



# Exploring Management Options for Reducing Phosphorus Loss

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**KANSAS STATE**  
**UNIVERSITY**



# Sig Collins

Farmer on the Cheney Lake Watershed  
Citizen's Management Committee





A toxic algal bloom caused a three-day ban on water usage for a half-million residents in SE Michigan and Toledo.

Experts say it's a 'wake-up call.'

**TAINTED  
BLOOM**



**Cheney Lake,  
Kansas**



**Milford Reservoir,  
Kansas**

# Fall surface-broadcast P fertilizer

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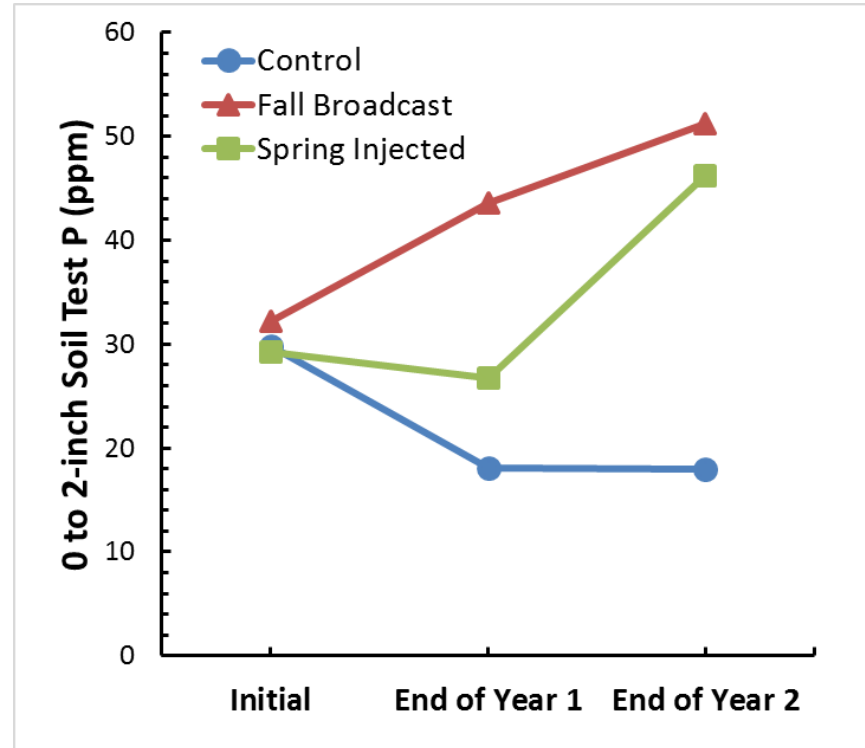
# What management options will reduce P loss?

- Can we minimize P loss with surface broadcast fertilizer?
- Will planting a fall cover crop reduce P loss?

