

Impact of Fertigation on Soybean Product Yield

Trial Objective

- Spoon feeding nutrients to soybean with high yield potential is growing in popularity as producers look to maximize production.
- Sub-surface drip irrigation (SDI) and sprinkler irrigation systems provide the ability for producers to apply nutrients to crops over the growing season.
- This study was conducted to evaluate if soybean products respond differently to spoon feeding nutrients over the growing season.

Research Site Details

Location	Soil Type	Previous Crop	Tillage Type	Planting Date	Harvest Date	Potential Yield (bu/acre)	Seeding Rate (seeds/acre)
Gothenburg, NE	Hord silt loam	Corn	Strip-till	05/31/18	10/03/18	75	160K

- The study was set up with nutrient treatment as the whole plot and soybean product as the subplot with four replications.
- Nutrient treatments consisted of the following:
 - Base Management (BM) = 40 lb/acre P₂O₅ + 25 lb/acre sulfur + 0.5 lb/acre zinc strip-tilled to a depth of seven inches before planting
 - +Boron = BM + 0.5 lb/acre of boron as 10% liquid boron applied through the SDI system on 7/19/2018 at the R1 growth stage
 - +Phosphorus = BM + two applications of 6.0 lb/acre of phosphorus as super phosphoric acid applied through the SDI system on 7/28/2018 at the R2 growth stage and 8/7/2018 at the R3 growth stage
 - +Micronutrients = BM + one application of 1 qt/acre Kugler Micromax on 7/20/2018 at the R1 growth stage providing 0.013 lb/acre copper, 0.026 lb/acre iron, 0.052 lb/acre manganese, 0.052 lb/acre zinc, and 0.00065 lb/acre boron
- Three soybean products were used: 2.9MG-A, 2.9MG-B, and a 2.0MG
- 3.3 inches of irrigation water was applied through the SDI system to meet the needs of the soybean crop.
- Weeds were controlled as needed and no fungicide or insecticide were used in the plots.

Understanding the Results

- There was a significant interaction between nutrient treatments and soybean product (Figure 1).
- Two products responded to fertigation: the 2.9MG-A product had the highest yield with the +Micronutrients treatment and the 2.0MG product had the highest yield with the +Boron treatment. Surprisingly, no positive yield response from fertigation was observed for the 2.9MG-B product.

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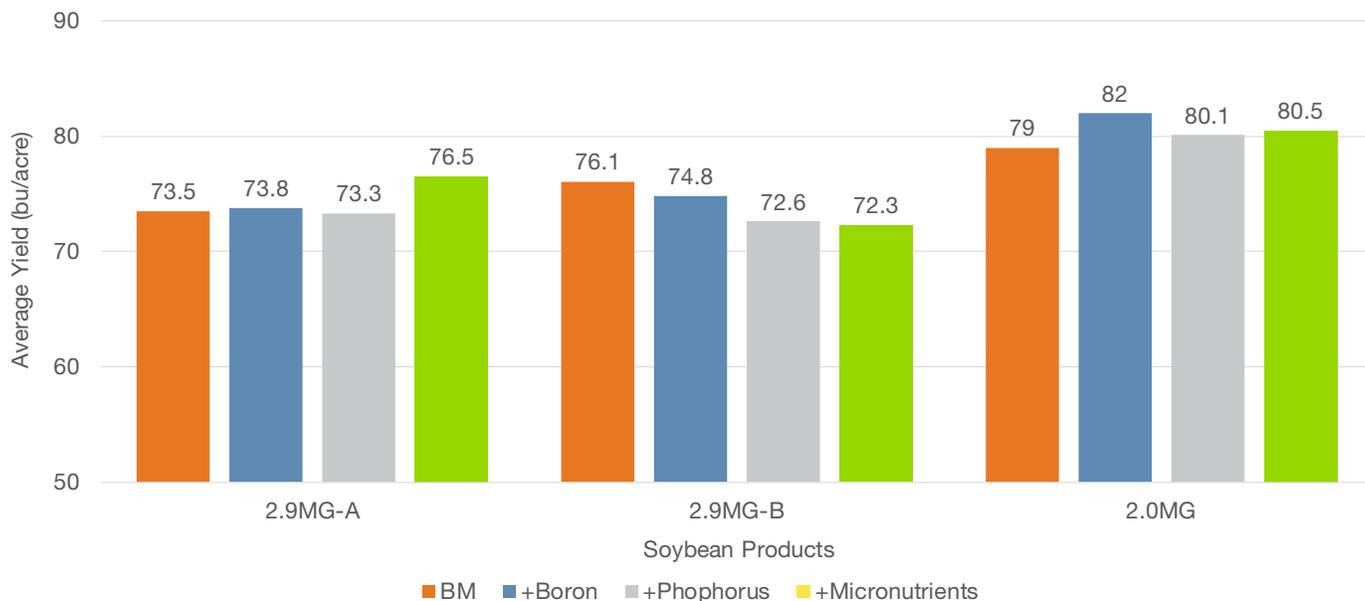


Figure 1. Average yield as influenced by the fertigation treatment.



Figure 2. Image of the 2.0MG product in the +Boron fertigation treatment.

What Does This Mean for Your Farm?

- Soybean products may respond differently to fertigation treatments. This was the first year of this study, and we will continue to evaluate this in future research.

Legal Statements

The information discussed in this report is from a single site, replicated demonstration. This information piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

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