

# SOYBEAN RESPONSE FROM SULFUR FERTILIZATION

**PURPOSE:** Identify any soil types or conditions that influence soybean response to sulfur fertilizer.

Location	Planting Dates	Stewart Seeds™ Products	Tillage	Previous Crop
6 Locations	Various	Multiple	Various	Various

## METHODS:

- A mixture of small plot replicated and field scale replicated designs.
- Sulfur was applied pre-plant in the form of ammonium sulfate or potassium sulfate at a rate of 20 lbs of sulfur fertilizer per acre. .
- Sulfur was applied either dry in a spreader or through a wet boom.
- Yields obtained with either a calibrated weigh wagon or through Climate FieldView™ and calibrated yield monitor.

## RESULTS AND DISCUSSION:

- Overall there was a 3.1 bu/a advantage with the application of 20 lbs of sulfur, this was statistically significant at a 0.05 p-value.
- With a \$7.00 application fee and \$272 per ton cost of ammonium sulfate (AMS) the net revenue from sulfur application would be \$10.48. If the AMS was applied with the planter the net revenue would be \$17.47.
- The largest yield advantage was obtained at the Perrysburg location in 2020. This site has not shown a response to sulfur in the past. Organic matter at the site is 4.4% and the Cation Exchange Capacity (CEC) is 16. These are above the critical thresholds of <2.0 % Organic matter and <10 CEC that tend to require an application of sulfur fertilizer for soybeans.

Treatment	Yield (Bu/A)
Control	61.7
Sulfur	64.8
<b>Yield Adv.</b>	<b>3.1</b>
LSD	2.2



## RECOMMENDATIONS:

- Sulfur fertilization should be applied if soil organic matter is less than 2.0 % and/or CEC is below 10.
- In some instances, there appears to be an environmental effect outside of established soil criteria.
- Outside of standard recommendations sulfur should be trialed on farm to see if there is a consistent, positive response.
- Be sure to include multiple checks in each field to determine if there is a positive response.

**Performance may vary**, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

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