

Testing the Efficacy of Super Lime Plus in Randolph County

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Introduction

Local producers are being marketed a handful of liquid lime products as a 'quick fix' for soil pH. The claims of these products insinuate that it is a replacement for granular ag lime. We will not be testing the other claims these products have. Some producers are opting to use them in fields that are hard to access with lime spreaders and tons of granular lime, while others are using it to replace granular lime altogether. We will be testing a Liquid Lime product called Super Lime Plus.

Research Hypothesis

If granular agricultural lime is recommended in "tons per acre" to raise soil pH, then the recommended 2 gallons per acre of Super Lime Plus will not be able to neutralize the acidity in the soil enough to raise the pH.



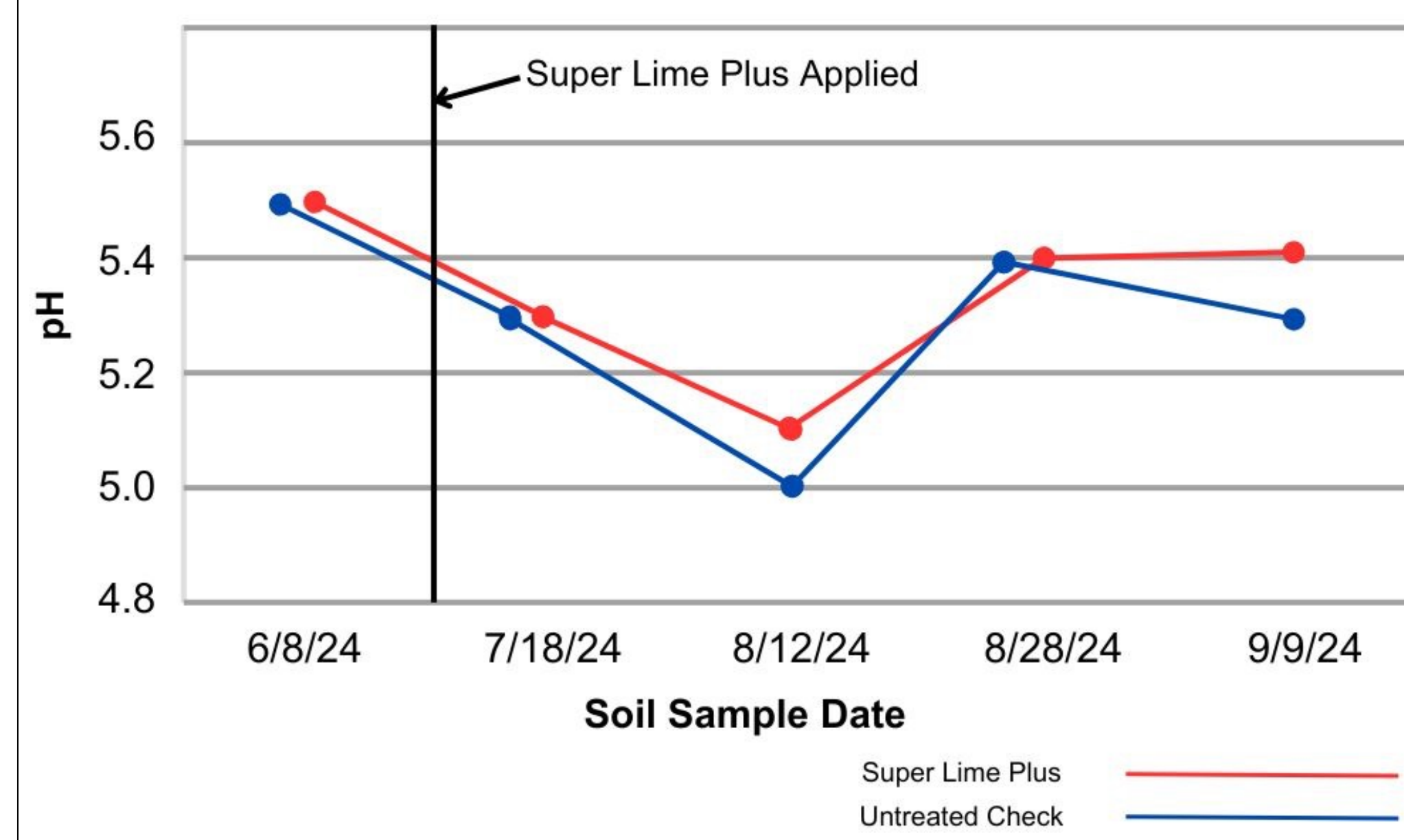
Research Objectives

Determine if Super Lime Plus has any statistically significant influence on pH and yield. We will also determine if the product is economically feasible to use.

Materials and Methods

A randomized, replicated on-farm trial testing Super Lime Plus vs. an Untreated Check. The entire plot will be soil sampled before the product has been applied and monthly in the individual treatments throughout the season to track the potential change in pH. Individual treatments will have tissue samples taken monthly as well. Yield will be collected and the data will be analyzed.

