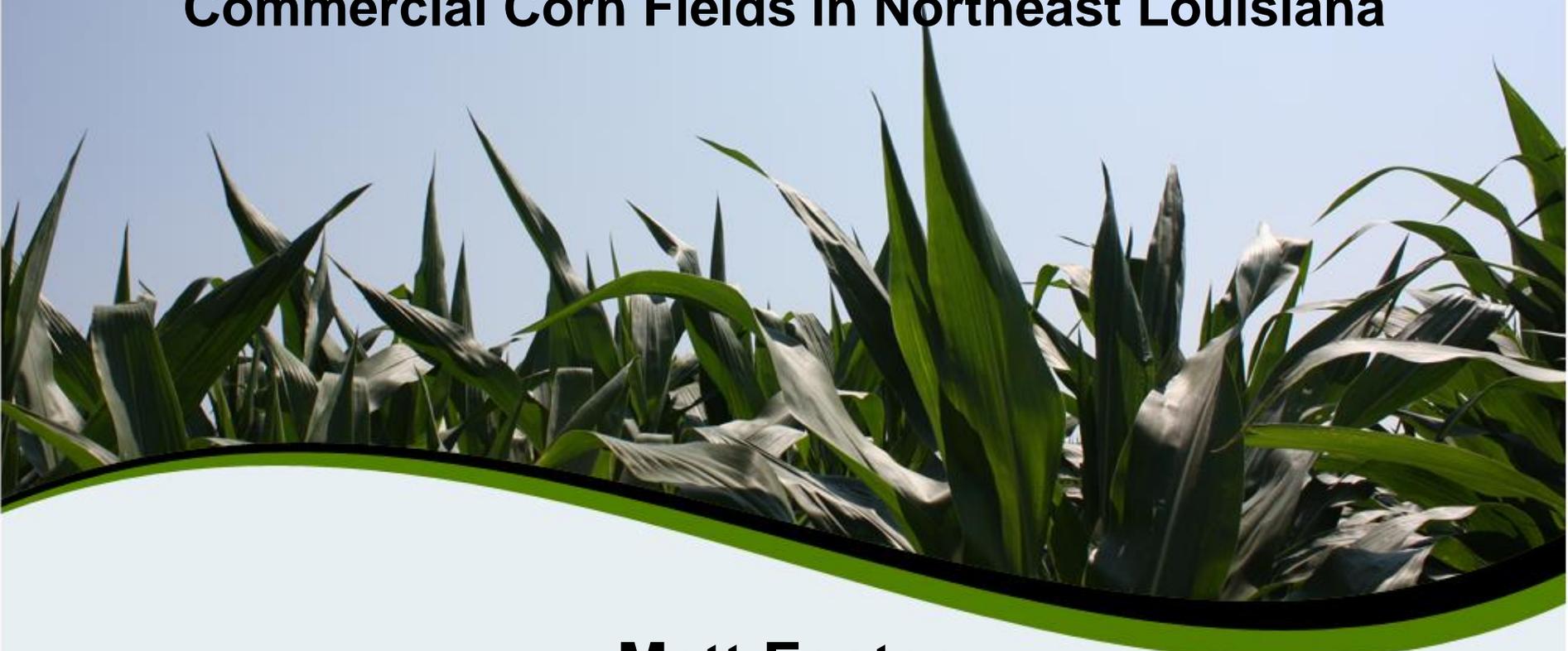


Evaluation of Phosphorus and Potassium Applications to Commercial Corn Fields in Northeast Louisiana



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Introduction

- Insufficient levels of phosphorus and potassium in soils may be reducing corn yields and decreasing profits for producers.
- Previous research was conducted during the 2019 growing season in northeast Louisiana.
- When only phosphorus was applied, there was a six percent yield increase and when only potassium was applied, there was an eleven percent yield increase.
- When both phosphorus and potassium were applied, there was a thirty-four percent yield increase.

Objective

- Evaluate the response of corn to phosphorus and potassium applications to fields located in northeast Louisiana that have very low or low soil test levels

Materials and Methods

Locations:

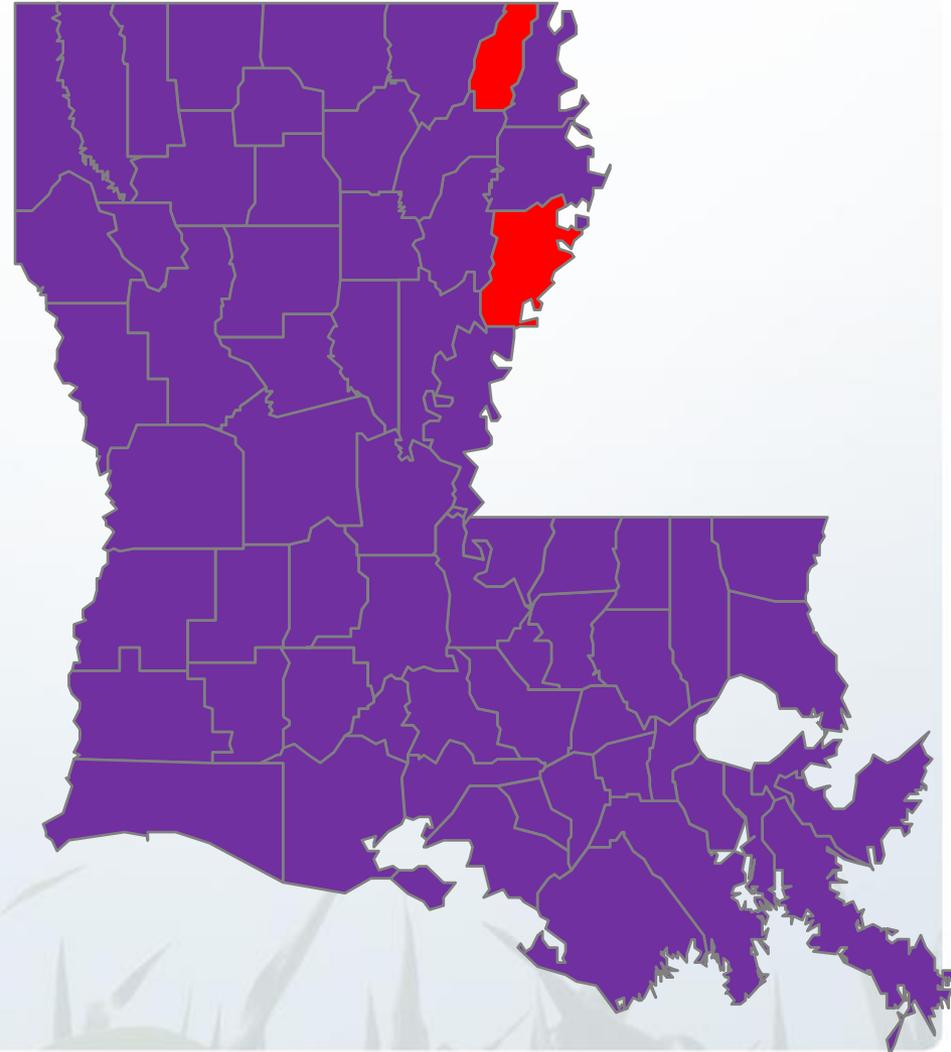
- Tensas and West Carroll parishes

Corn Hybrids:

- DeKalb DKC69-99 (Tensas)
- Dyna-Gro D57VC17 (West Carroll)

Fertilizer Treatments:

- No fertilizer
- Recommended rate
- High rate
- N requirement applied by grower





Materials and Methods

Fertilizer Source:

- 0-46-0
- 0-0-60

Fertilizer Application Timing:

- V3/V4 (Tensas)
- V2/V3 (West Carroll)
- Applied by hand

Plot Size:

- 4 rows (38 inch spacing) x 35 feet (Tensas)
- 4 rows (38 inch spacing-twin row) x 35 feet (West Carroll)

Experimental Design:

- RCBD with four replications
- 



Materials and Methods

Data Collected:

- Soil samples
 - 10 soil cores from the non-treated control plot of each rep
 - Tissue samples
 - 10 samples per plot (2 center rows)
 - Ear leaf at R1 growth stage
 - Yield (Bu/A)
 - At harvest, ears in each plot (2 center rows) were hand harvested and run through a mechanical sheller.
 - Moisture
 - Test weight
- 

Materials and Methods

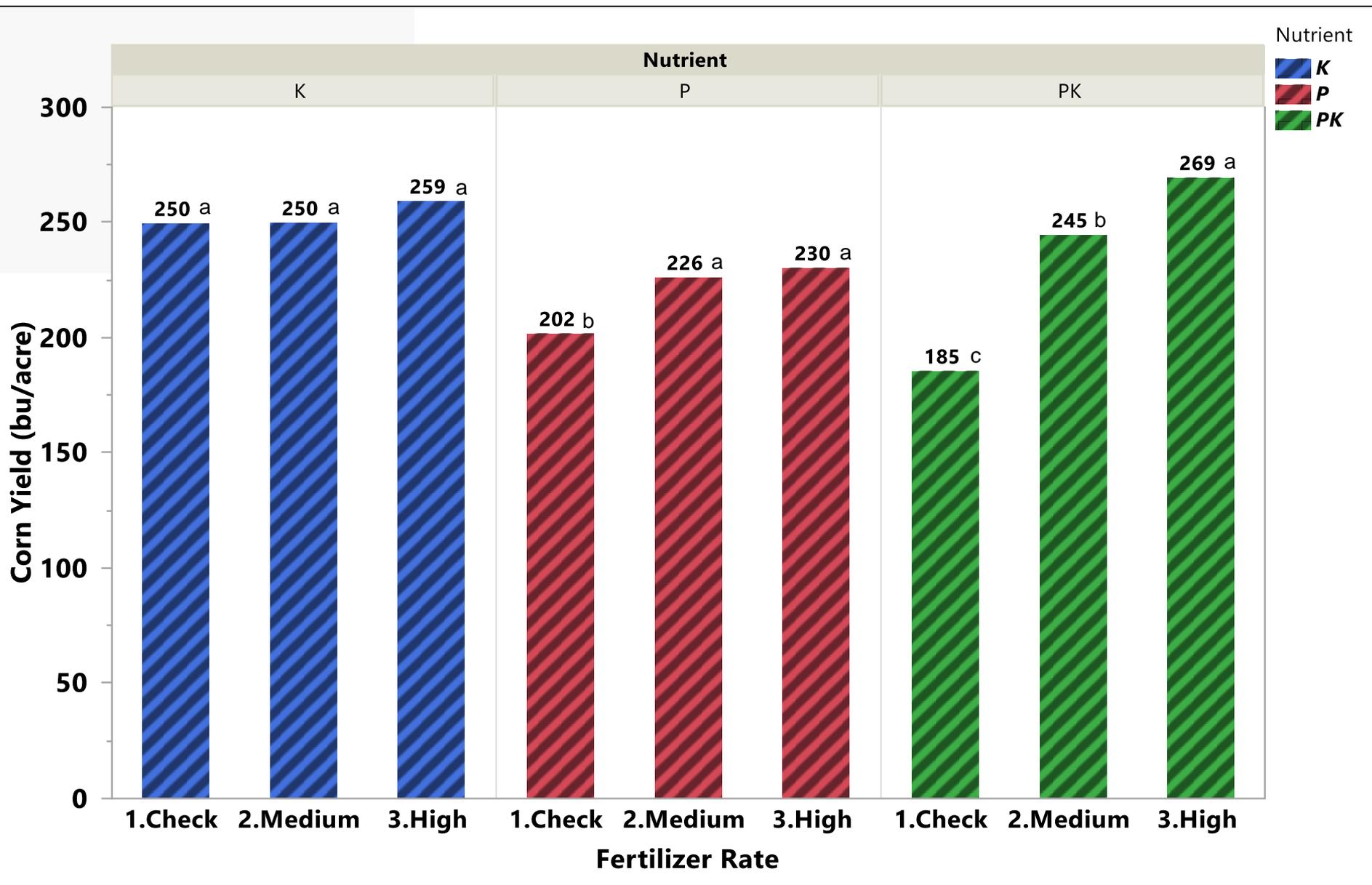
• Tensas (Panola Company)