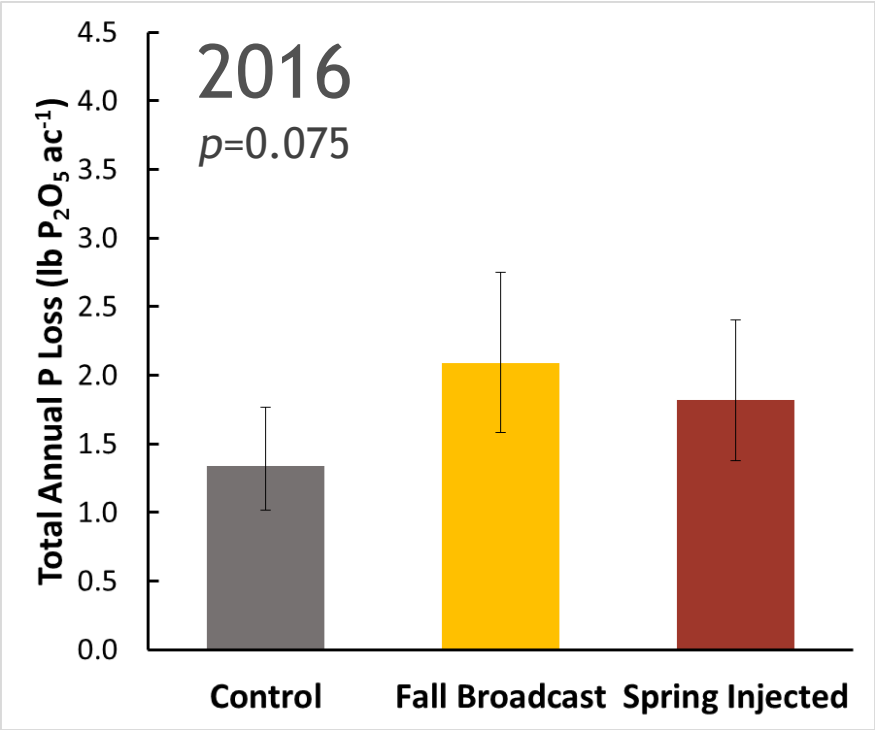
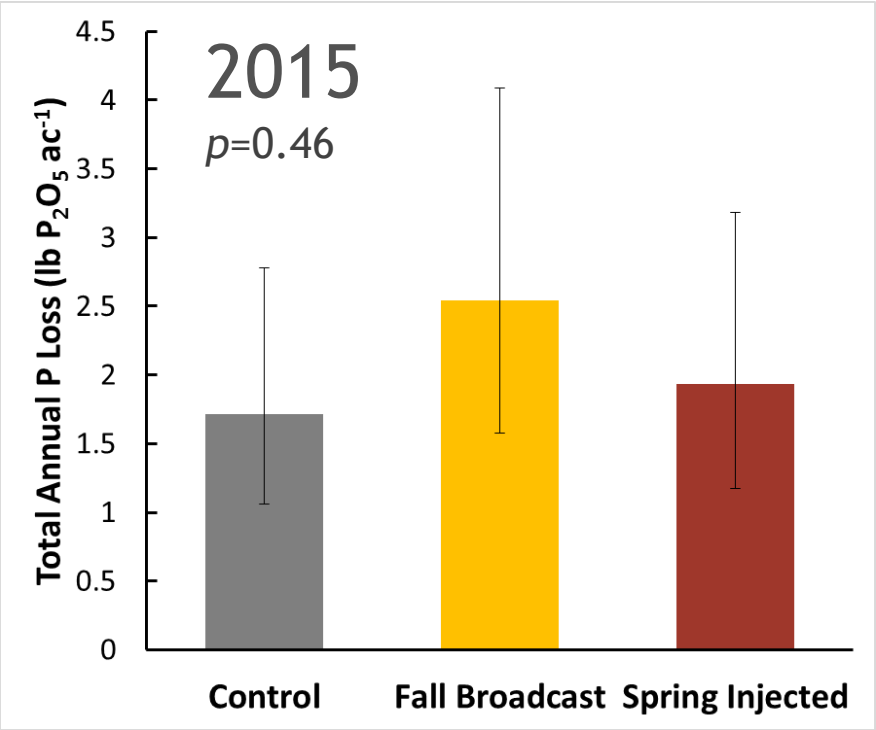


