

On-farm Evaluation of Cotton Potassium Recommendations in South Carolina

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COOPERATIVE EXTENSION
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Why Potassium is Important

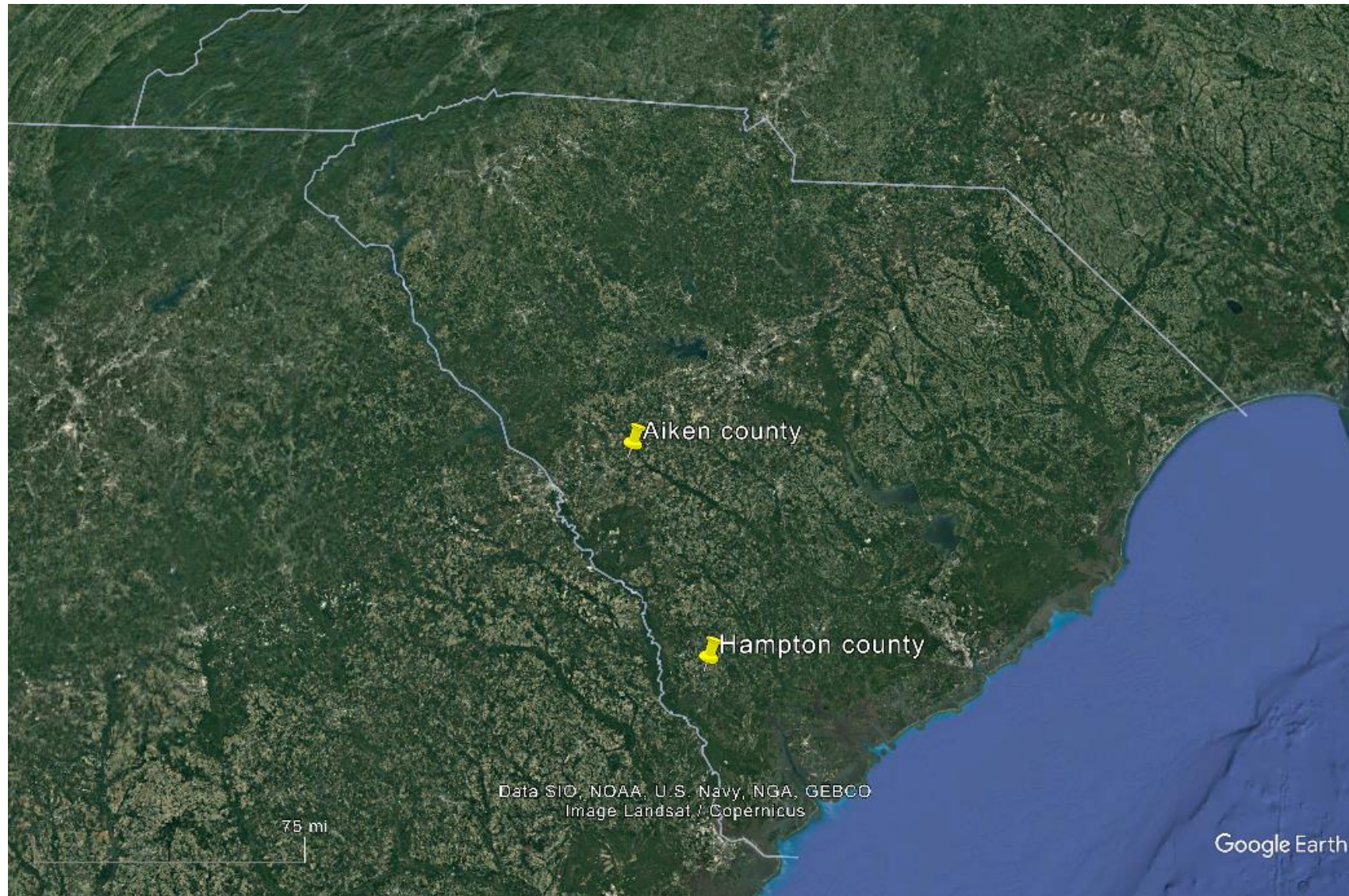
Potassium leaching can be considerable under:

- Low organic matter soils,
- Sandy soils,
- High soil water content,
- High potassium application rates.

Accumulation of potassium in clay subsoil horizons.

These factors together make potassium of greater concern for South Carolina producers.