- Bruin silt loam
 - pH: 6.5
 - P- 13.1 ppm (low)
 - K- 125.1 ppm (medium)
- K trial
 - Check- no K
 - Medium- 80 lbs/A
 - High- 120 lbs/A
 - All plots treated with P at 80 lbs/A
- P trial
 - Check- no P
 - Medium- 80 lbs/A
 - High- 120 lbs/A
 - All plots treated with K at 80 lbs/A
- P&K trial
 - Check- no P&K
 - Medium- 80 lbs P&K
 - High- 120 lbs P&K

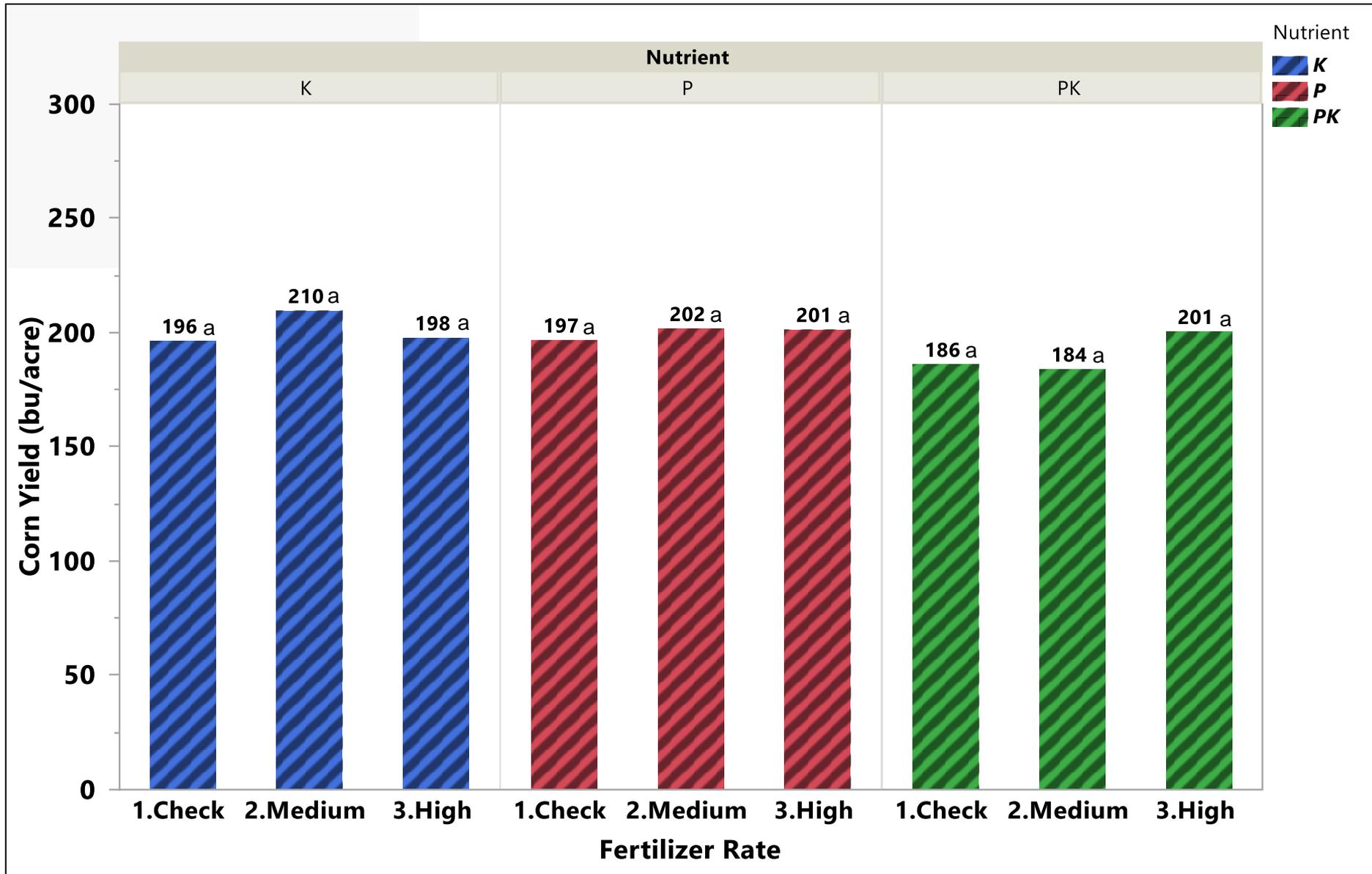
• West Carroll (Lingo Farms)

