

The Impact of Planting Date and Varietal Maturity Selection on Tarnished Plant Bug Management and Yield in Midsouth Cotton



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Justification for Research

- **Pest status has changed**
- **Currently the most important economic pest of cotton in Mississippi**
- **Resistance to multiple classes of insecticides**
- **Current insecticides only provide “marginal” control**

Foliar Insect Control in Mississippi



Objectives

- To evaluate cultural practices that can be integrated into a sustainable management program for TPB in cotton
- Reduce dependency on foliar applied insecticides



Materials and Methods

- **Split-Split Plot**
- **Four Planting Dates:**
 - Mid-April
 - Early May
 - Mid May
 - Early June
- **Two Varieties:**
 - DP0912 B2RF(Early)
 - DP0949 B2RF(Late)
- **Treatment Regimes:**
 - Sprayed for tarnished plant bugs
 - No control for tarnished plant bugs

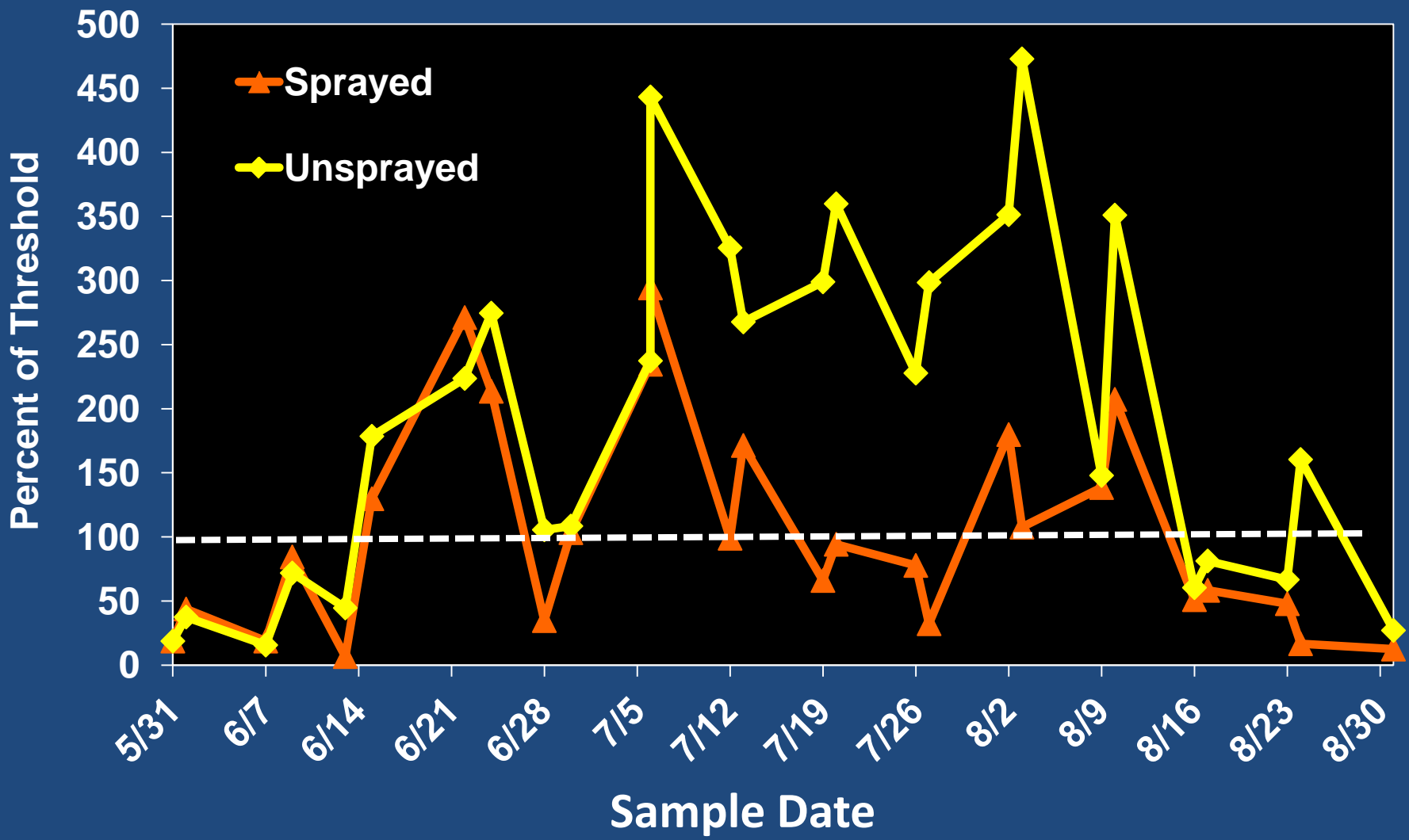


Materials and Methods

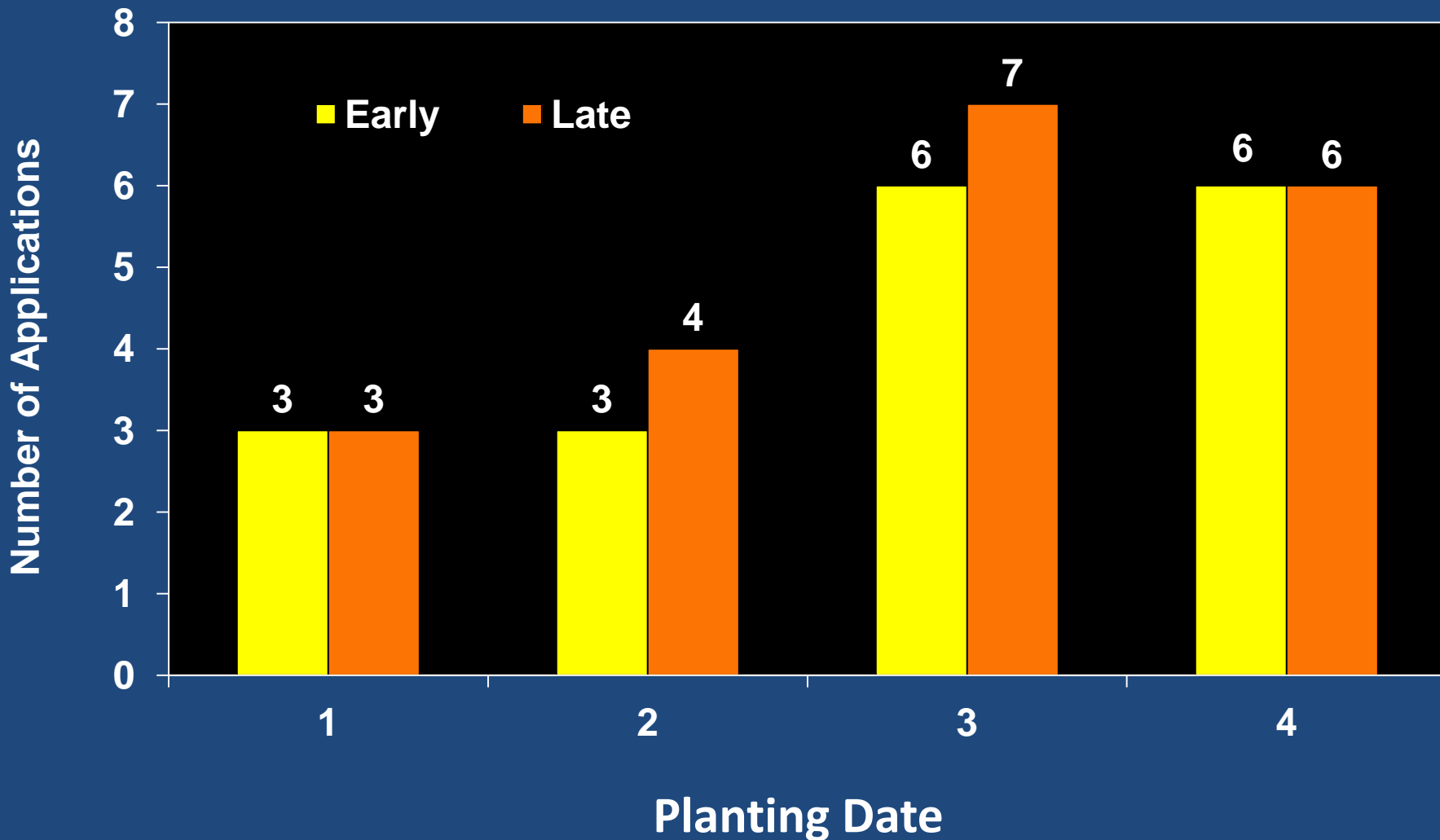
- 8 Rows x 75 ft.
- Sampled once weekly
- Sampling Methods:
 - Sweep Net
 - Drop Cloth
- All sprayed plots treated based on threshold in MS Insect Control Guide with insecticides labeled for tarnished plant bug control



