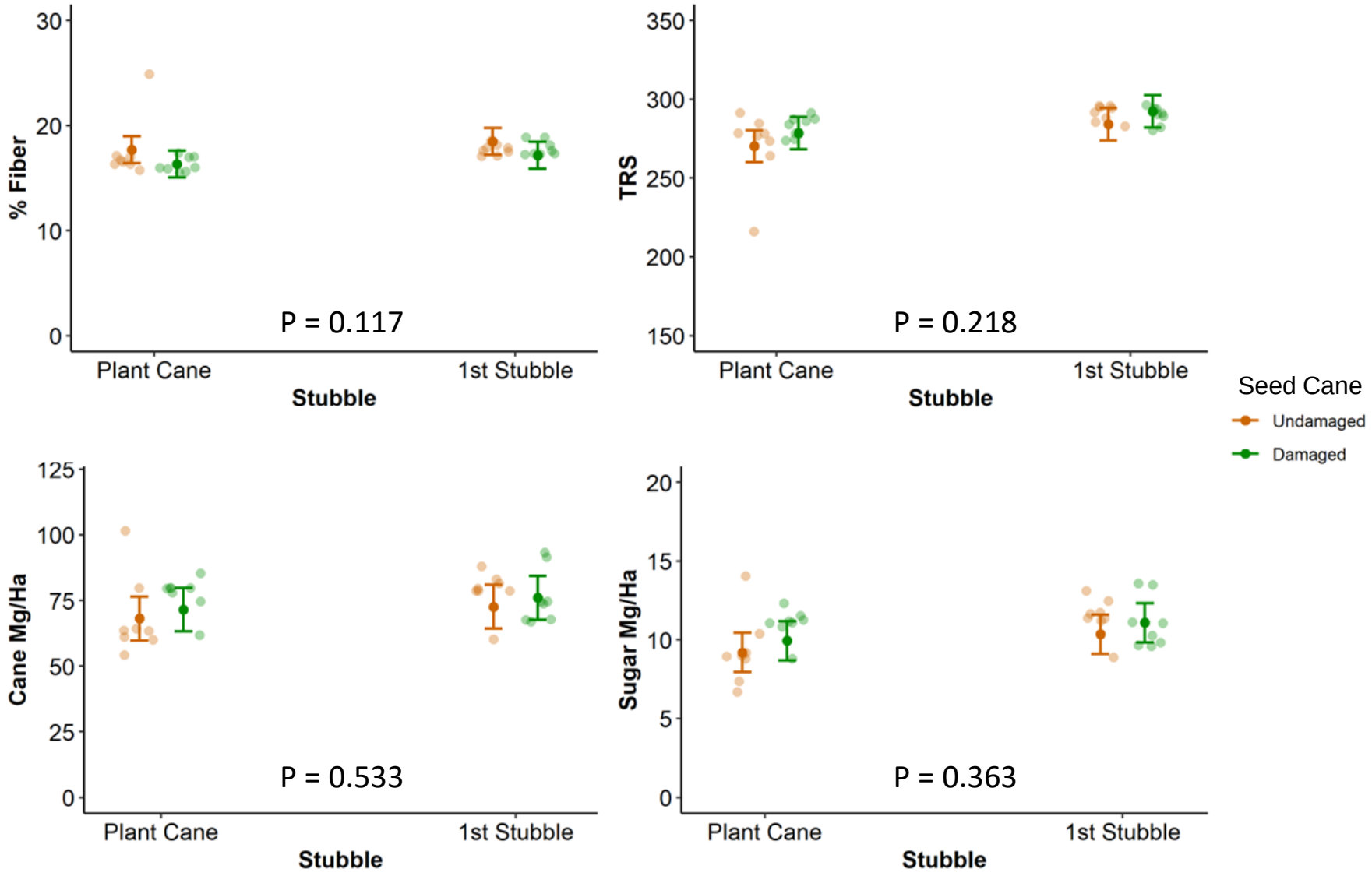


No effects of damaged seed on 615 emergence

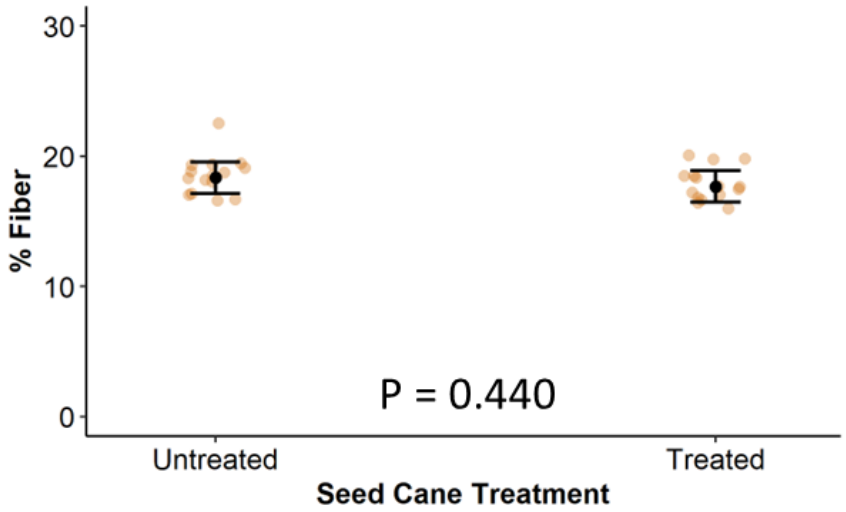


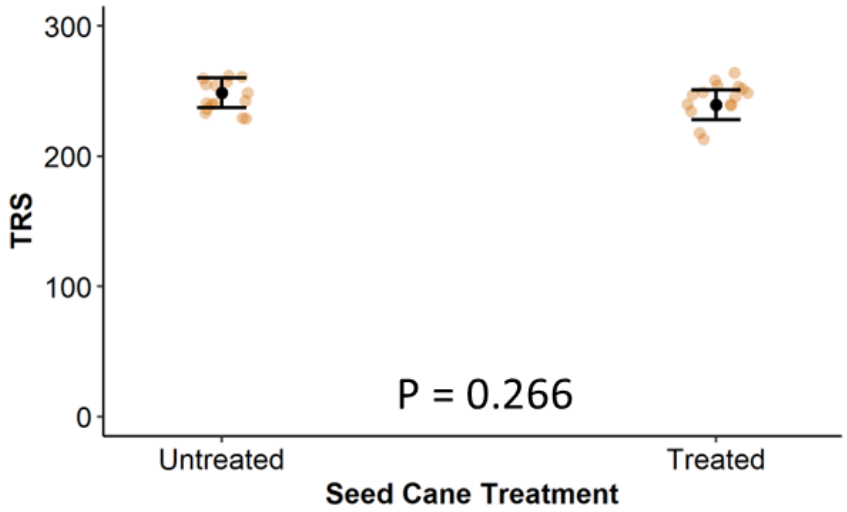


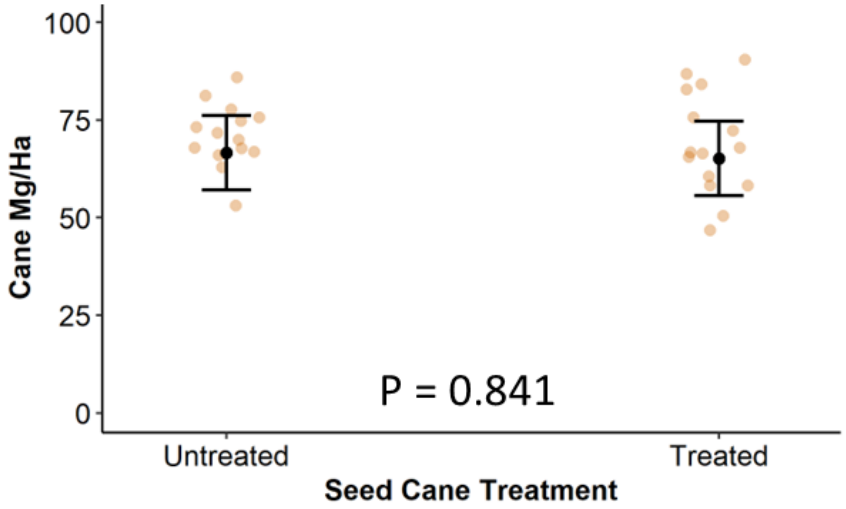
No effects of damaged seed on 950 yield

