

# **Cotton Nitrogen Rates Following Corn and Soybeans**

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# Background

- Cotton varieties that receive supra optimal N may produce excessive growth and fewer reproductive structures than cotton receiving less N (Boquet et al., 1994).
- Application of N in excess of that required for optimum crop performance can reduce yield or fiber quality (Gerik et al., 1989).



# Background

- **Excessive N, especially in combination with high late-season moisture availability can delay maturity, reduce harvesting and ginning percentages, and promote boll shedding, disease and insect damage (Hodson and MacLeod, 1988).**



# LSU Recommendations Nitrogen rates

Soil Type	Dryland	Irrigated
Clay	90-120	100-120
Clay loam	90-120	100-120
Fine sandy loam	60-90	60-90
Loamy sand	60-90	60-90
Silt clay	90-120	100-120
Silt clay loam	90-120	100-120
Silt loam	60-90	60-90
Very fine sandy loam	60-90	60-90



# LSU Recommendations Nitrogen

- Nitrogen rates should be reduced 10-20 pounds per acre following soybeans and by 30-50 pounds per acre following a good winter legume crop (J. Barnett).
- The lower rates should be used on fields with a history of excessive stalk growth (J. Barnett).
- Excessive rates and late season applications usually delay maturity, increase boll rot and make cotton more attractive to insects (J. Barnett).



