

Use of poultry litter in production system

Josh Lofton
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Production systems

- Many production systems in Louisiana have been heavily degraded over the years
 - Intensive tillage operations
 - Mono-cropping systems
 - Land-Leveling



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How does this influence our production systems?

- Decreased organic matter
- Degradation in soil structure
 - Infiltration rates decrease
 - Compaction (paired with decreased OM)
 - Crusts
- Shifts in surface texture
- Alteration in available nutrients
- Ultimately crop yield



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Using poultry litter

- Research has suggested utilizing organic amendments to alleviate degraded ground
- Poultry litter selected
 - Availability
 - High nutrient level
 - Excellent holding capacity



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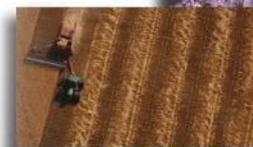
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- **Poultry Litter**
 - **Highly Diverse**
 - **Nutrients**
 - **Contents**

Decisions to utilize poultry litter (organic amendments)

- Does the amendment actually improve the production system?
 - Yield
 - Growth
- How do you appropriately manage
 - Rate
 - Application
 - Storage

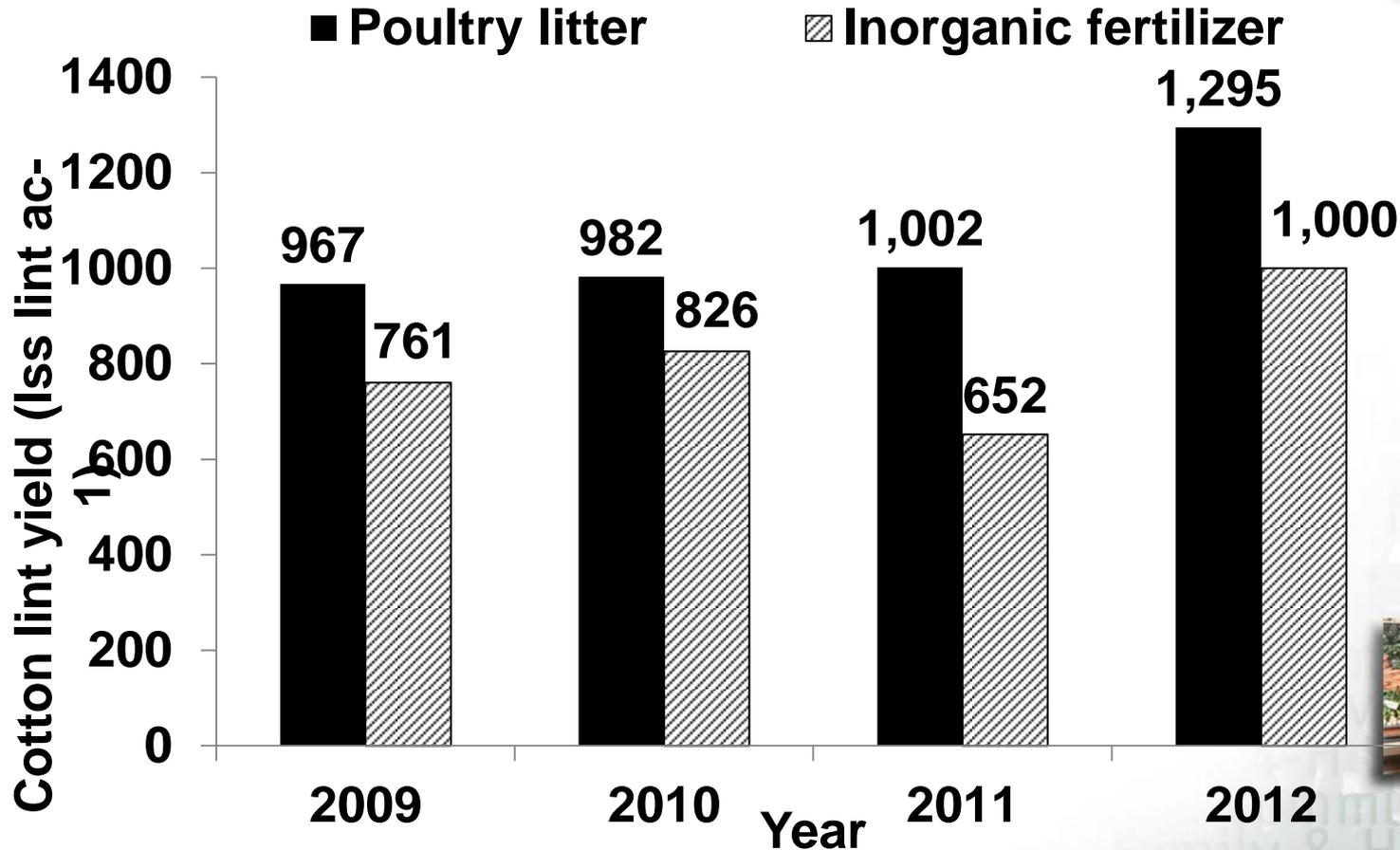


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Influence of cotton yields



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Reasoning for yield improvement?

