



2014 DEMONSTRATION REPORT

Monsanto Learning Center at Monmouth, IL

High Management Soybean System

While soybean maximum yield potential is genetically determined, actual yield potential depends on environmental conditions and management practices. Growers are considering additional inputs and management practices to more fully exploit the genetic potential of soybean.

Studies have shown that stress mitigation practices such as maximizing nutrient availability and reducing competition from weed, insect, and disease pressure can help increase soybean yield potential.

Seed treatments, rhizobium inoculant, foliar fungicide, foliar insecticide, and foliar-applied nitrogen are several inputs being examined for their effect on soybean yield potential.

Study Guidelines

A soybean demonstration trial was conducted at the Monsanto Learning Center near Monmouth, IL to evaluate the yield response to a stair-step high management approach beginning with untreated seed and adding management practices for each plot to determine which management practice gives the greatest yield response.

The trial was planted with a 3.5 relative maturity (RM) Genuity® Roundup Ready 2 Yield® soybean product. Soybeans were planted in twin rows (Figure 1) and treatments were replicated twice. Plots were planted on May 27, 2014. Soil was previously planted to corn, and received conventional tillage with chisel plow in the fall and soil finisher in the spring. Crop was harvested October 7, 2014.

Treatments included:

- Untreated check
- Seed treated with Acceleron® Fungicide and Insecticide Seed Treatment Products
- Seed Treatment + Rhizobium Inoculant
- Seed Treatment + Rhizobium Inoculant + Foliar Fungicide*
- Seed Treatment + Rhizobium Inoculant + Foliar Fungicide + Foliar insecticide*
- Seed Treatment + Rhizobium Inoculant + Foliar Fungicide + Foliar insecticide + Foliar-applied controlled-release nitrogen*

* Foliar fungicide, insecticide, and controlled-release nitrogen treatments were all applied at the R3 growth stage of soybean.



Figure 1. Twin row soybeans.

Results

Abbreviation	Management Practice
ST	Seed treated with Acceleron® Fungicide and Insecticide Seed Treatment Products (ST)
RI	Rhizobium inoculant
FF	Foliar fungicide
FI	Foliar insecticide
N	Foliar-applied controlled-release nitrogen

Figure 2a. Management practices and abbreviations.



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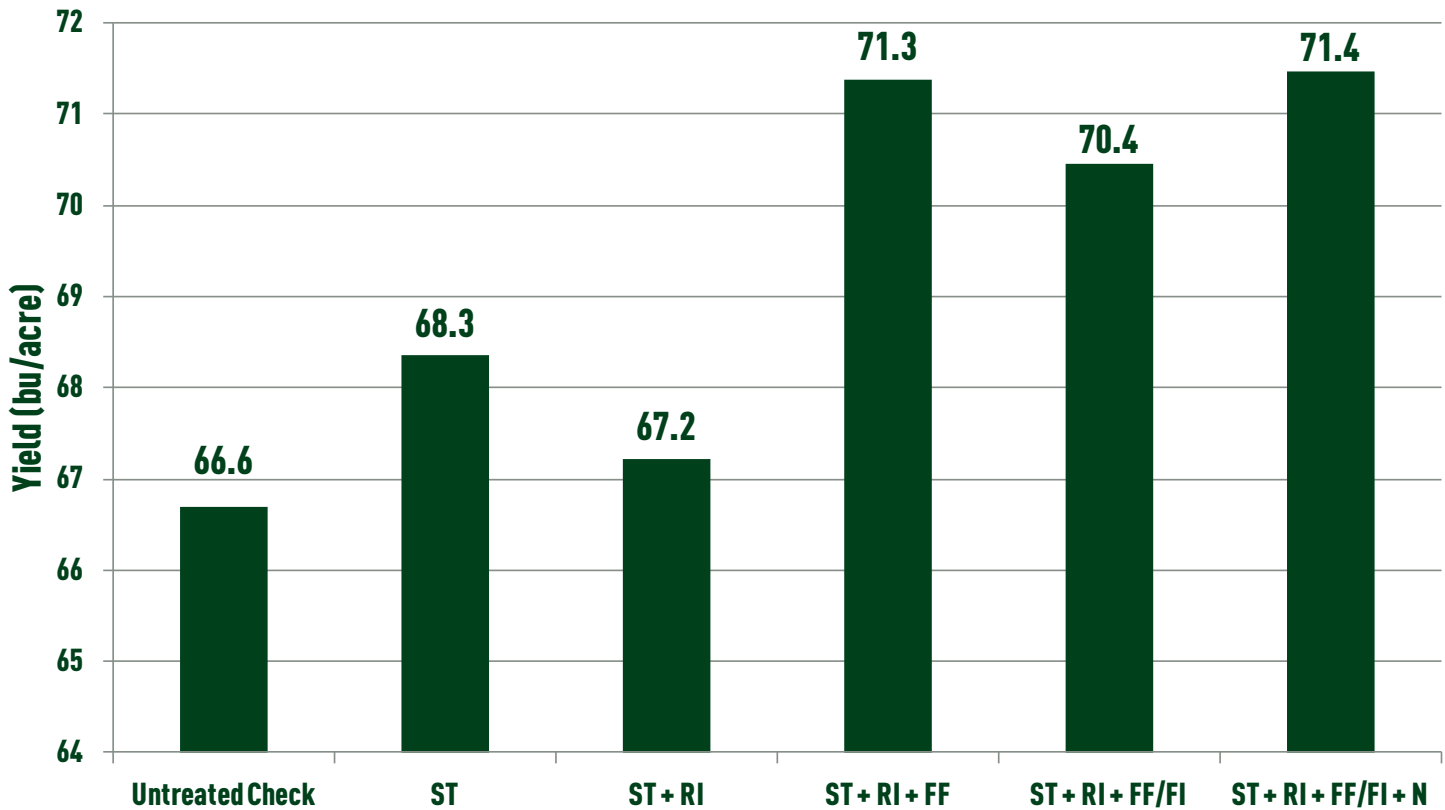


Figure 2b. Response of soybean yield to additional inputs.

Of the five management components studied, foliar applied fungicide at R3 showed the greatest response for the 2014 growing season (Figure 3). In 2014, cool wet conditions led to a high incidence of soybean diseases. The response to fungicides from year to year can be very inconsistent. Good agronomic practices such as row spacing, planting date, and population can help increase soybean yield. Further studies will be conducted to examine high management soybean systems and their ability to help maximize yield potential.

Sources:

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