# Cotton following Soybeans

- **Nitrogen rates**
  - 0
  - 60
  - 90
  - 120
- **Coushatta silt loam**

# Plant Height

0 Nitrogen



120 Nitrogen





# Harvest Time

**0 Nitrogen**



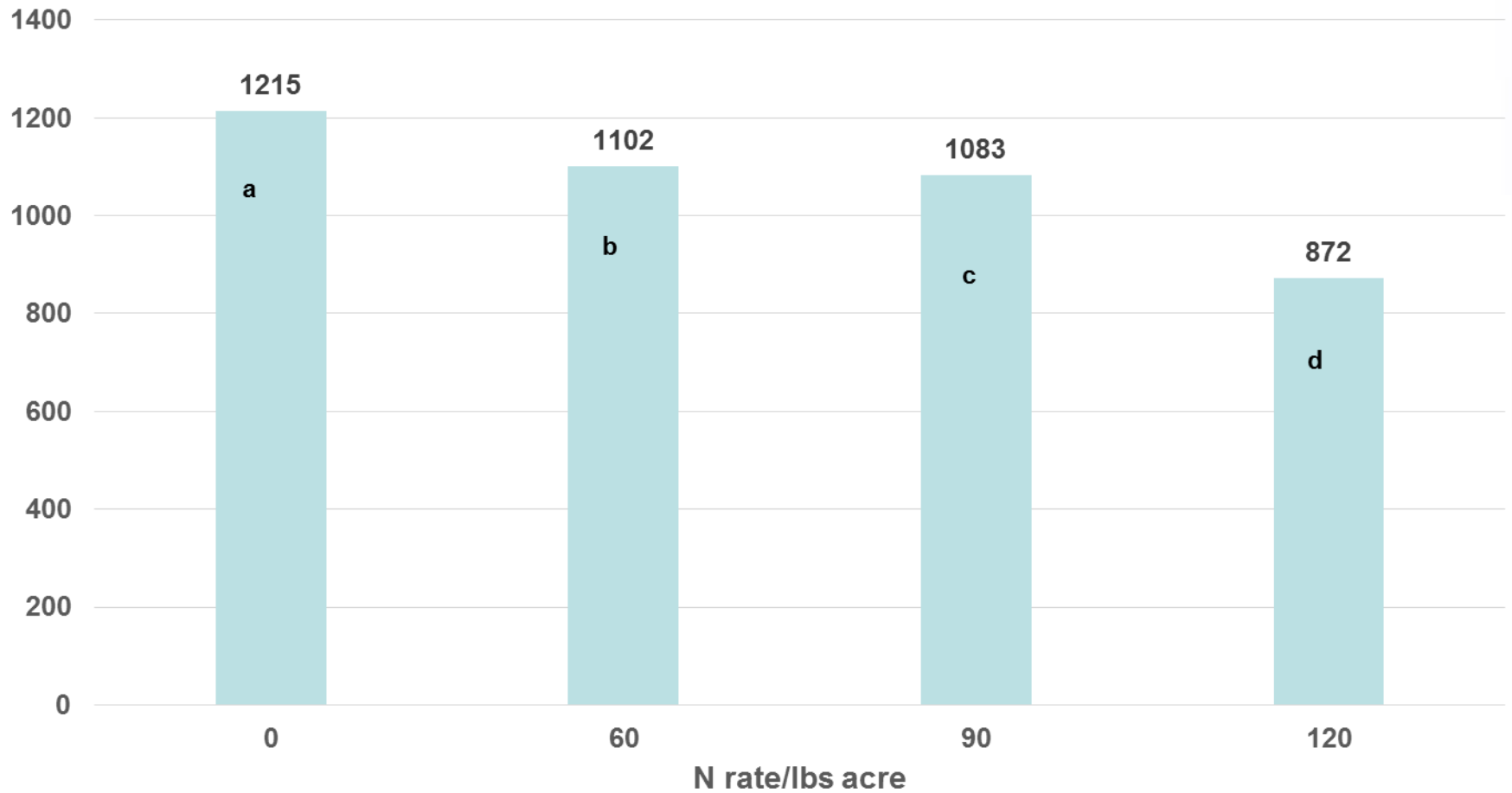
**120 Nitrogen**





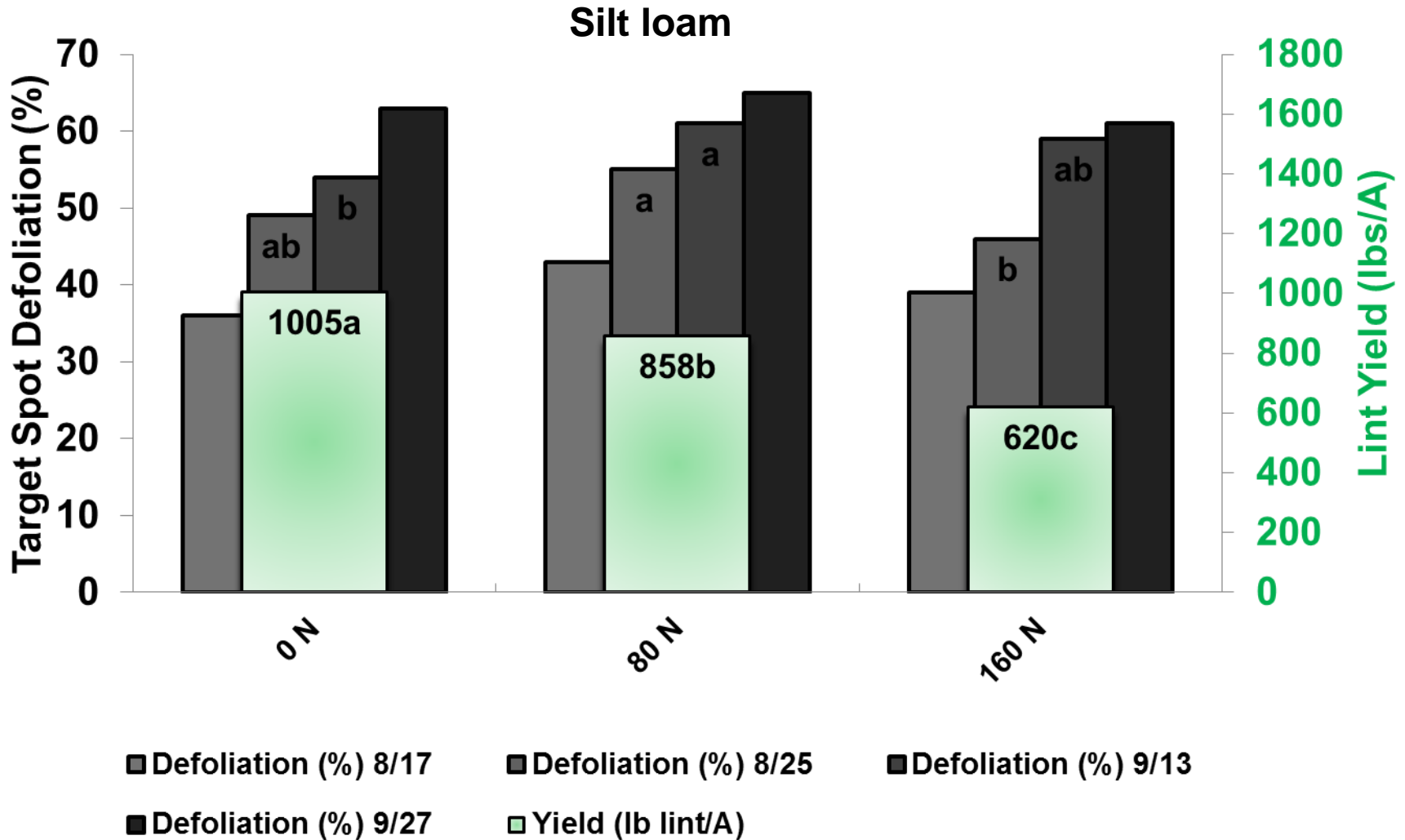