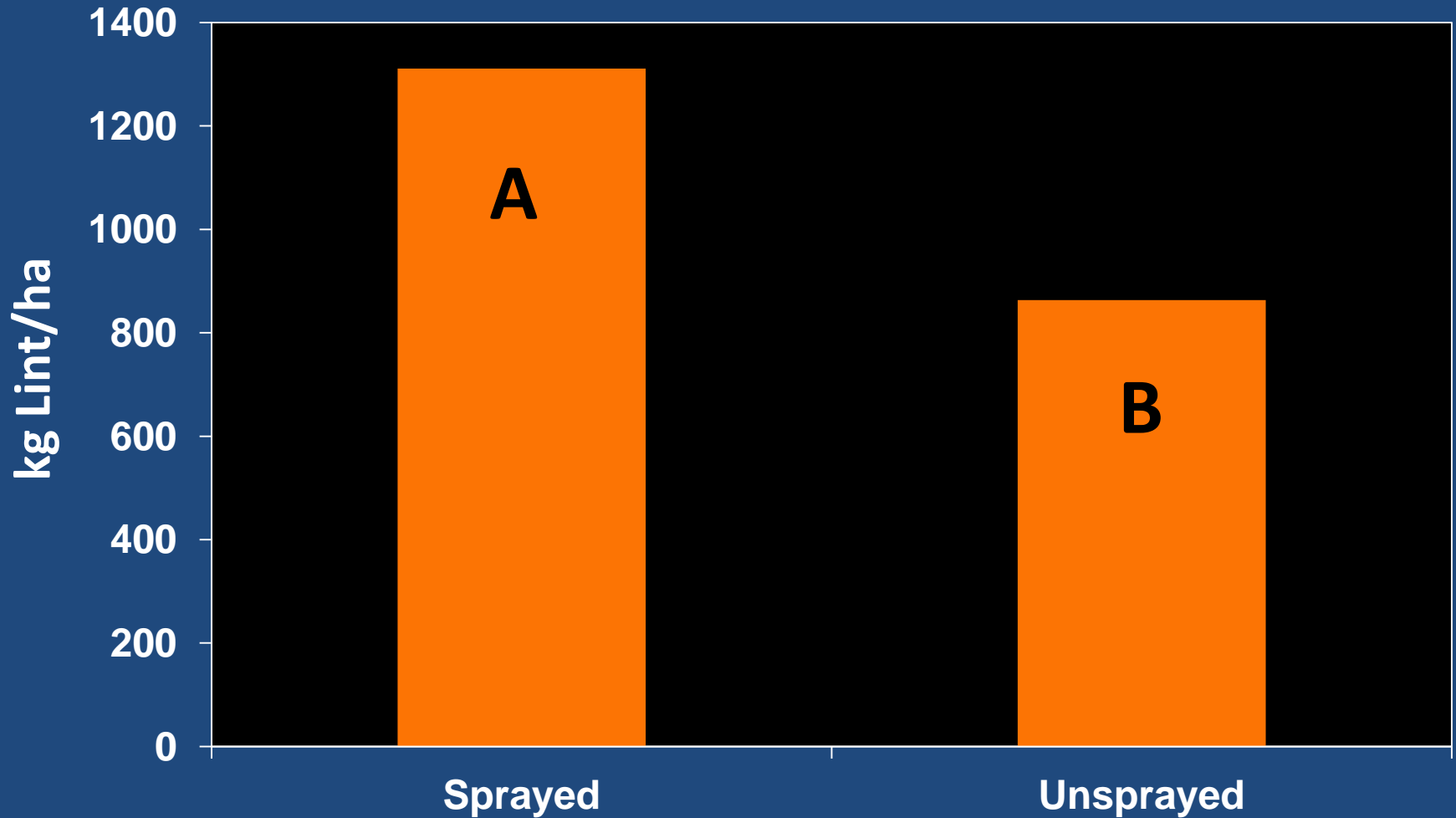
Mean Densities of *Lygus lineolaris*