Location of Sites



Soil Sampling Strategy



Soil Sampling from
A: 0-4 inches;
B: 4-12 inches, and
C: 12-24 inches

Fertilizer Applications at On-farm Sites

Fertilizer Application by hand-held spreader



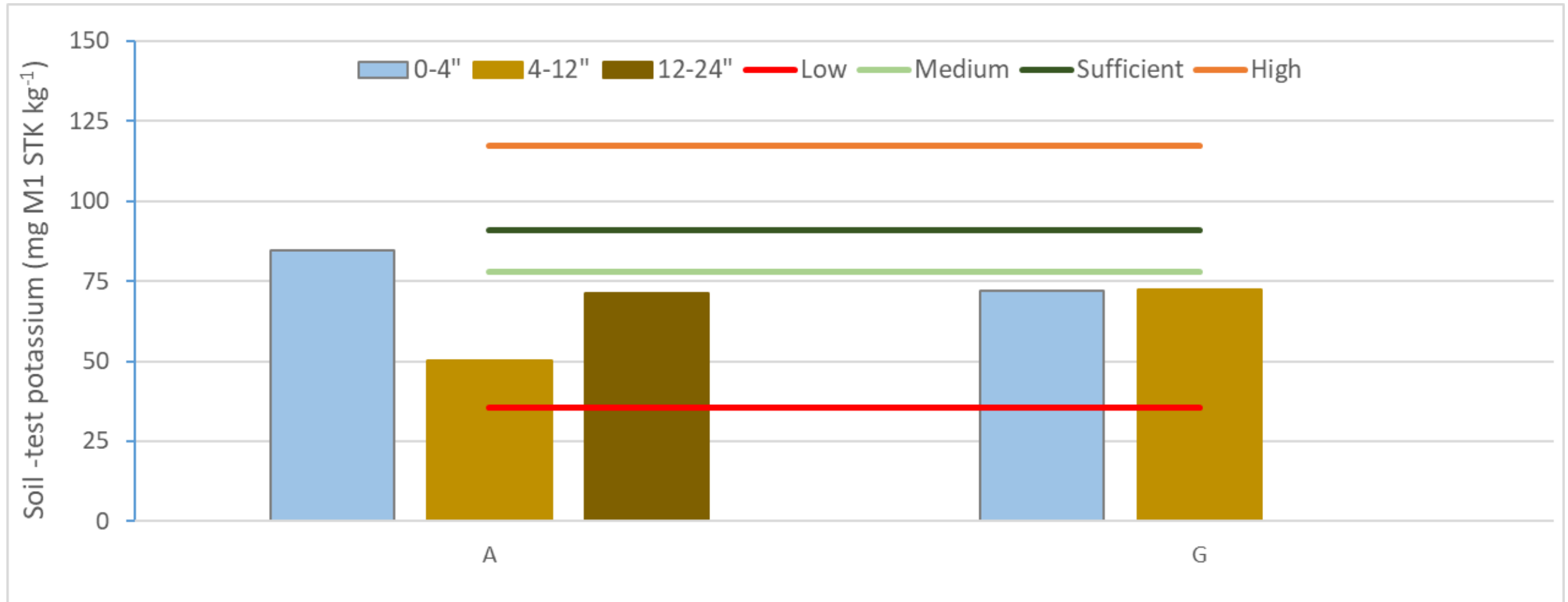
Cotton Harvesting

Cotton harvesting by machine or handpicking



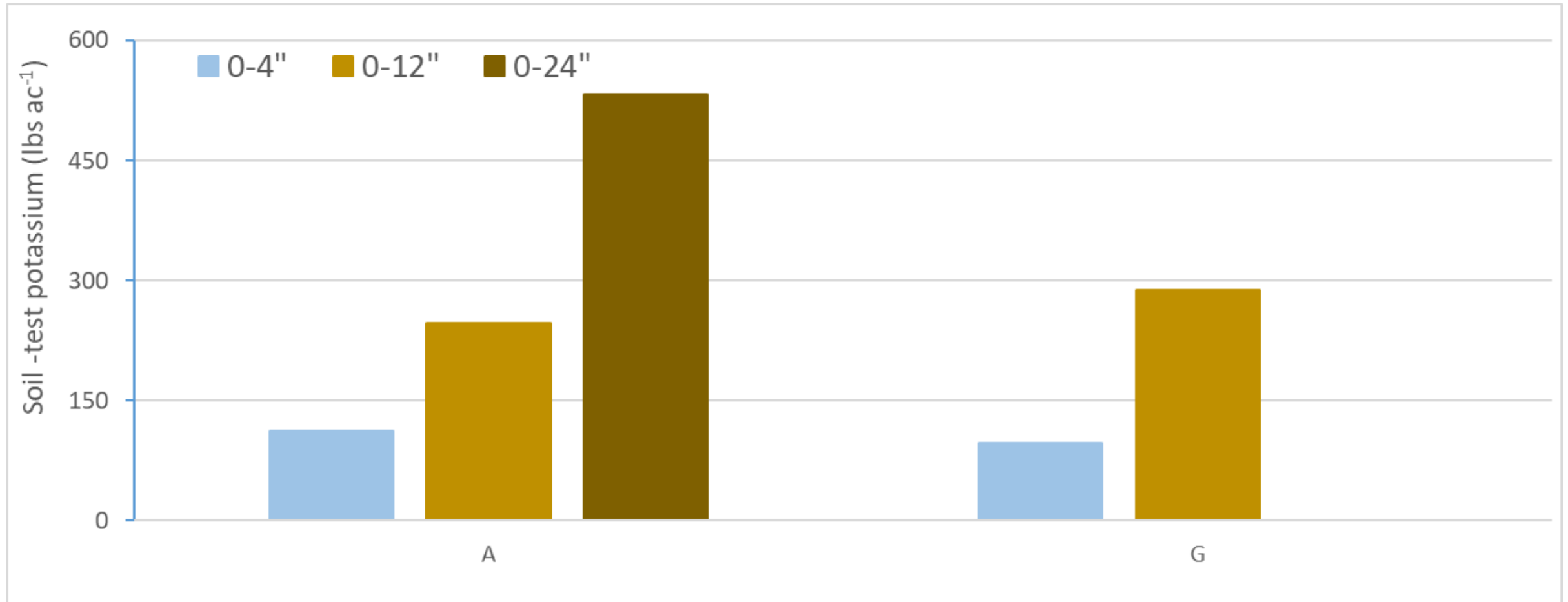
Mehlich-1-extractable K (soil-test K, STK) from baseline soil samples collected at 0-4, 4-12, and 12-24 inches depth at trial sites A and G

