



# LEARNING CENTER 2011

at Monmouth, Illinois

## DEMONSTRATION REPORT

### FOLIAR FEEDING STRATEGIES FOR SOYBEAN PRODUCTION

The benefits of foliar feeding in soybean production are unclear. Theoretically, foliar nutrient application is more effective than soil applications because nutrients can be immediately available to the plant. However, some researchers have suggested that foliar feeding only increases yield potential if an existing nutrient deficiency, such as boron or manganese, is present. Consultants and growers have reported yield increases ranging from 3-9 bu/acre due to foliar nutrient applications<sup>1</sup>.

#### STUDY GUIDELINES

Three demonstration trials were conducted at the Monsanto Learning Center at Monmouth, IL in 2011 to evaluate various foliar feeding strategies on soybean production.

Foliar products differed between experiments and each was summarized separately. Genuity® Roundup Ready 2 Yield® soybeans (relative maturity 3.1) were planted on May 18, 2011 and harvested on October 8, 2011 with two replications for each experiment. All experiments received the same weed control program which consisted of a pre-emergence application of Valor® XLT at a rate of 3 oz/acre and a post-emergence application of Roundup WeatherMAX® herbicide at a rate of 22 oz/acre.

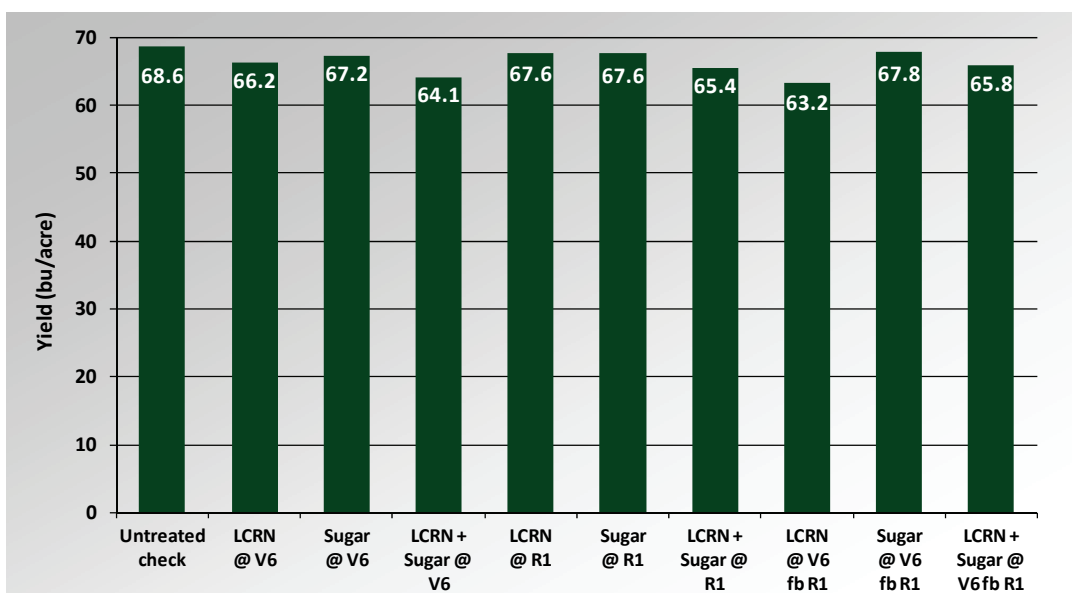
#### DEMONSTRATION TRIAL #1

In Trial # 1 the previous crop was corn. Conventional tillage, consisting of fall chisel plowing and one pass with a soil finisher in the spring, was used on all plots. The inputs included liquid controlled-release nitrogen (LCRN) at 8 qt/acre and granulated sugar at 2 lb/acre. The treatments were based on the two inputs and the plant growth stage at the time of application (Table 1; Figure 1).

Table 1. The ten treatments used in demonstration trial # 1.

Treatment	Input	Growth Stage of Application
1	Untreated Check	-
2	LCRN	V6
3	Sugar	V6
4	LCRN + Sugar	V6
5	LCRN	R1
6	Sugar	R1
7	LCRN + Sugar	R1
8	LCRN	V6 and R1
9	Sugar	V6 and R1
10	LCRN + Sugar	V6 and R1

LCRN = liquid controlled-release nitrogen    Sugar = granulated sugar



← Figure 1. Soybean yield of different foliar treatments in trial # 1.

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### DEMONSTRATION TRIAL #2

In Trial # 2 the previous crop was corn. Conventional tillage, consisting of fall chisel plowing and one pass with a soil finisher in the spring, was used on all plots. Inputs included a strobilurin foliar fungicide at 0.3 qt/acre, stress inhibitor (ethylene) at 0.5 qt/acre, foliar feed 1 at 1.0 qt/acre, and foliar feed 2 at 2.0 qt/acre. Treatments were based on input and plant growth stage at the time of application (Table 2; Figure 2).

### DEMONSTRATION TRIAL #3

Trial # 3 was conducted in a continuous no-tillage regime and data was pooled across all crop rotation systems (corn-soybean and continuous soybean systems). Inputs included a strobilurin foliar fungicide at 0.3 qt/acre, stress inhibitor (ethylene) at 0.5 qt/acre, foliar feed 1 at 1.0 qt/acre, and foliar feed 2 at 2.0 qt/acre. The treatments were based on input and plant growth stage at the time of application (Table 3; Figure 3).

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Table 2. The eight treatments used in demonstration trial # 2.