# Agricultural systems require time to fully respond to treatments

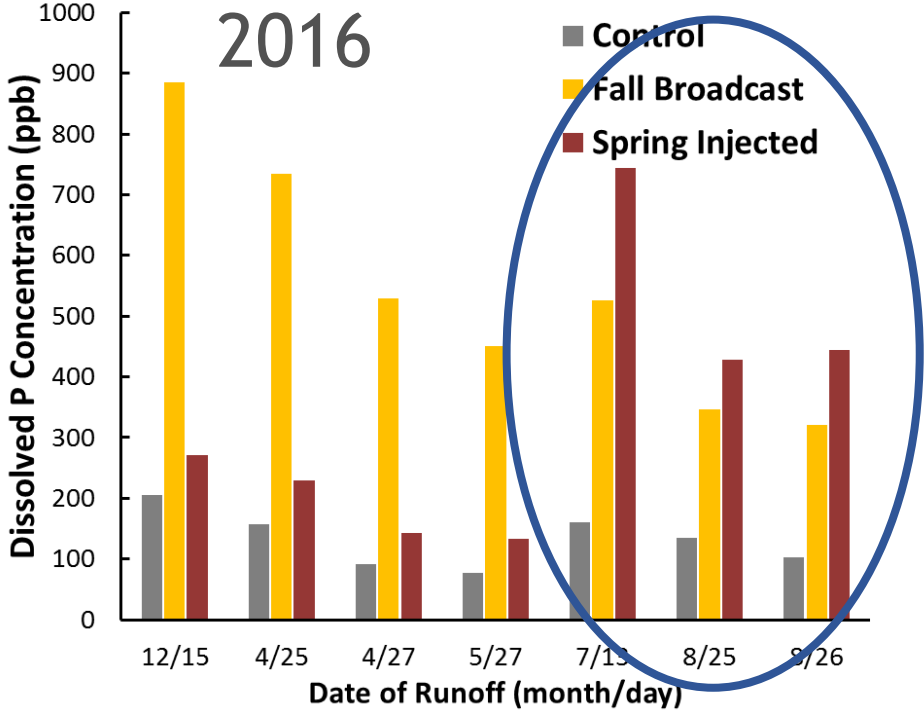
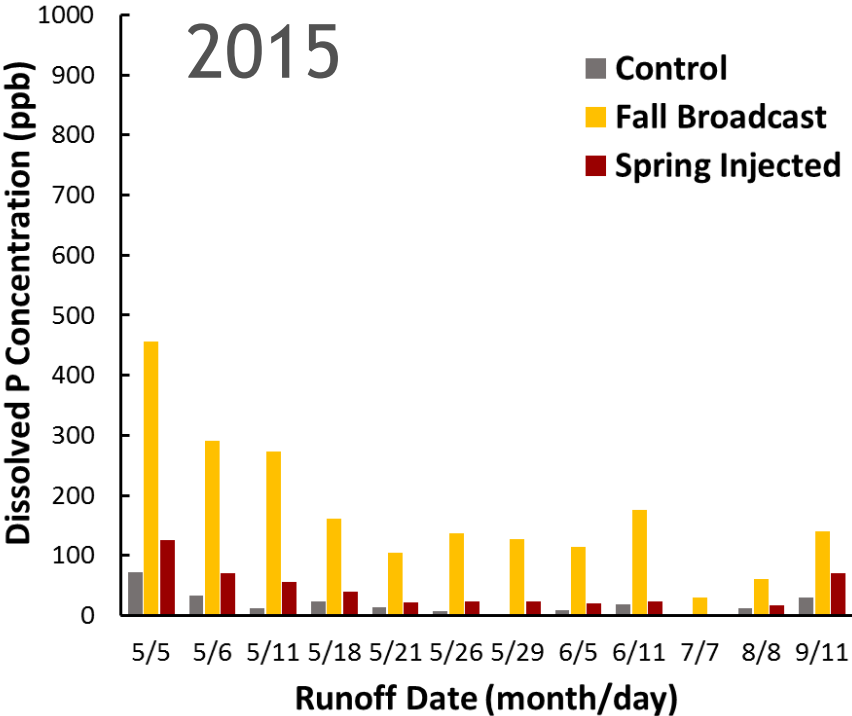
Completed 2 years of a 5-year study



