

Bulloch County/Cromley Farms Cotton Fertility Trial – 2016

Cooperators: Lee and Charley Cromley

County Agent : Bill Tyson

Objective: Determine if higher rates of nitrogen and potassium plus foliar fertilization can increase cotton yields and return on investment.

Treatments:

- 1) 105 lb. N/a + UGA Rec for K – No Foliar K (LN/KR/NF)
- 2) 140 lb. N/a + 2X UGA Rec for K – No Foliar K (HN/2K/NF)
- 3) 105 lb. N/a + UGA Rec for K + Foliar K (LN/KR/F)
- 4) 140 lb. N/a + UGA 2X Rec for K + Foliar K (HN/2K/F)

Plots size was 24 rows wide x approx. 1800 ft. long

Plots were “grid sampled” and soil applied K by variable rate

Foliar = 2 applications of 7 lb./a of KNO₃ (13.7-0-46)

Cotton variety = DP 1646 B2XF

Center 12 rows of plot harvested with 6-row picker and individually weighed and ginned.

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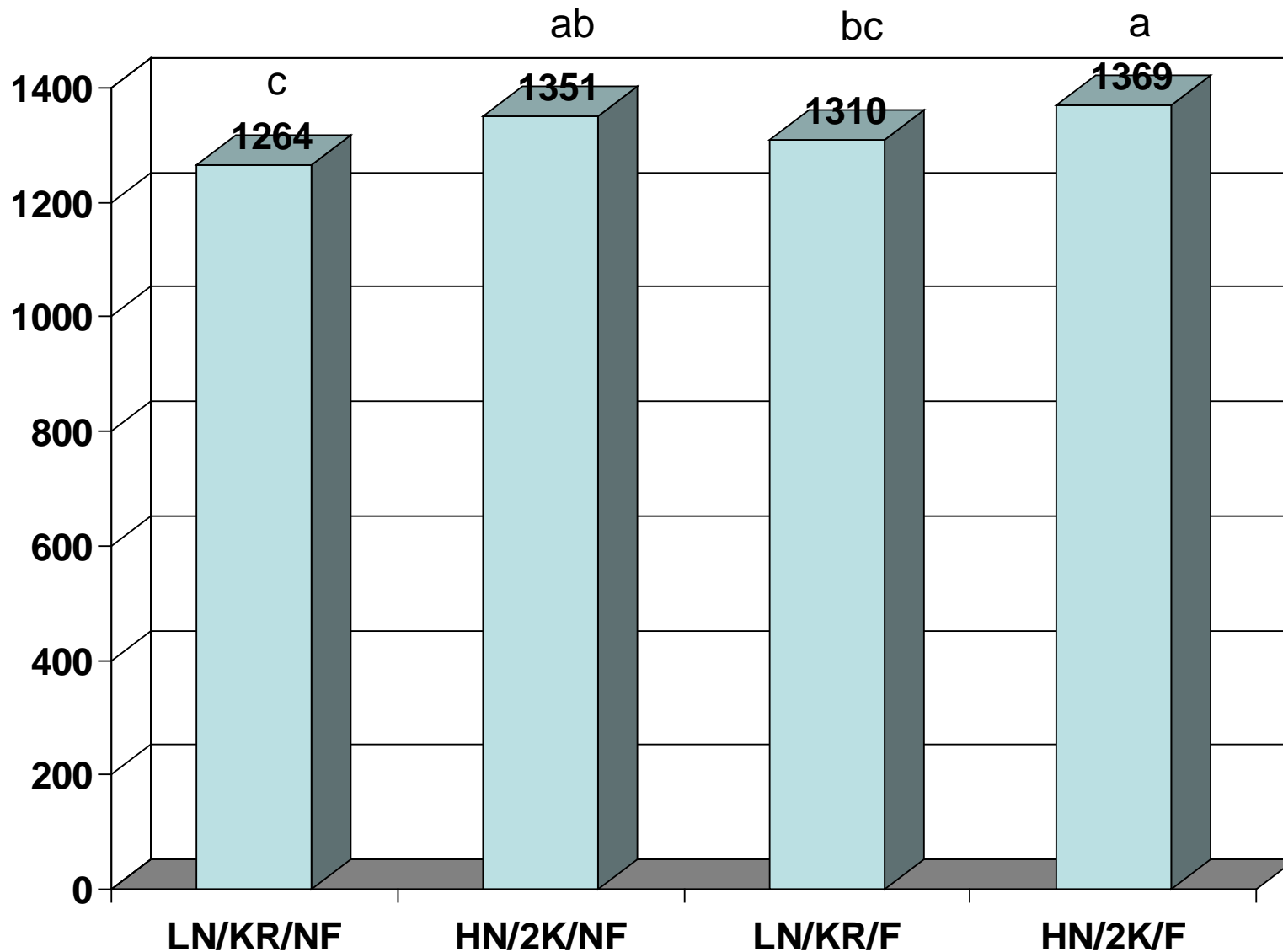
26 October 2016