Treatment	Input	Growth Stage of Application
1	Untreated Check	-
2	Fungicide	R3
3	Stress Inhibitor	V6
4	Stress Inhibitor	R4
5	Fungicide + Stress Inhibitor	R4
6	Foliar Feed 1	V6
7	Foliar Feed 2	V6
8	Foliar Feed 2 + Stress Inhibitor	V6

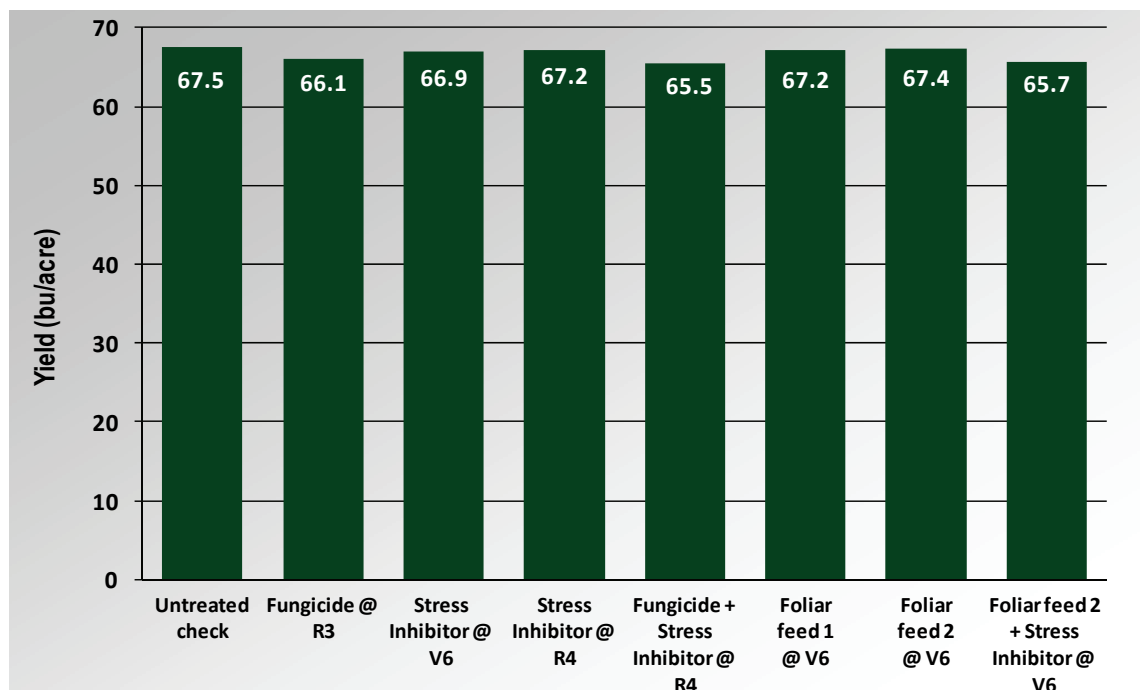


Figure 2. Soybean yield of different foliar treatments in trial # 2.

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#### RESULTS AND CONCLUSIONS

These three trials investigated the effect of different foliar feeding strategies on yield potential in soybean. In these particular studies, none of the investigated foliar feedings had an effect on yield compared to the untreated check. These results are consistent with past data collected at the Monmouth Learning Center. This trend is likely due to the highly fertile and productive soils at this location. These results may not translate to other soils and growing situations. Please check with your local agronomist to find research results applicable to your specific area and soil conditions.

#### SOURCES:

*1D. Eilers. April 1, 2004. Foliar Feeding. Corn and Soybean Digest.*

*Cooperative Extension System. November 3, 2008. Does foliar feeding pay for soybeans? Available on-line: [www.extension.org](http://www.extension.org). Verified: 11/04/11.*

Table 3. The five treatments used in demonstration trial # 3.

Treatment	Input	Growth Stage of Application
1	Untreated Check	-
2	Fungicide	R3
3	Stress Inhibitor	R4
4	Foliar Feed 1	V6
5	Foliar Feed 2	V6

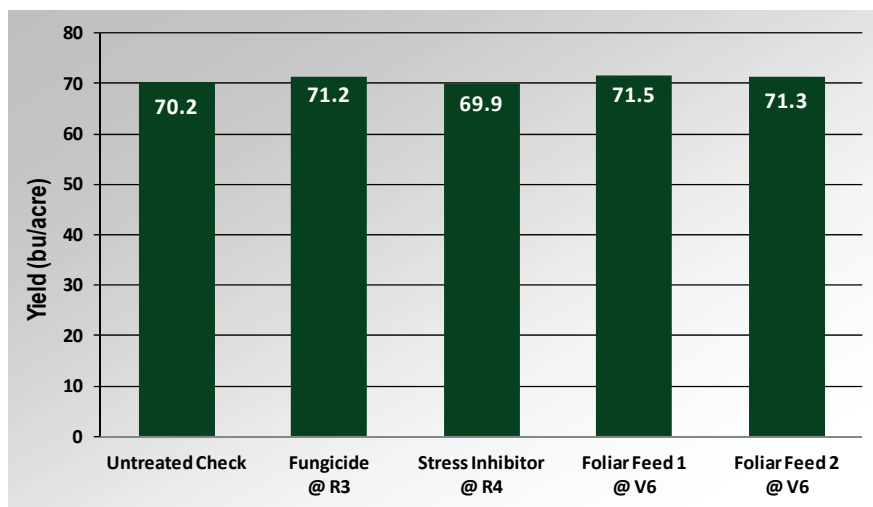


Figure 3. Soybean yield of different foliar treatments in trial # 3.

Roundup Technology® includes Monsanto's glyphosate-based herbicide technologies.

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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