



SOYBEAN

# MicroEssentials® SZ™ Soybean Seed Safety

## Objective

- Determine the rate of MicroEssentials® SZ™ (12-40-0-10S-1Zn) that can safely be placed with soybean seed in 7.5" and 30" row spacings.

## Overview

- Soybeans are sensitive to seed-placed fertilizer.
- Seedbed Utilization (SBU) is the amount of the seedbed over which the fertilizer is spread. This is expressed as % SBU (width of spread divided by the row spacing and multiplied by 100). Therefore, at a given application rate, the more narrow the row spacing, the higher SBU and the lower the potential seed damage.

## Trial Details

**CROP:** Soybean (*Glycine max*)

**YEARS:** 2010–2012

**LOCATIONS:** 9 locations  
United States – ND, SD  
Canada – MB

**DATA SOURCE:** Field studies conducted by third-party, independent researchers.

**EXPERIMENTAL DESIGN:** Small-plot RCBD with 4 replications.

### CROPPING CONDITIONS:

- All trials conformed to local cropping practices. Fertilizer was applied with the seed at planting.
- P<sub>2</sub>O<sub>5</sub> fertilizer rates were 16, 24, 32 and 40 lbs/ac. These rates were equivalent to 40, 60, 80 and 100 lbs/ac of SZ, respectively.
- Row spacing: 7.5" and 30".
- Stand counts were taken at 21–30 days after planting.
- Soil texture was loam for most of the locations.

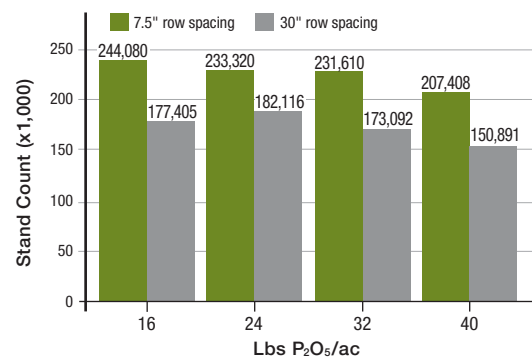
### 80 lbs/ac of fertilizer applied



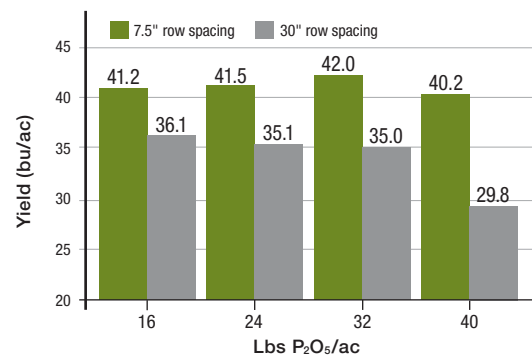
7.5" row spacing

30" row spacing

**Fig. 1: Plant Population by P Rate and Row Spacing**



**Fig. 2: Yield by P Rate and Row Spacing**



## Summary

- MicroEssentials SZ demonstrated less stand reduction and higher yield at 7.5" row spacing than 30" row spacing. See Fig. 1 and Fig. 2.
- Based on yield in Fig. 2, MicroEssentials SZ can be safely applied with soybean seed up to 40 lbs P<sub>2</sub>O<sub>5</sub>/ac (100 lbs MicroEssentials SZ/ac) in 7.5" row spacing.
- Based on yield in Fig. 2, MicroEssentials SZ can be safely applied with soybean seed up to 32 lbs P<sub>2</sub>O<sub>5</sub>/ac (80 lbs MicroEssentials SZ/ac) in 30" row spacing.
- MicroEssentials SZ applied in narrow spacing decreases the number of fertilizer granules next to the soybean seeds (higher percent SBU) and allows higher rates of fertilizer to be safely applied with the seed.



**40 lbs**

P<sub>2</sub>O<sub>5</sub>/ac can be safely applied in 7.5" row spacing

**32 lbs**

P<sub>2</sub>O<sub>5</sub>/ac can be safely applied in 30" row spacing



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Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible.

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