Table 1. Super Lime Plus v. Untreated Check pH Effect



Production information

Non-irrigated

100,000 plants per acre

14 inch rows

Planting date: 5/25/24

Super Lime Plus application date: 7/1/24

Super Lime Plus rate: 2 gallons per acre

Super Lime Plus cost: \$50 per acre

Harvest date: 10/16/24

Soil type: BaC—Badin-Tarrus complex

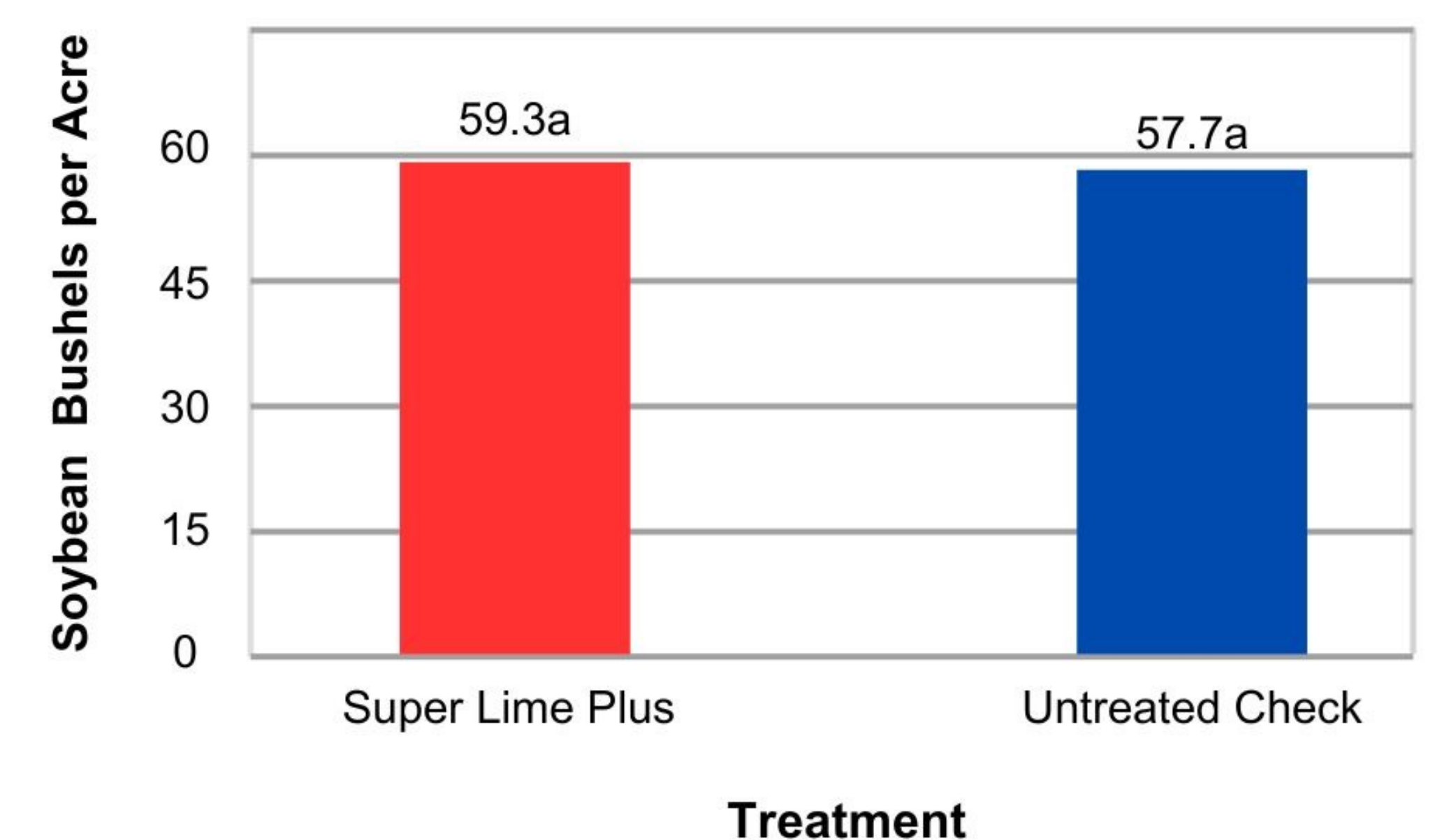
Ap - 0 to 8 inches: silt loam

Bt - 8 to 27 inches: clay

Results

The change in soil pH between the two treatments were minimal and did not increase from the initial soil sample (Table 1). No statistically significant yield benefits were observed from the Super Lime Plus as compared to the Untreated Check (Table 2).

Table 2. Super Lime Plus v. Untreated Check Yield Impact



Conclusions

Liming effects on pH have been well documented in past decades, and several common liming materials have been proven to work predictably when applied (Li et al., 2019). Very little published work has been done on liquid liming materials. This study shows that both pH and yield is not significantly impacted by Super Lime Plus. Applying this product resulted in a monetary loss as compared to the untreated check in this trial.

References

1. Y. Li, S. Cui, S.X. Chang, Q. Zhang; Liming effects on soil pH and crop yield depend on lime material type, application method and rate, and crop species: a global meta-analysis; JSS, 19 (2019), pp. 1393-1406