# Fertilizer placement effects on total P loss in runoff water

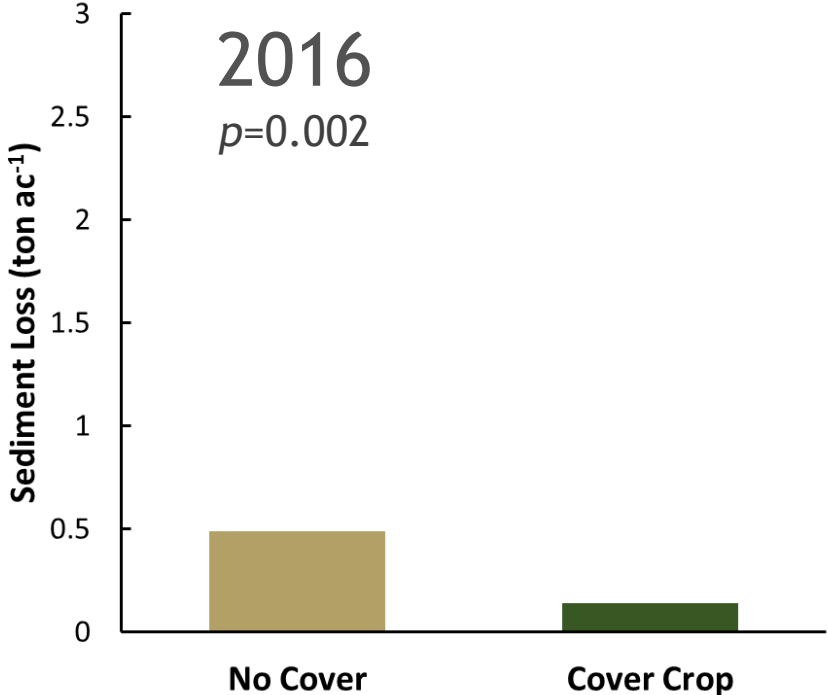
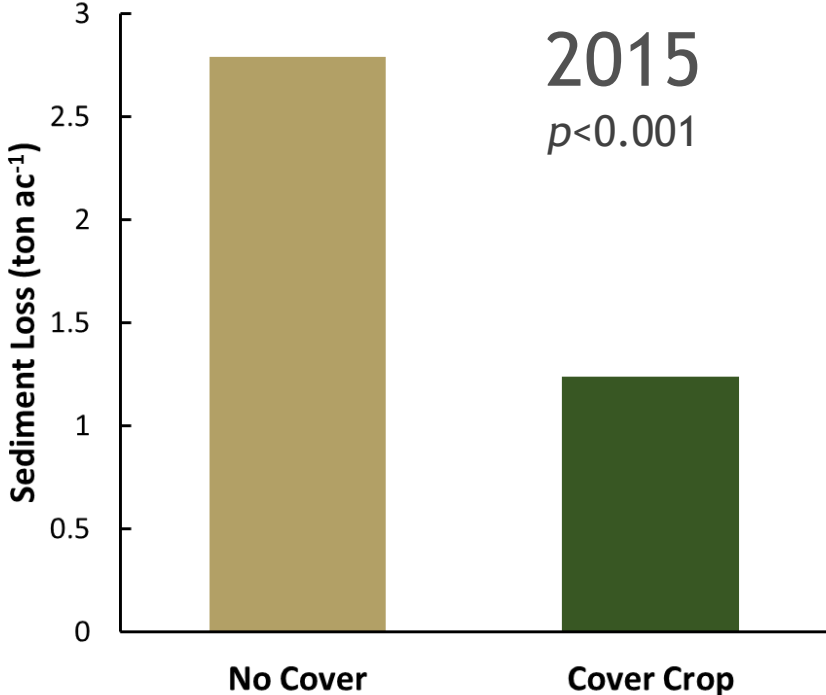


# Fertilizer placement effects on dissolved P concentration in runoff water

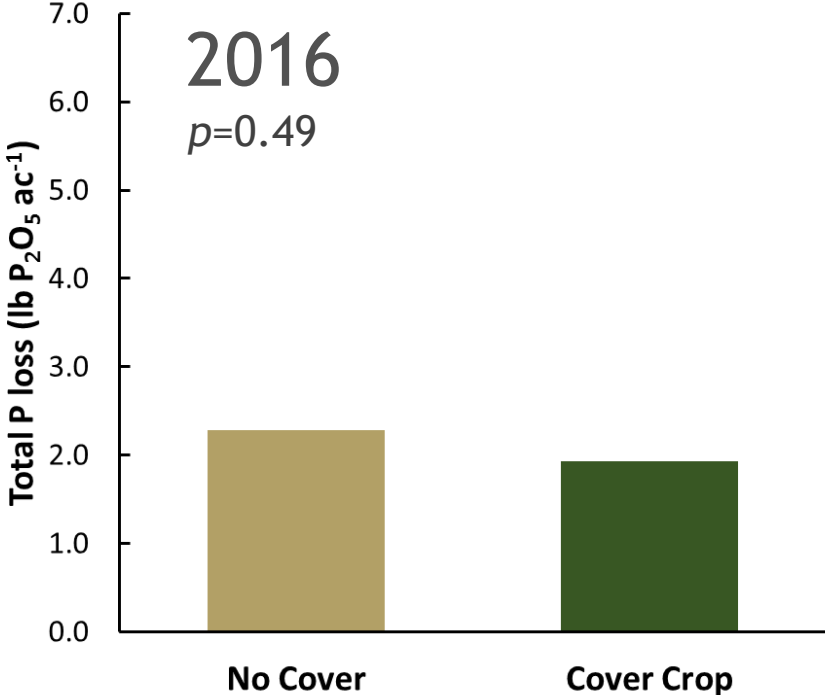
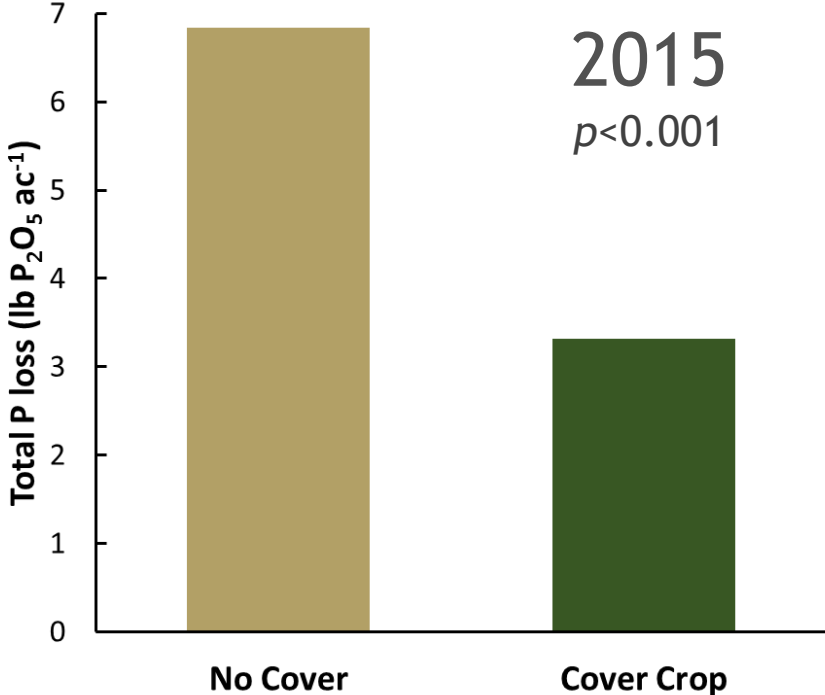