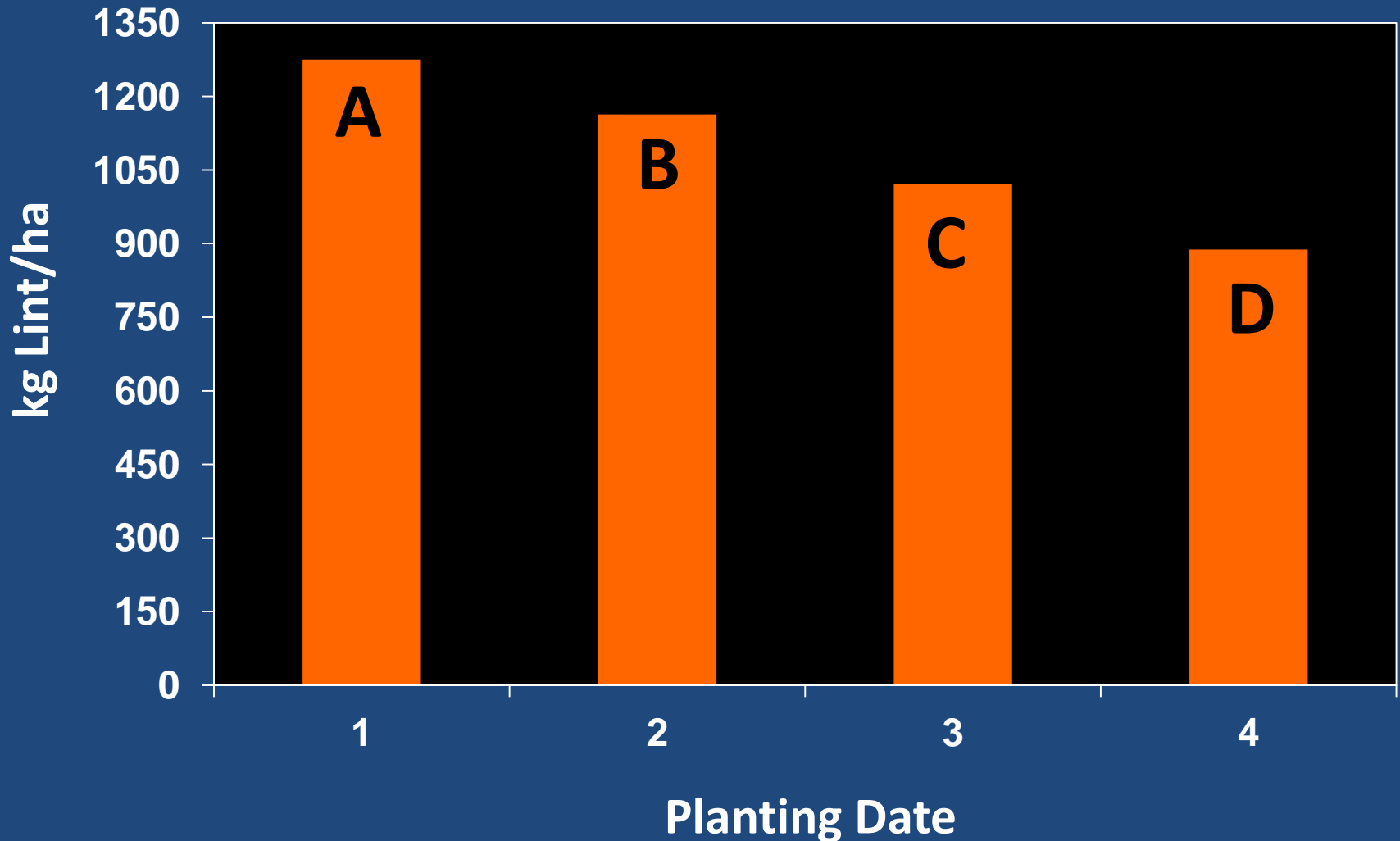
Mean Number of Applications 2010-2011