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Cotton Yield (lb/a)

Cooperators: Lee & Charley Cromley



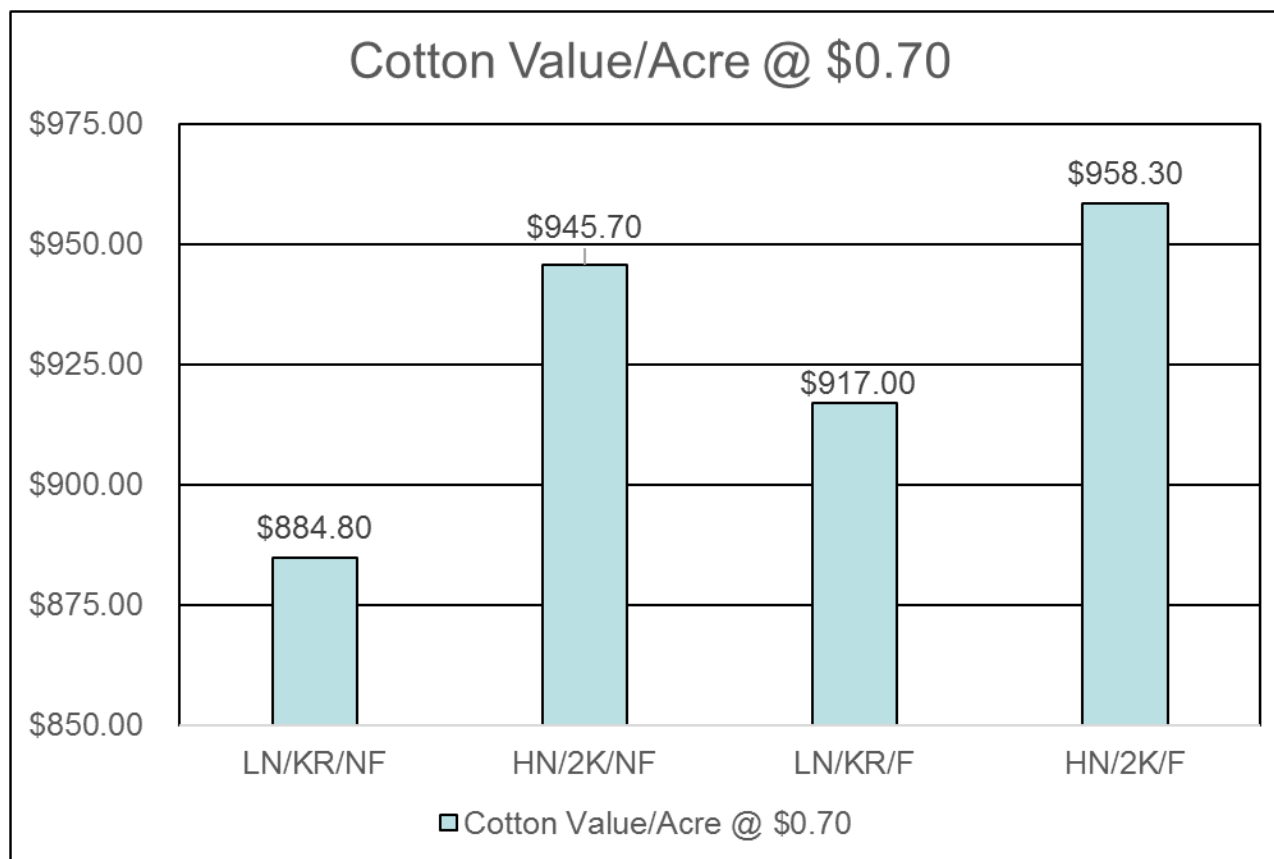
* LN = 105 and HN = 140 lb N/a KR = UGA/3 Bale