# Cover crop effects on sediment loss

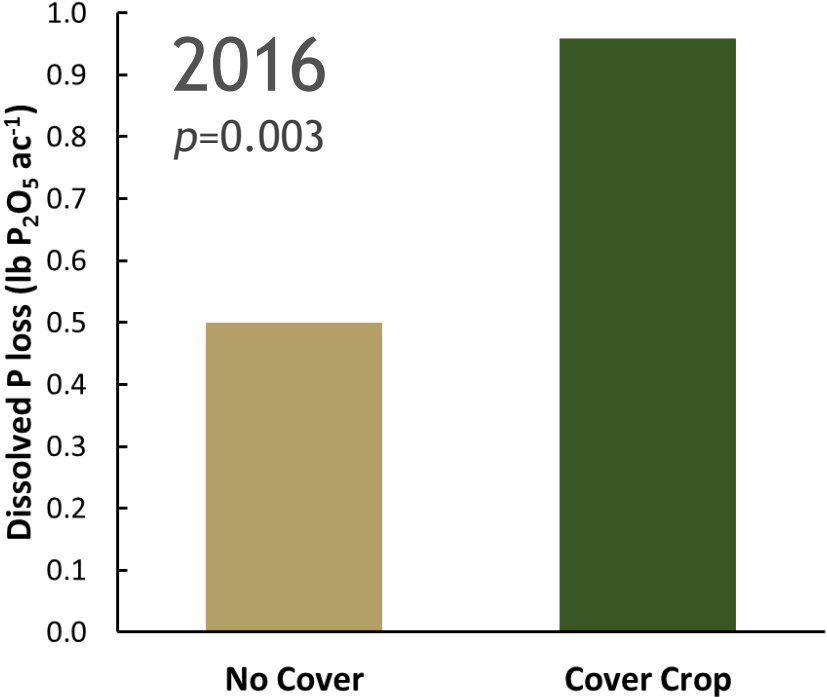
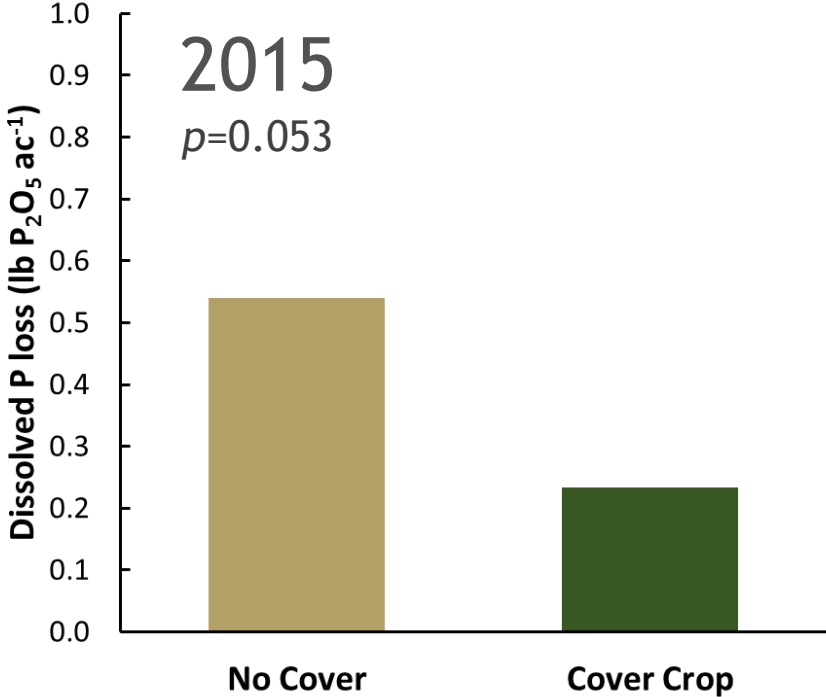