# 2017 lint yield per acre silt loam



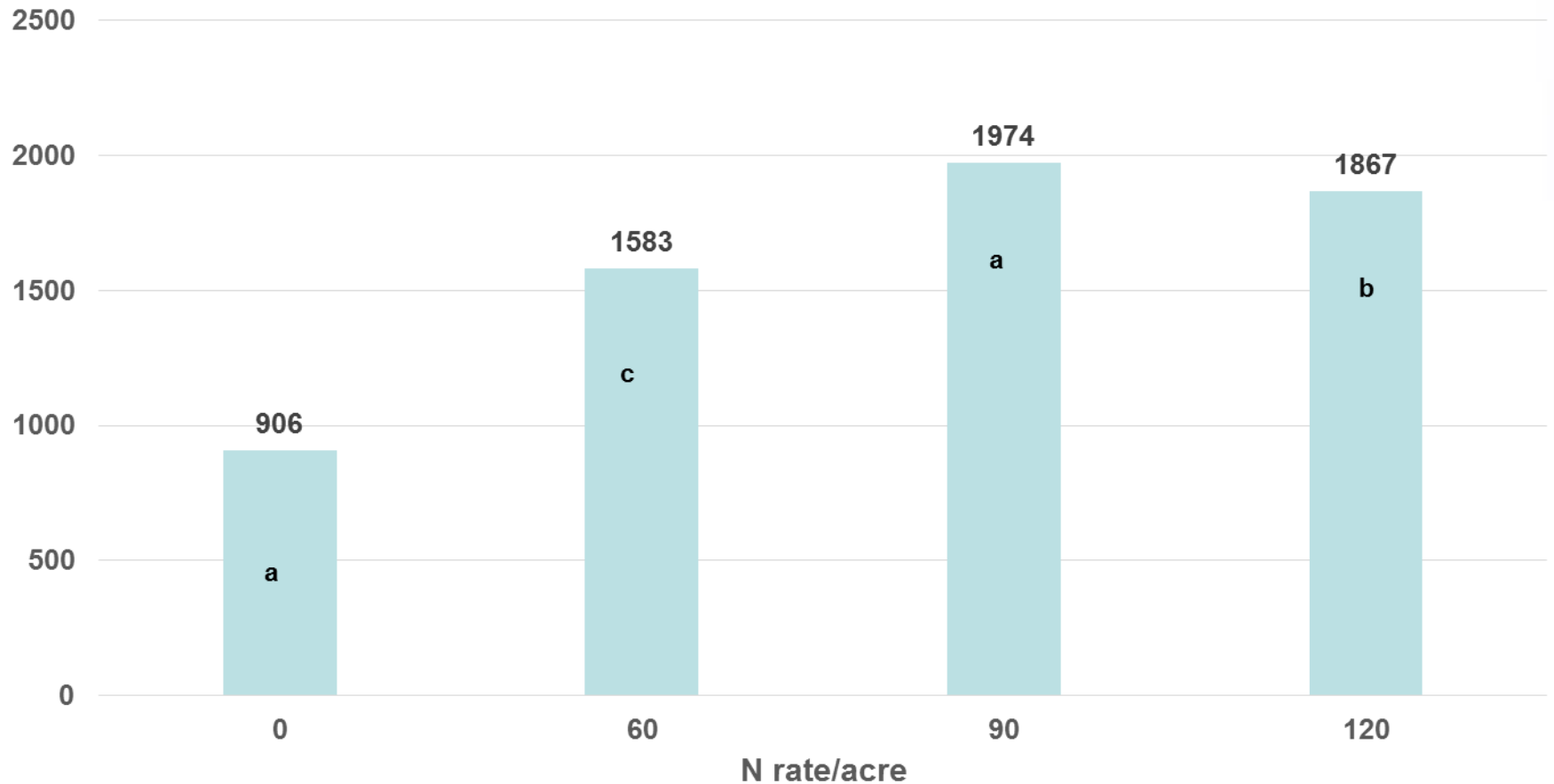
# PGR x N x PXR – Alexandria, LA – 2017

## Effect of N rate on Defoliation and Yield



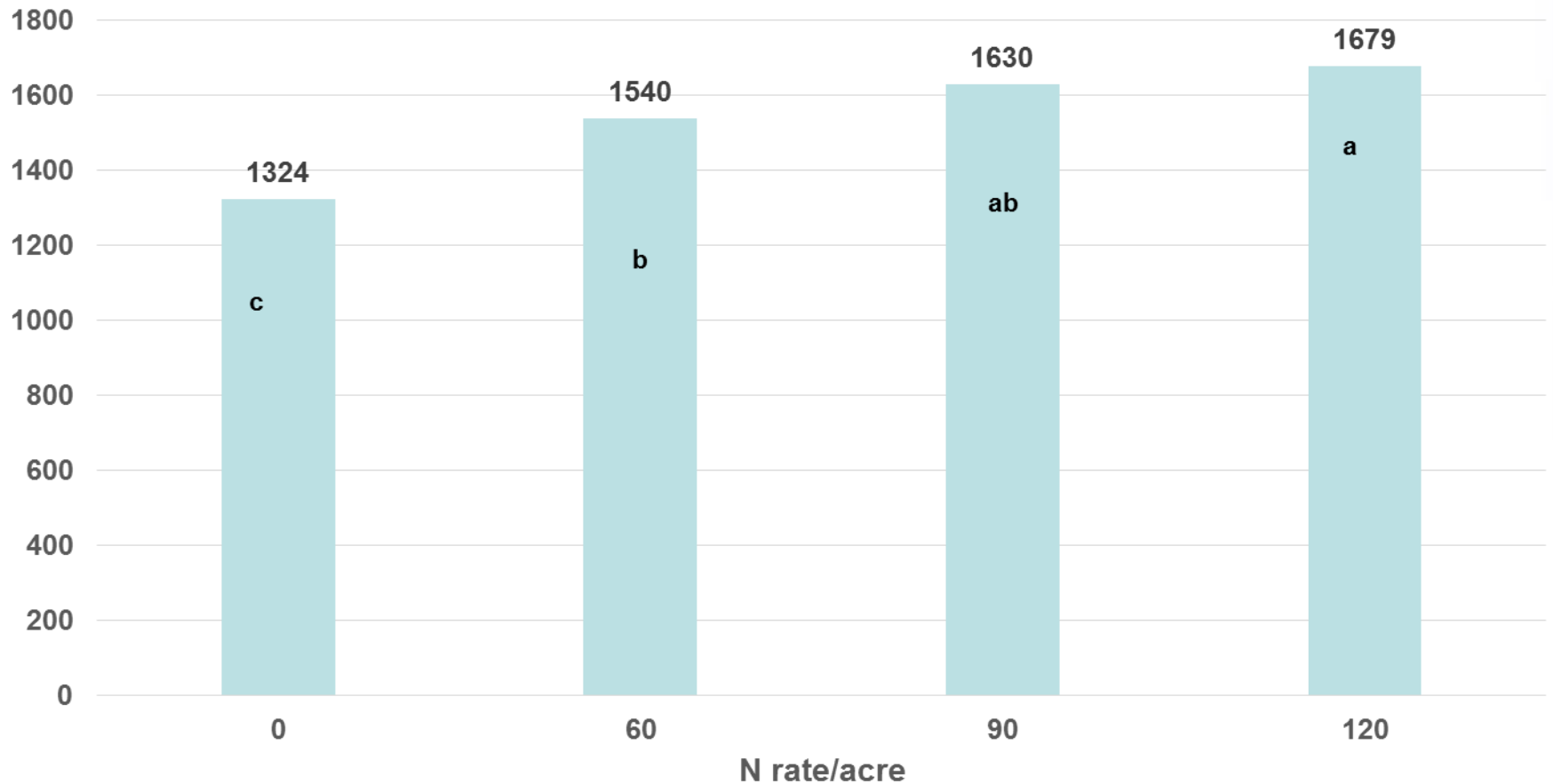


# 2017 lint yield per acre clay





# 2016 lint yield per acre clay





# LSU Recommendations Nitrogen rates

Soil Type	Dryland	Irrigated
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Loamy sand	60-90	60-90
Silt clay	90-120	100-120
Silt clay loam	90-120	100-120
Silt loam	<b>60-90</b>	60-90
Very fine sandy loam	60-90	60-90



# Cotton following Corn

- **Boquet**
  - Five years
  - 1997-2001
  - Commerce silt loam
  - Gigger silt loam-irrigated