- Sharkey clay
 - pH: 7.2
 - P- 19.6 ppm (low)
 - K- 341.6 ppm (very high)
- K trial
 - Check- no K
 - Medium- 60 lbs/A
 - High- 100 lbs/A
 - All plots treated with P at 60 lbs/A
- P trial
 - Check- no P
 - Medium- 60 lbs/A
 - High- 100 lbs/A
 - All plots treated with K at 60 lbs/A
- P&K trial
 - Check- no P&K
 - Medium- 60 lbs P&K
 - High- 100 lbs P&K

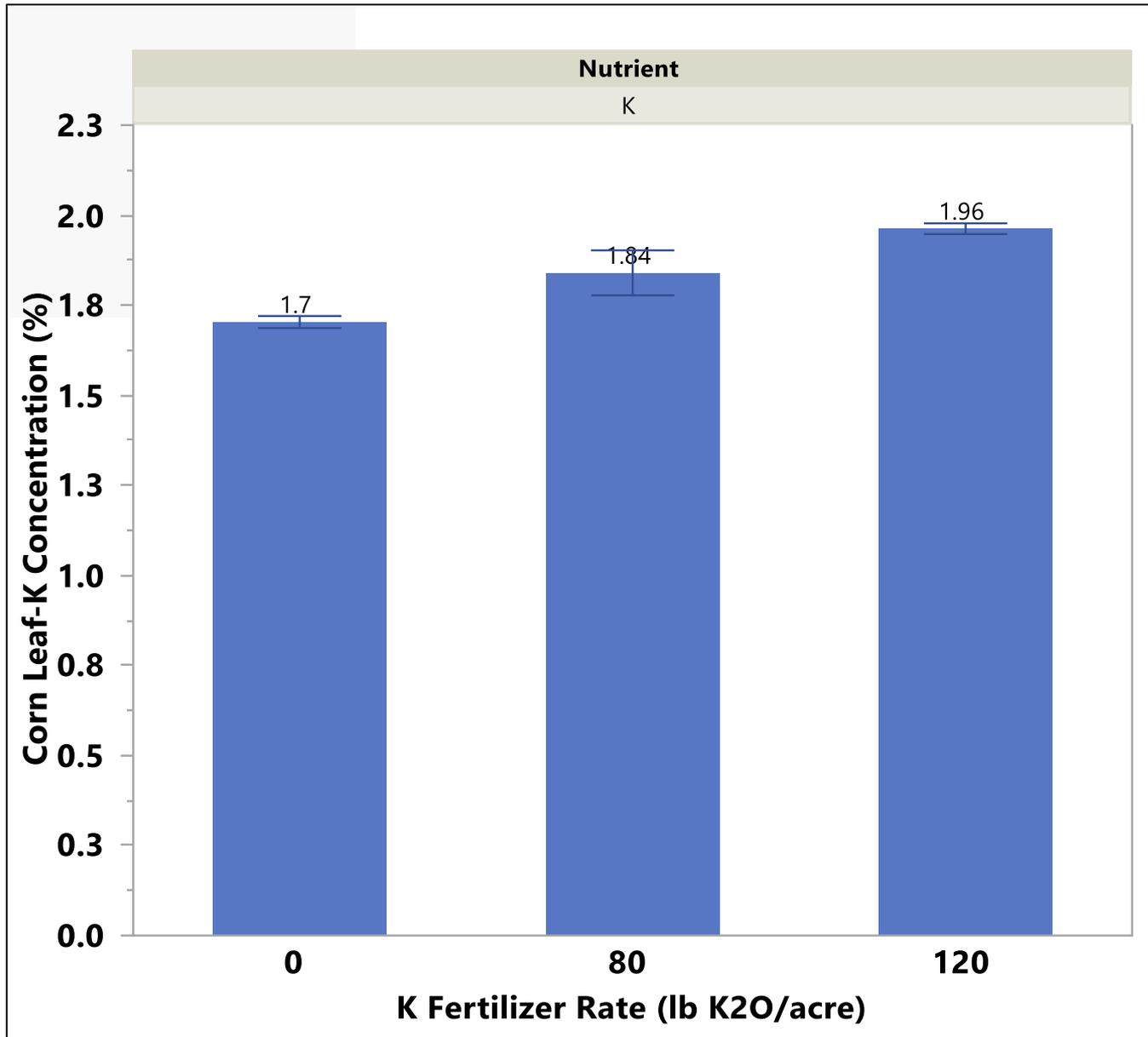
Tensas Yield Results



West Carroll Yield Results

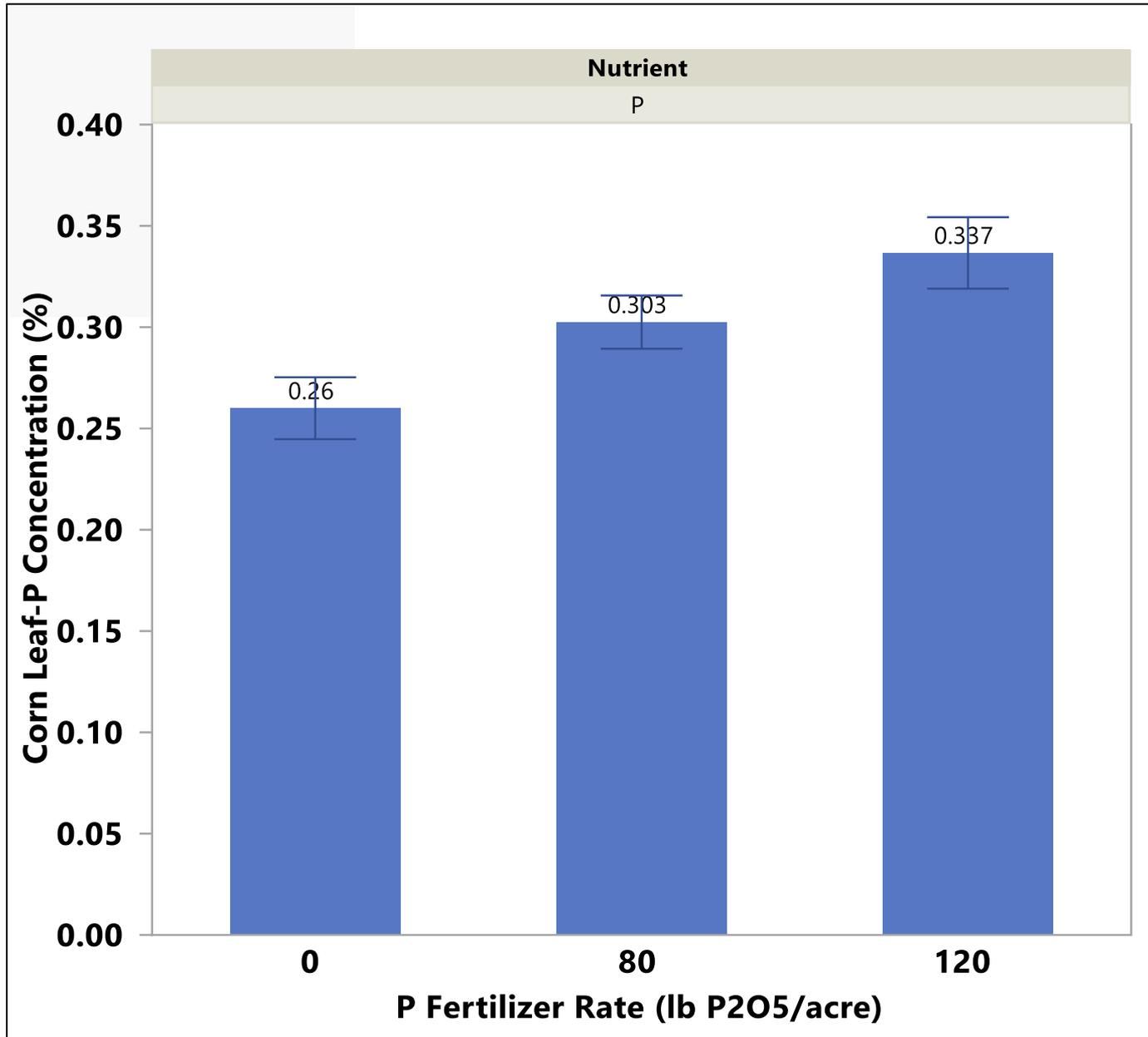


Tensas Tissue Sample Results



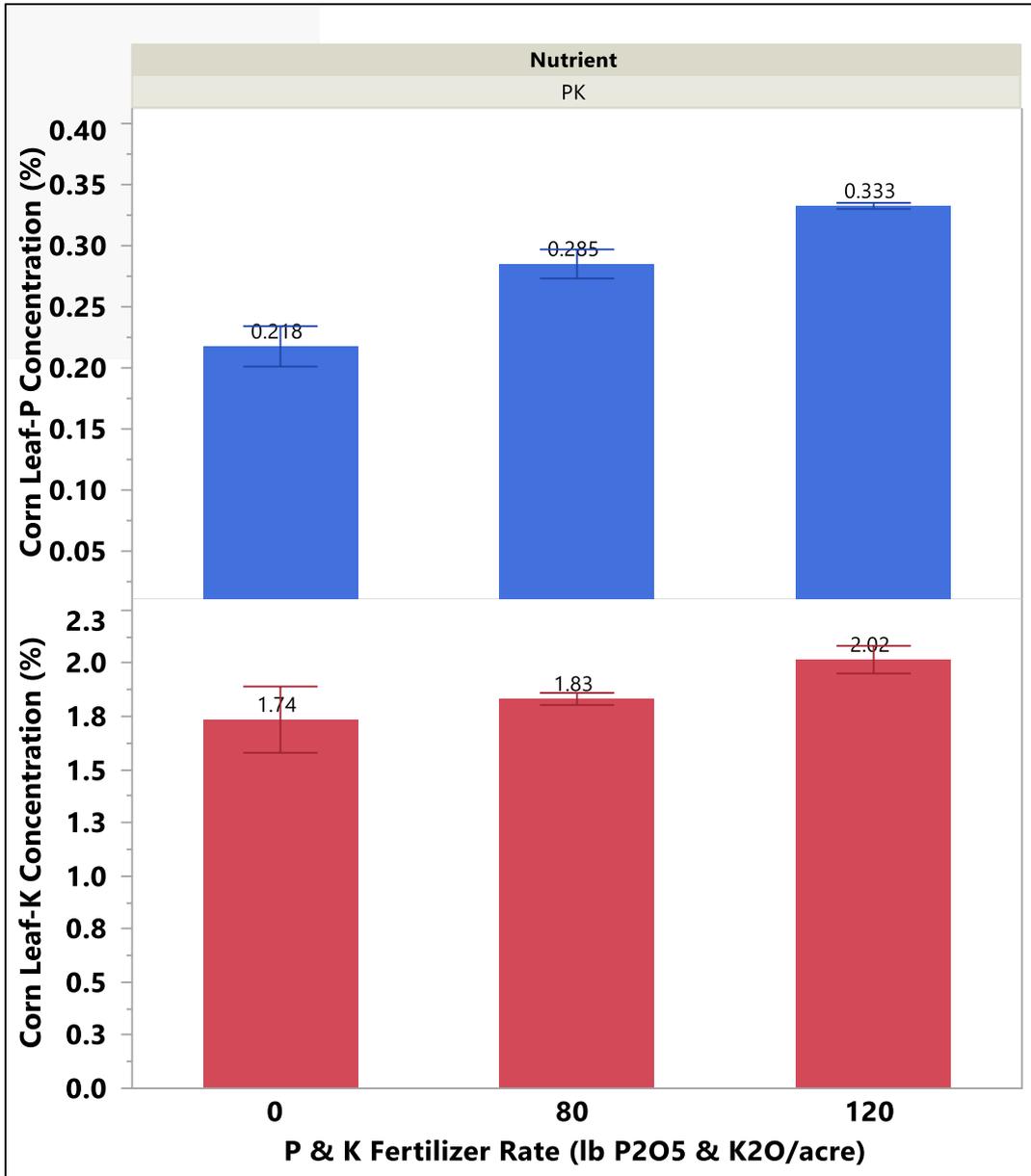
Corn leaf K at R1: 1.4%

