Soybean Yield Under S Fertilization

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Objective

Determine the effects of nitrogen and sulfur fertilization on soybean yield to define best management practices.

Materials and Methods

Crop Year–2021	
Soil Type	Marshall, Exira
Previous Crop	Corn
Cultivar	P35T15E
Planting Date	April 26
Row Spacing	30-in.
Seeding Rate	140,000 seeds per acre
Tillage	No-tillage
Fertilizer	Optimum to high soil test
Nitrogen	Per treatment scheme
Harvest Date	October 10
Experimental Design	Randomized pairwise comparison
Replications	Eight
Treatments	Untreated (0 lb. N and S/acre) S @ PI: (26.3 lbs. N and 0 lb. S/acre as urea at planting) 10S @ PI: (26.3 lbs. N and 10 lbs. S/acre as urea and AMS at planting) 20S @ PI: (26.3 lbs. N and 20 lbs. S/acre as urea and AMS at planting) 30S @ PI: (26.3 lbs. N and 30 lbs. S/acre as urea and AMS at planting) 0S @ PI and R3: (26.3 lbs. N and 0 lb. S/acre as urea at both planting and R3 stage) 10S @ PI and R3: (26.3 lbs. N and 10 lbs. S/acre as urea and AMS at both planting and R3 stage) 20S @ PI and R3: (26.3 lbs. N and 20 lbs. S/acre as urea and AMS at both planting and R3 stage) 30S @ PI and R3: (26.3 lbs. N and 30 lbs. S/acre as urea and AMS at both planting and R3 stage)

Results

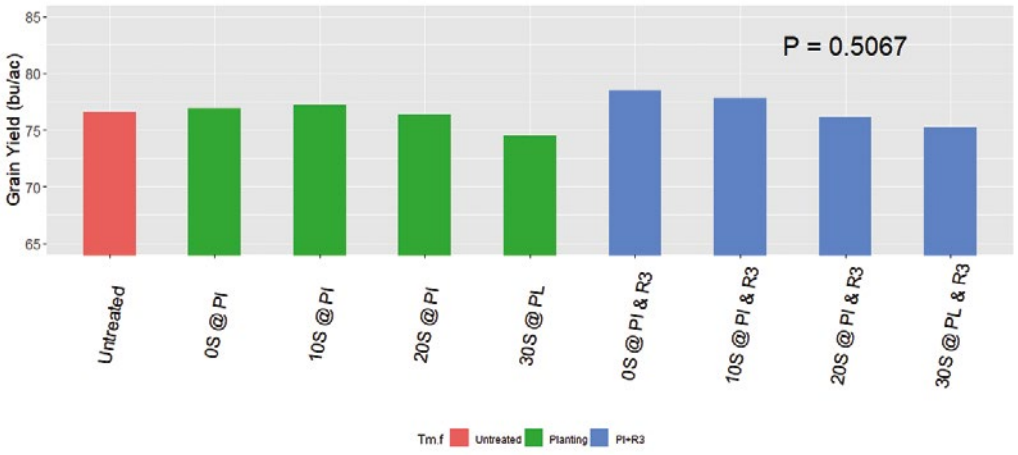

Figure 1. Soybean grain yield at 13% moisture; no statistical difference among treatments.

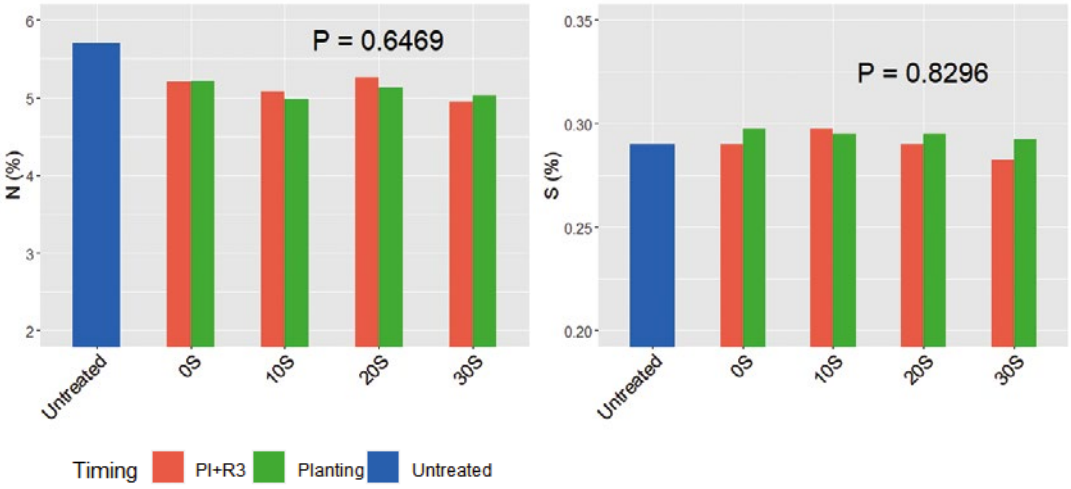

Figure 2. Grain nutrient concentration; no statistical difference among treatments or timings.

Key Takeaways

- Neither a single or split application of AMS improved soybean yields (no main or interaction effects) at any rate compared with the Untreated check (0 lb. N and S/per acre) or the 0S checks (0S @ PI or 0S @ PI and R3).
- There is a trend of improved yields with less AMS and more urea (lower S treatments had less AMS and more urea to keep the N rate the same across treatments).