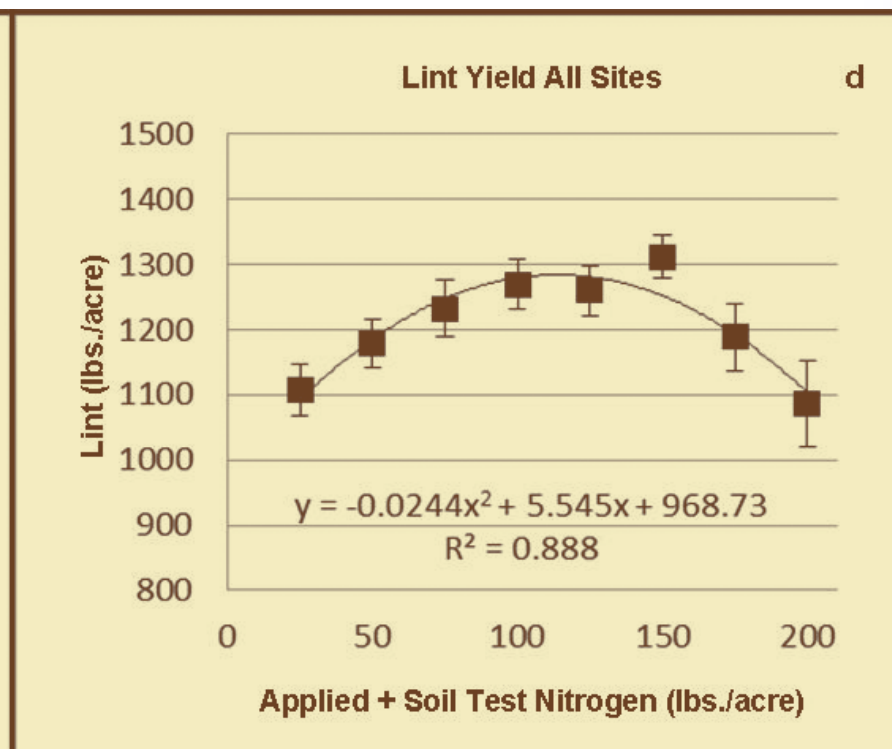
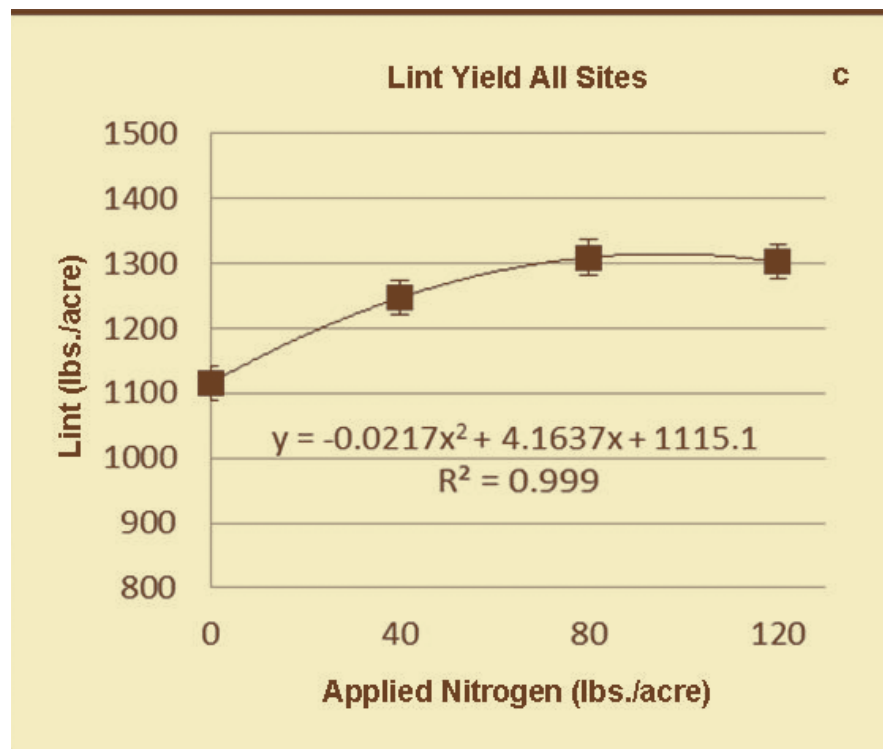


# Cotton following Corn- Optimal N Rate

Corn N Rate	0	150	200	250
Commerce silt loam	100	75	<b>62</b>	<b>50</b>
Gigger silt loam	75	50	<b>50</b>	<b>50</b>



# Nitrogen rates







# Conclusions

- **Cotton that yielded the most**
  - Was not the tallest
  - Was not the greenest
  - Soil type and previous crop have an impact on nitrogen rates
  - 2016 and 2017 results validate LSU nitrogen rate recommendations.

# Thank You



# Questions

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