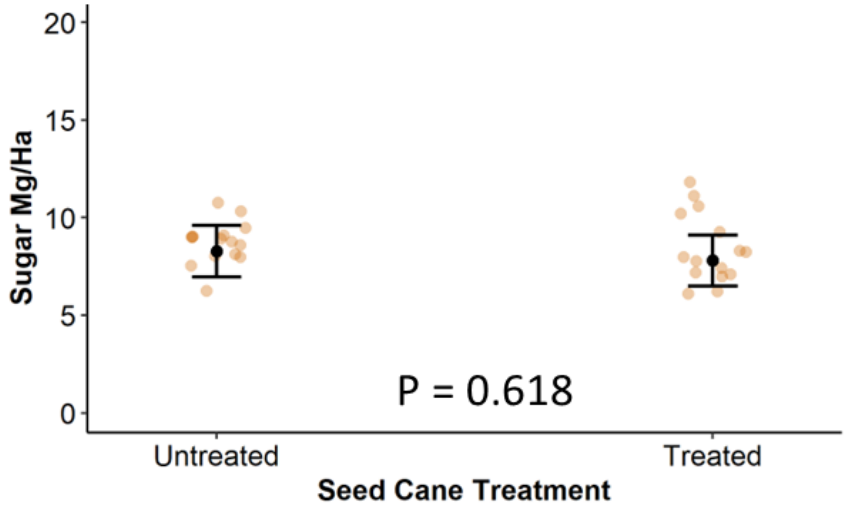


No effects of damaged seed on 615 PC yield

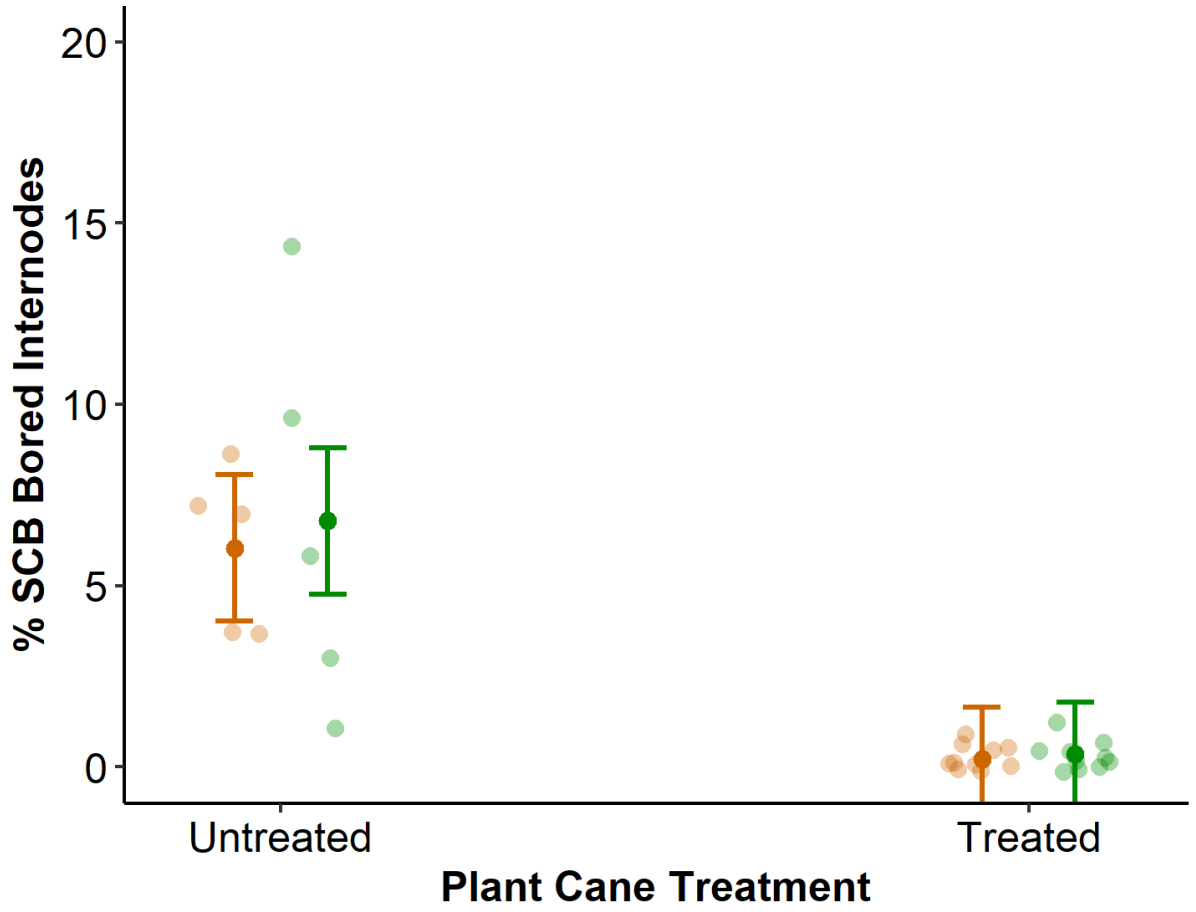








No effects of seed on 615 PC SCB damage



Variable	P-Value
Seed Cane	0.520
Plant Cane	<0.001
Seed*Plant Cane	0.669

Take home message

- Check your variety – some need more scouting
- Take care of your plant cane*
- Prevent early SCB damage
- Check that your treatment worked

Acknowledgements

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LSU AgCenter
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