At 0-4 inches, site A had STK in the sufficient and site G in the medium category.



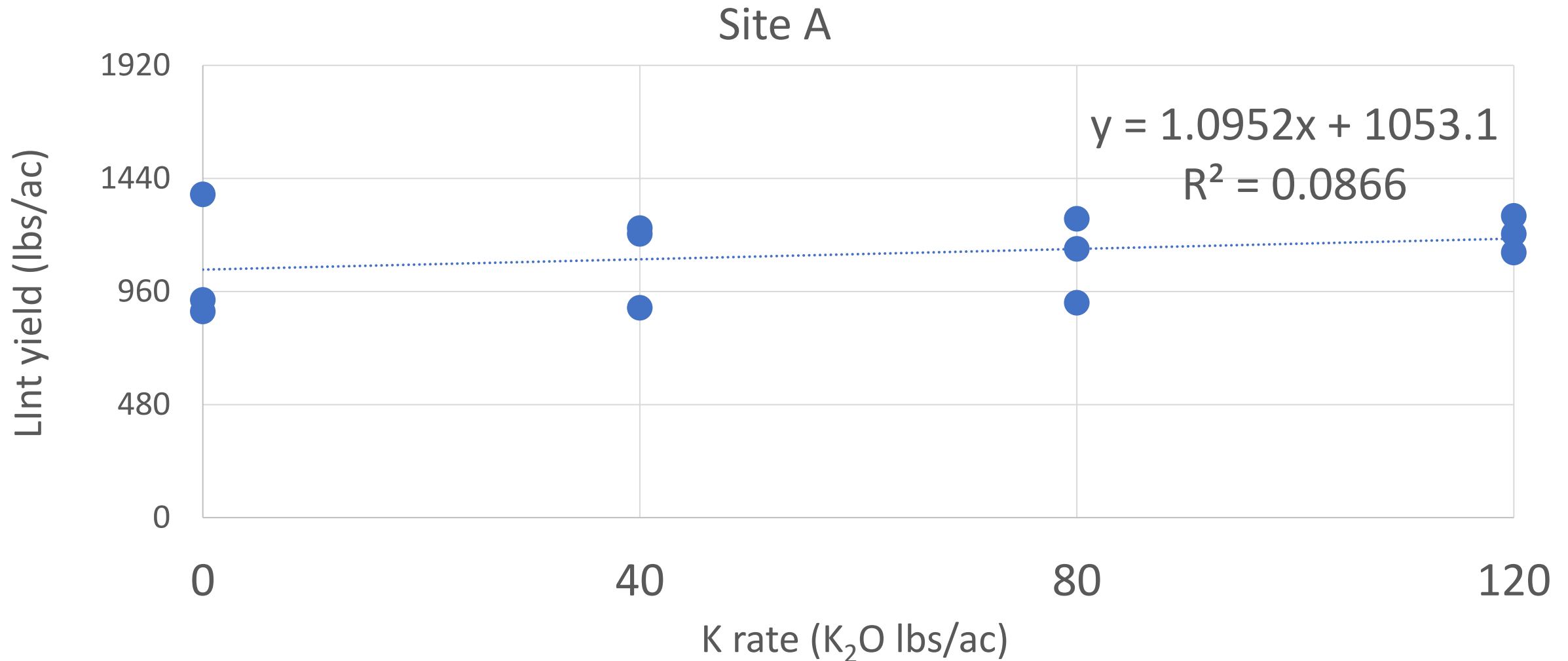
Mehlich-1-extractable K (soil-test K, lbs/ac) in top 4, 12, and 24 inches depth at trial sites A and G

About 250 lbs/ac and 500 lbs Mehlich-1 extract-K were in the top 12 and 24 inches across sites, respectively.