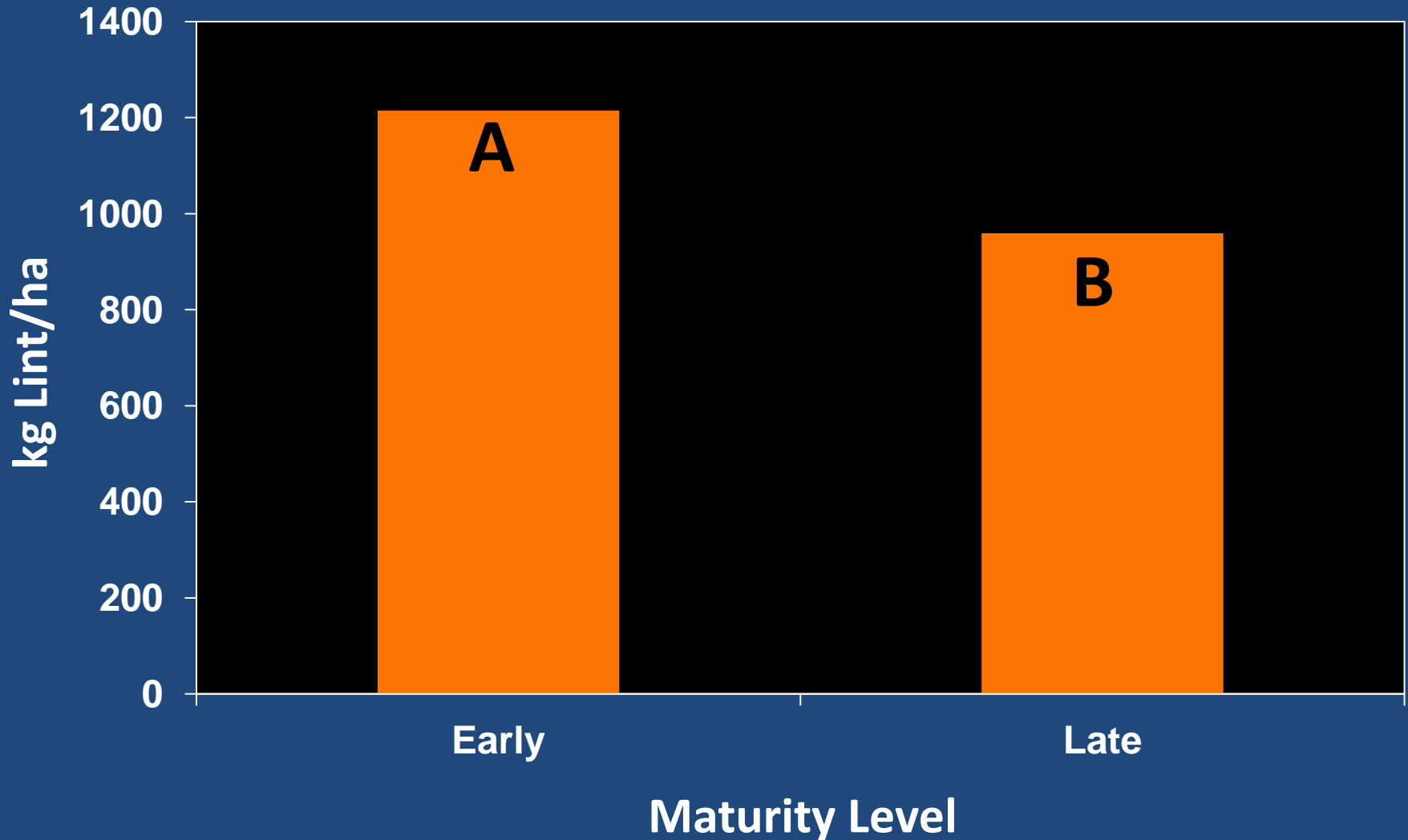
Effect of Insecticide Application on Yield