F= Foliar/NF=No Foliar

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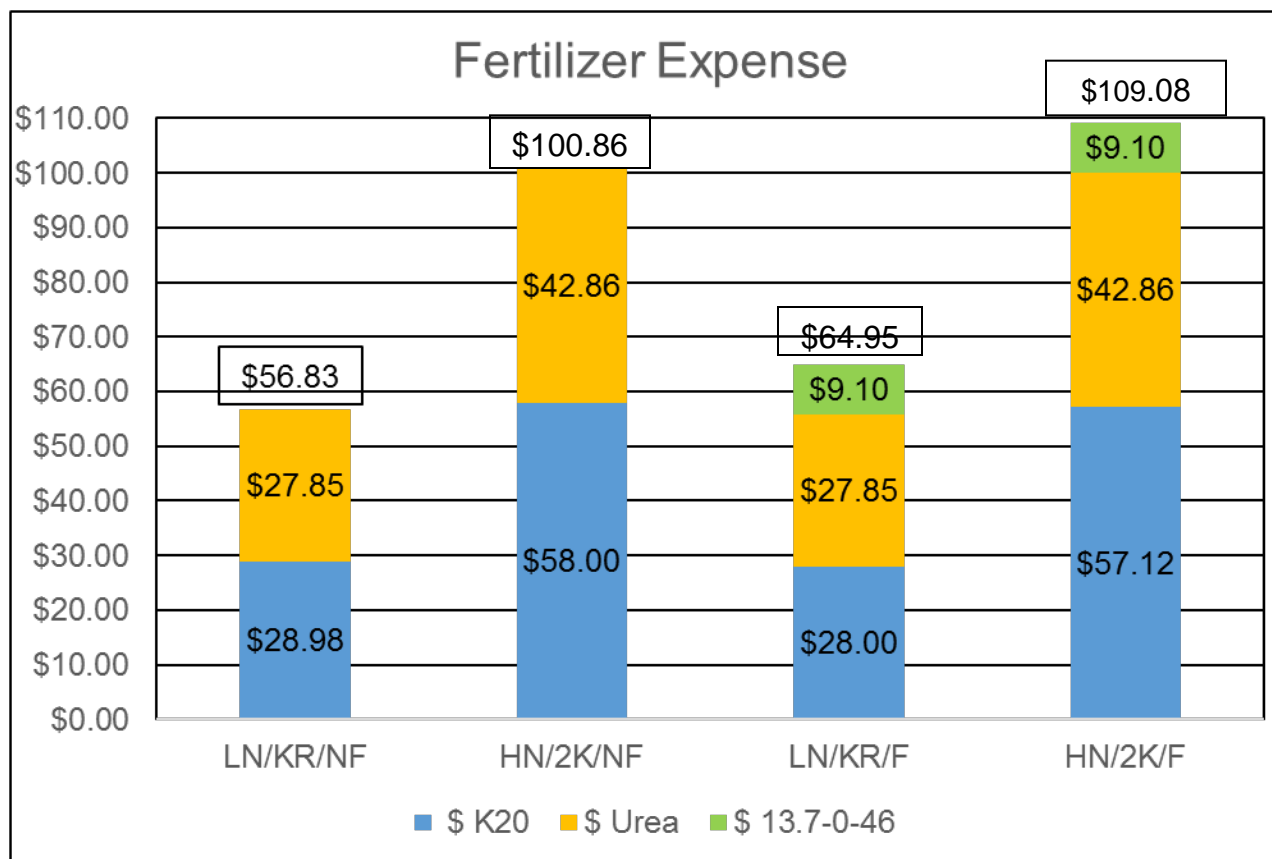
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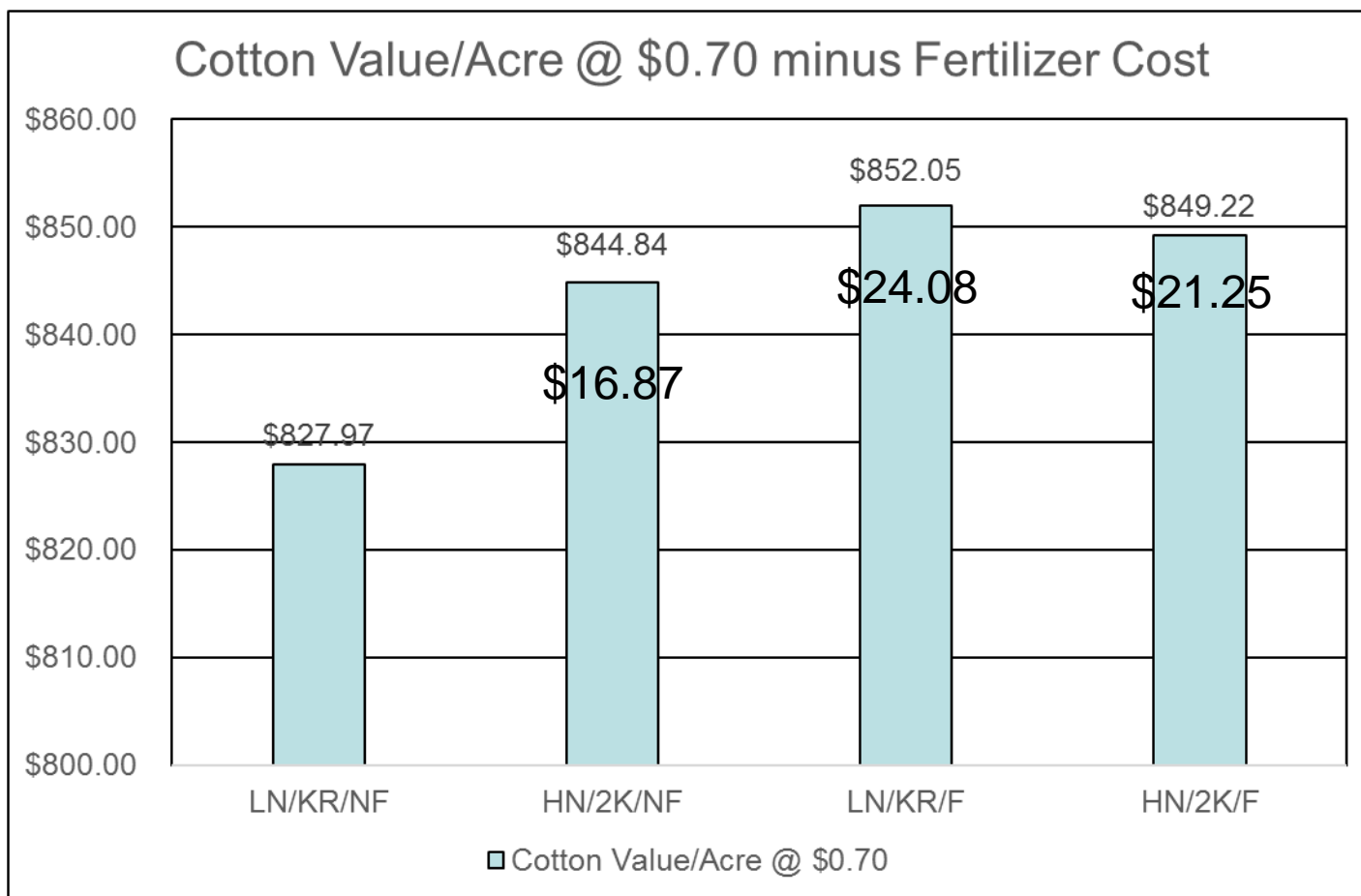
* Gross value (Yield x \$0.70)

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- Does not include blanket 100 lb/a DAP or starter fertilizer applied to all treatments.

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* Net Value (Yield x \$0.70 – Fertilizer Cost)

Conclusions

- Higher Yield (by 87 lbs. lint/a) with higher N and double the UGA K recommendation with an ROI of \$16.87 (T1 vs T2).
- Due to the treatment structure of the study, it cannot be determined if the yield increase was due more to N or K or a combination of both.
- However, the site was responsive to foliar K - 46 lbs lint/a and ROI of \$24.08 when foliar K was applied in addition to the UGA recommended K (T3 vs T1).
- Cotton yield and ROI were only slightly increased with foliar K when 2X UGA recommended K rate soil applied (T4 vs T2 - yield by 18 lb lint/a and ROI by \$4.38 – and not statistically significant).
- The most economical treatment (highest ROI of \$24.08) was the UGA recommendation of N for 3 bale, UGA recommended soil applied K plus foliar K (which is the UGA recommendation for high yield goals).
- This study needs to be repeated and/or redesigned to separate the affect of higher rates of soil applied N and K.