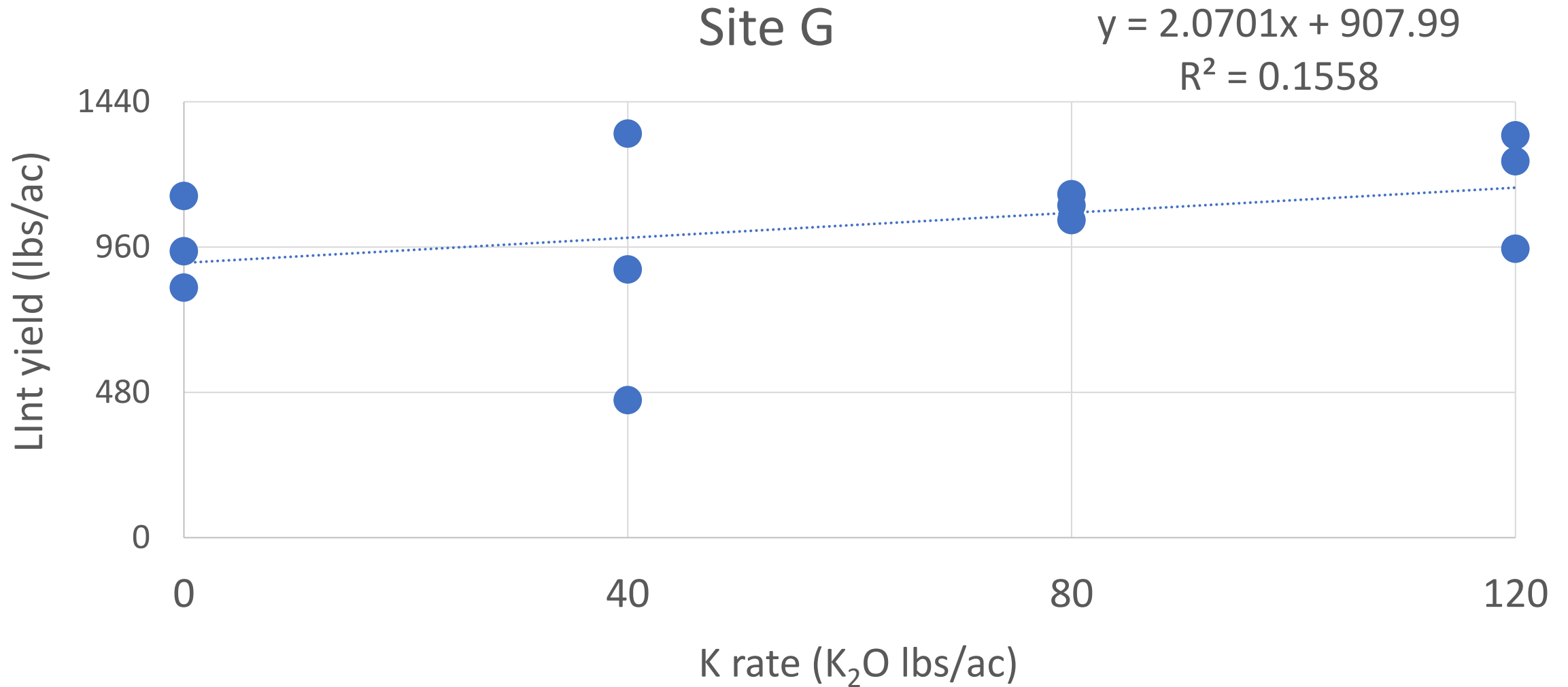
Yield Response to K fertilization at Site A

Site A was non-responsive to K fertilization



Yield Response to K fertilization at Site G

Site G was non-responsive to K fertilization



Summary

- **Site A had STK in the sufficient, and site G had STK in the medium category.**
- **There was about 250 lbs/ac Mehlich-1 extract-K in the top 12 inches and 500 lbs/ac in the top 24 inches across sites.**
- **Both the sites were non-responsive to K fertilization.**
- **Average lint yield at both sites was close to 2 bales of cotton (960 lbs/ac).**
- **Non-responsiveness of both sites could relate to the accumulation of K in the sub-soil profile.**
- **These findings suggest appropriately credit fertilizer recommendations based on sub-soil K reserves.**



Thank You for Attending the Presentation!

Questions?