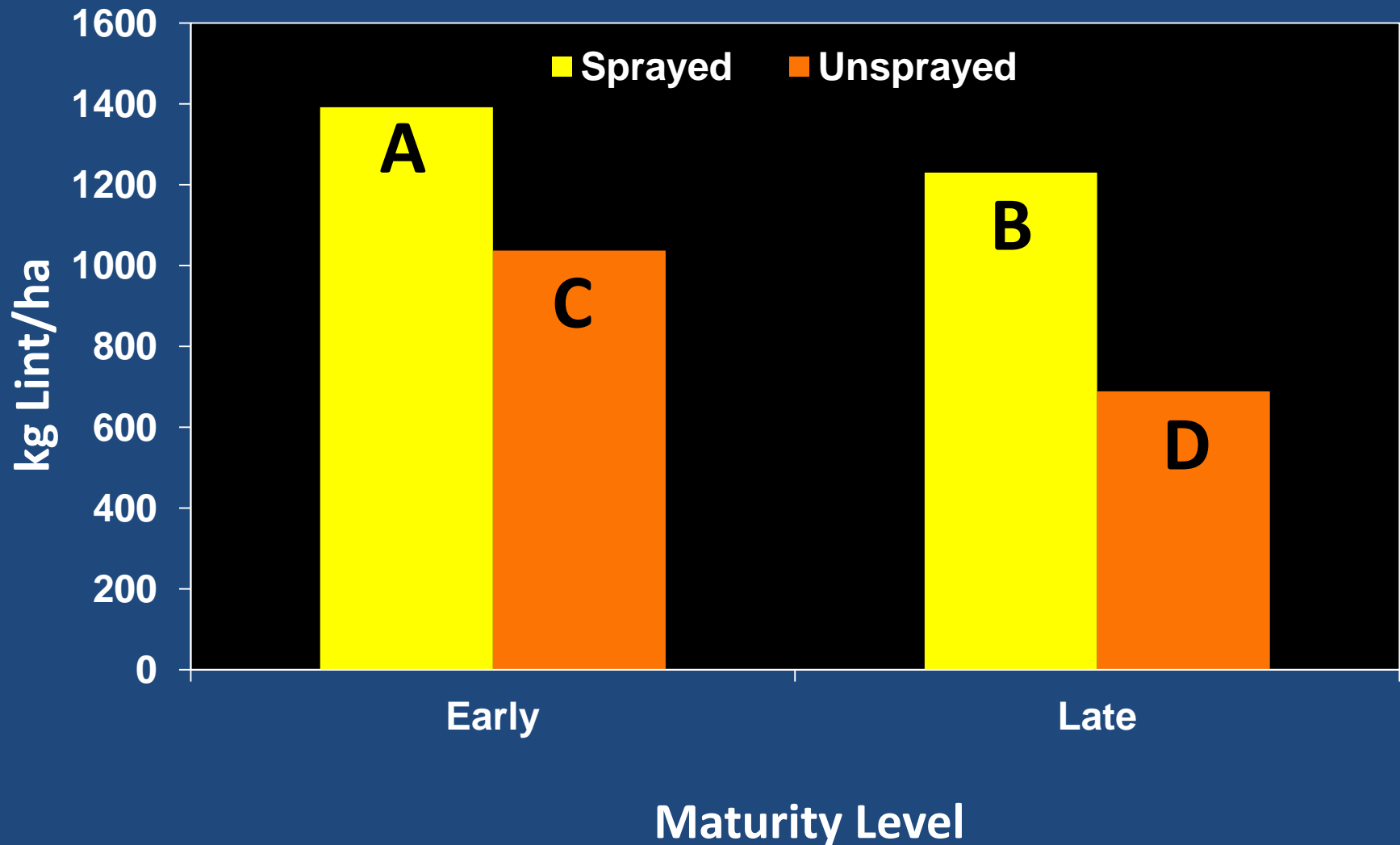
Effect of Planting Date on Yield



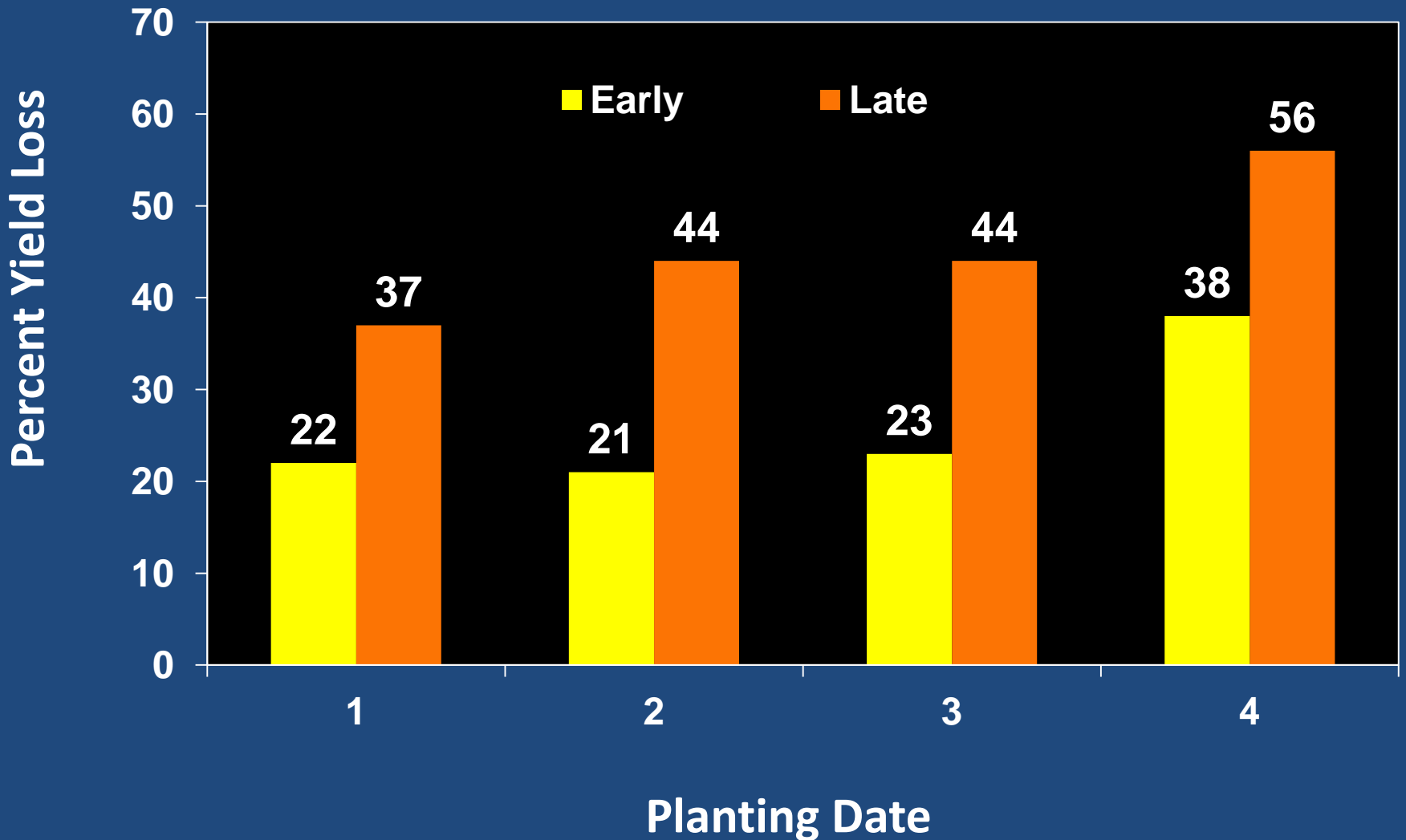
Effect of Varietal Maturity on Yield



Interaction Between Varietal Maturity and Insecticide App.



Impact of Tarnished Plant Bug on Yield





Conclusions

- Yield potential was higher at early planting dates and decreased as planting date increased.
- Later planting dates required more insecticide applications due to higher populations of late season TPB .
- Percent yield loss was greater on the late variety (DP 0949B2RF) than the early variety (DP 0912B2RF).

Conclusions

- **Number of plant bug applications may be reduced by planting early to avoid late season tarnished plant bug populations**
- **Reduced insecticide applications result in less impact on the environment and non-target species, which allows more beneficial insects to remain in place throughout the year**

Conclusions

- **Reduced insecticide applications also play an important role in resistance management for Tarnished Plant Bugs**
- **Managing for “earliness” with planting date and varietal maturity can maximize yields, reduce insecticide inputs, and make cotton production more sustainable**

Questions