Tensas Tissue Sample Results



Corn leaf P at R1: 0.25%

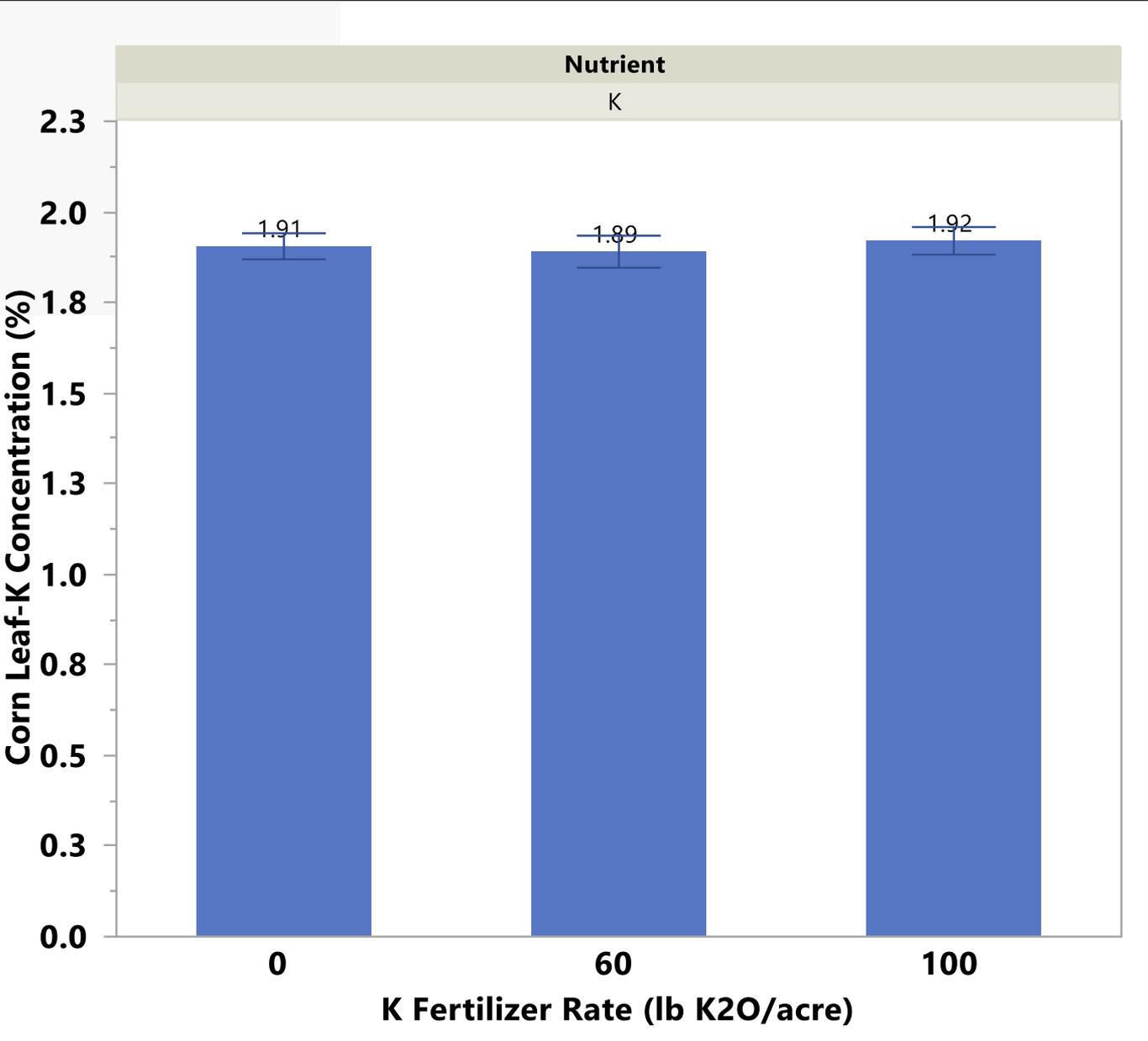
Tensas Tissue Sample Results



Corn leaf P at R1: 0.25%

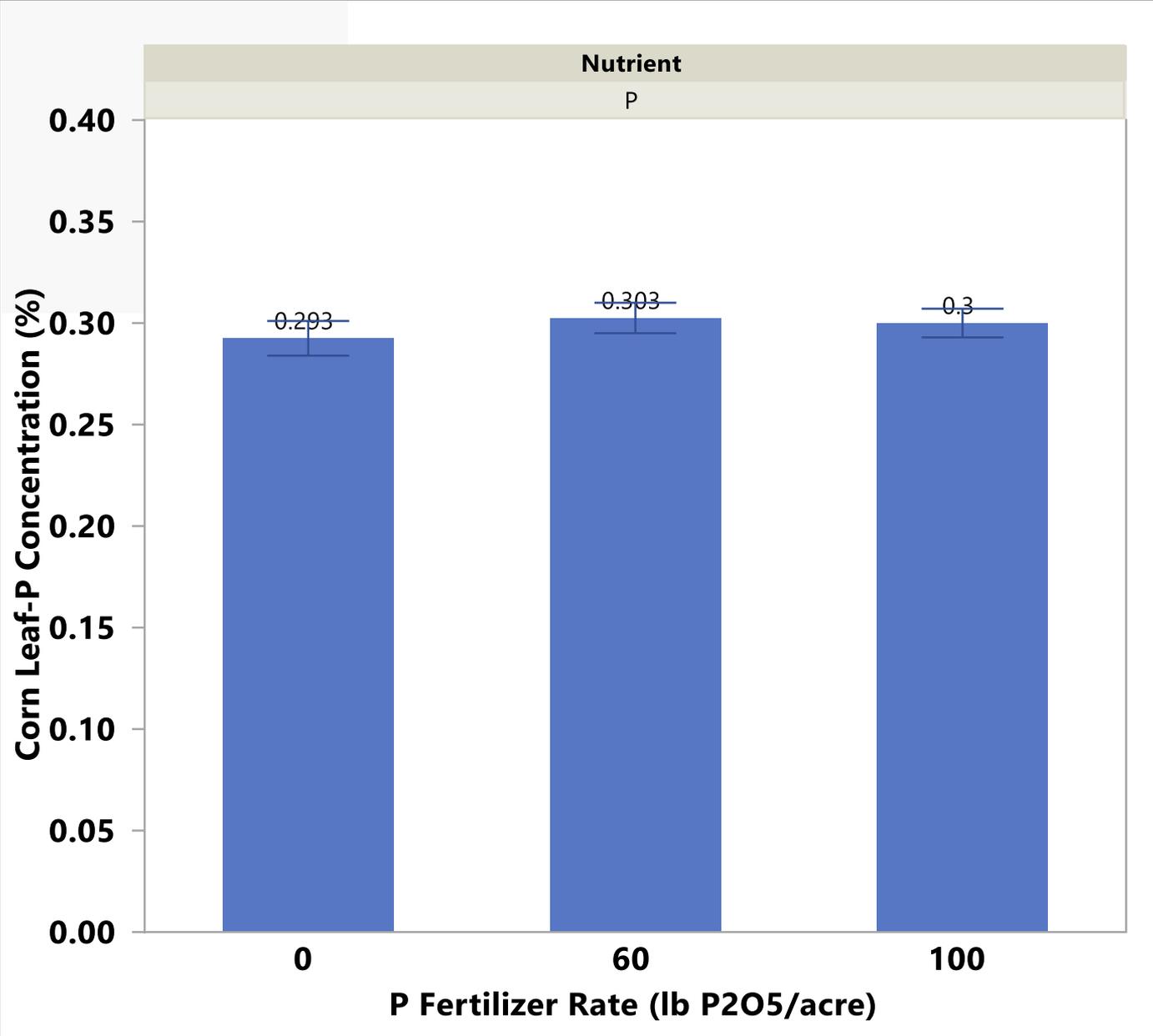
Corn leaf K at R1: 1.4%

West Carroll Tissue Sample Results



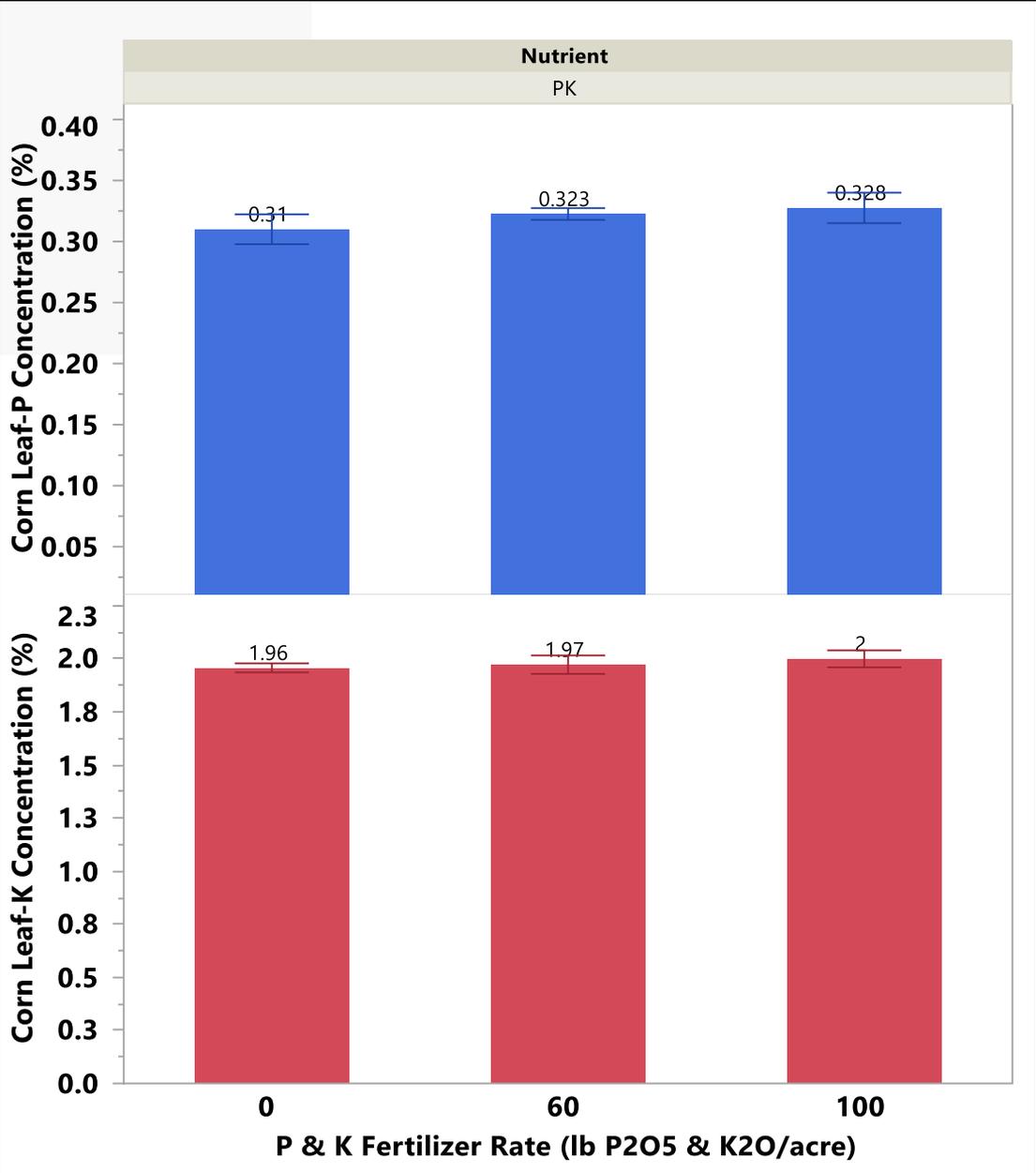
Corn leaf K at R1: 1.4%

West Carroll Tissue Sample Results



Corn leaf P at R1: 0.25%

West Carroll Tissue Sample Results



Corn leaf P at R1: 0.25%
Corn leaf K at R1: 1.4%

Future Plans

- **Continue to conduct trials in northeast Louisiana to evaluate corn response to phosphorus and potassium applications.**
- **Compare results with other soil fertility studies being conducted in Louisiana and use the data to potentially revise P&K fertilizer recommendations for corn.**

Acknowledgements



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Questions

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