- Inorganic nutrients were applied at the same rates of those with the poultry litter
- Increase in yields
 - Improved water and nutrient holding
 - Proliferations of natural microbes
 - Improvement of nutrient dynamics



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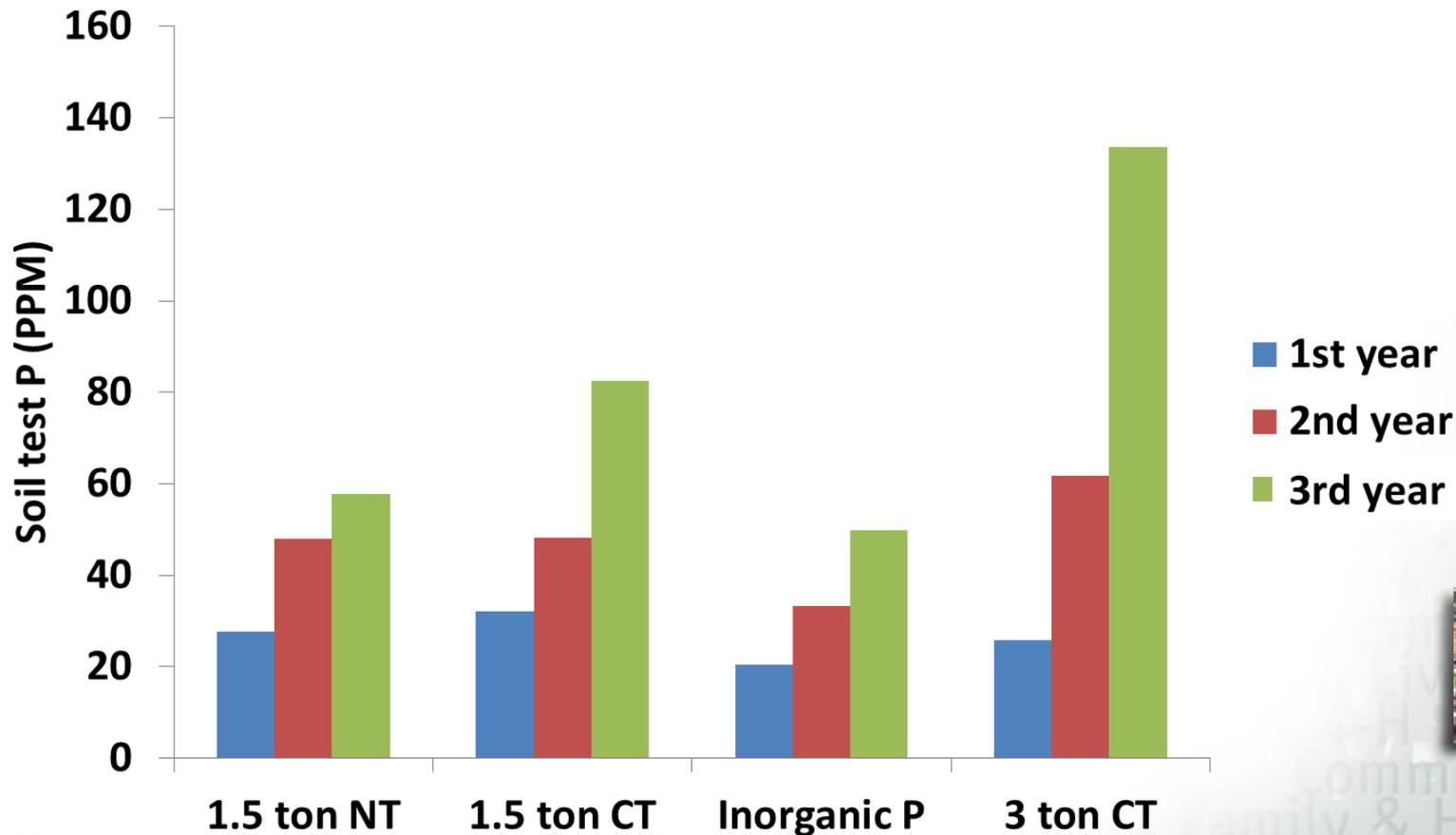
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Proper management of poultry litter- Determining right rate

