



# 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 P<sub>2</sub>O<sub>5</sub> + 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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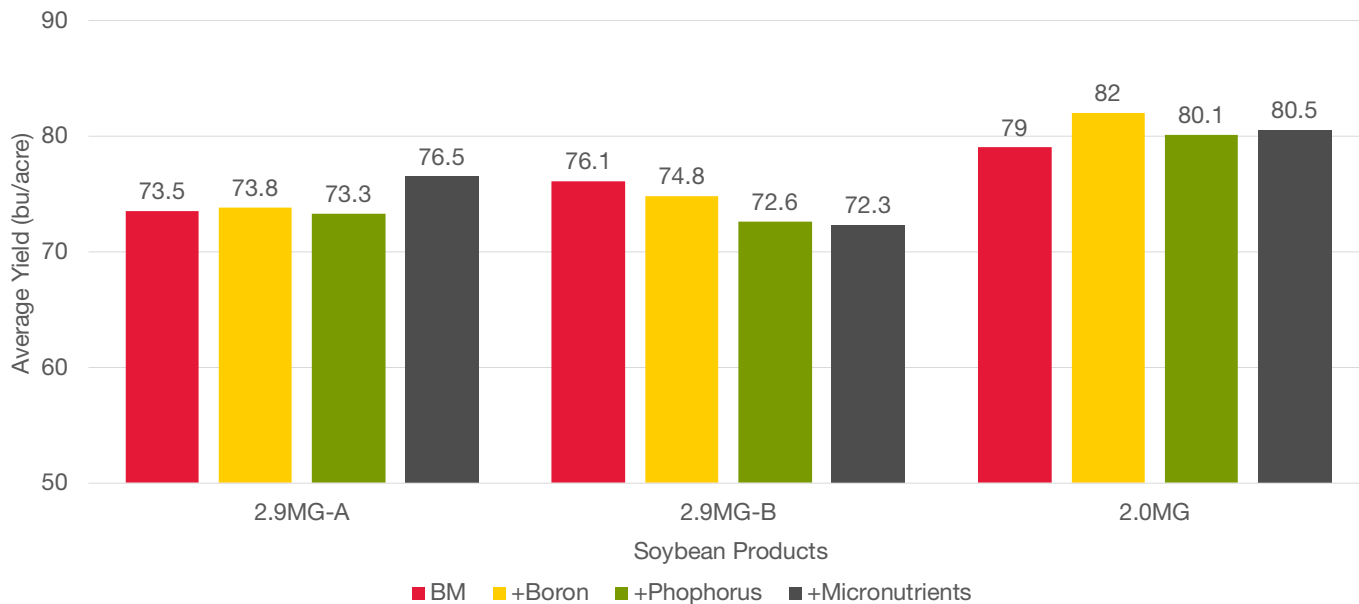


Figure 1. Average yield as influenced by the fertigation treatment.



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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