# Cover crop effects on total P loss





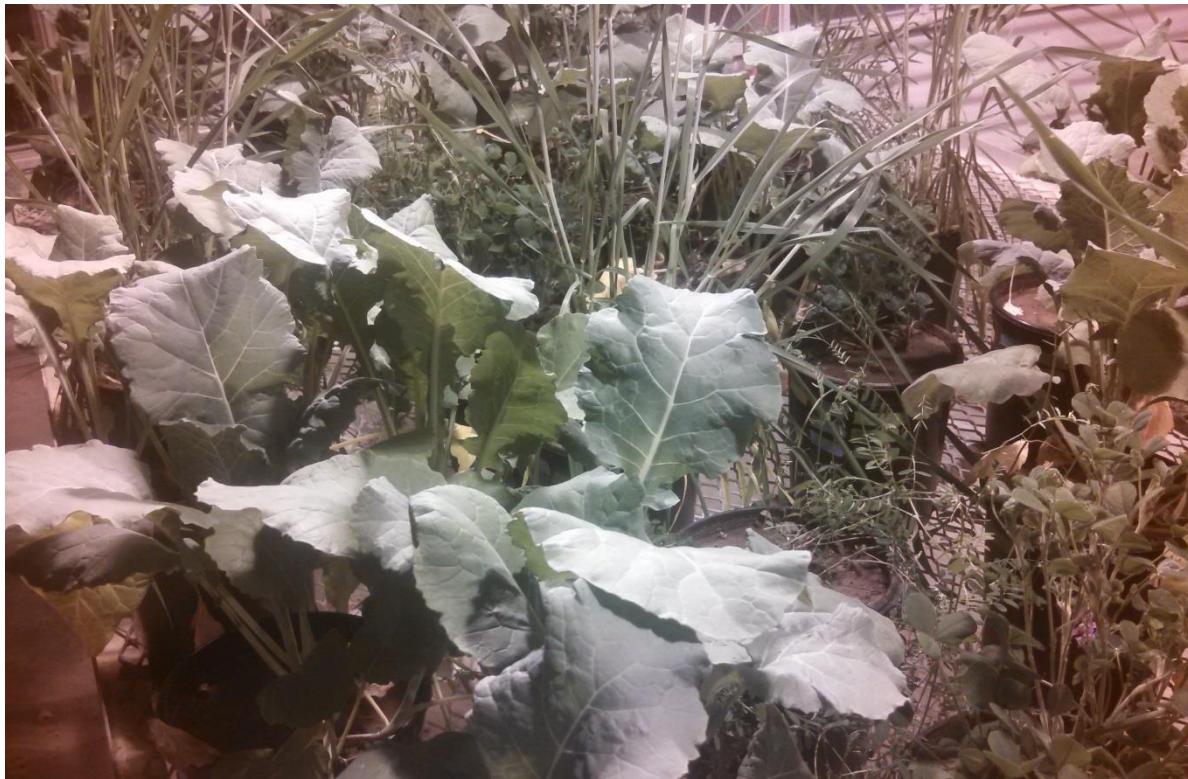
# Cover crop effects on dissolved P loss



# Related work - P loss from cover crops

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- Species
- Termination methods
- Termination timing
- Fertility





# Collaborative efforts: On-Farm Research

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# Remaining plans for the project





# Thank you to our funding sources

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Research  
Fund

**KANSAS STATE**  
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Department of Agronomy



United States Department of Agriculture  
Natural Resources Conservation Service



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