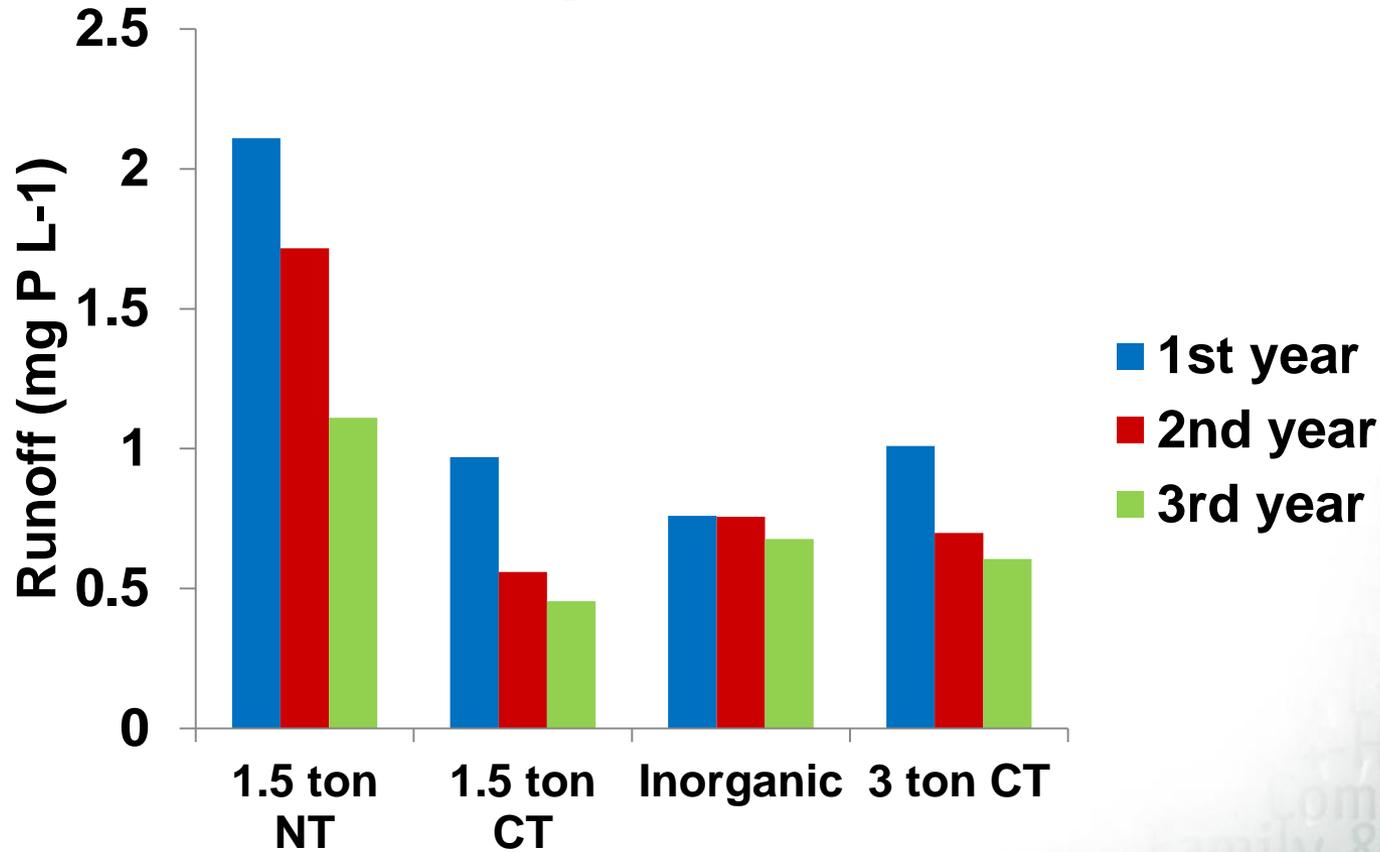


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Proper management of poultry litter- Determining right rate



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Proper management of poultry litter- Determining right rate

- The application of poultry litter to meet N demands
 - Little yield increases (not shown)
 - Increased soil P buildup
 - 3 ton application
 - Enhanced P runoff
- Application management
 - Influenced
 - Soil P buildup
 - Runoff



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Proper management of poultry litter- Managing

- Dealing with two highly variable systems
 - Proper management is sample, sample, sample
- Determine nutrient demands
 - Proper soil samples
 - Most important step to ensure sustainability



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Proper management of poultry litter- Managing

- Determine nutrient input
 - Nutrient content should be provided with purchase
 - Re-evaluation is recommended
 - Shifts in nutrients
 - Changes in moisture



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Proper management of poultry litter- Storage



- Varies based on length of storage
- Short-term
 - Minimize run-off
 - Maintain integrity
- Long-term
 - High nutrient losses possible
 - Long-term facilities
 - Permanent flooring
 - Weather-resistant cover

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Questions?



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