

RESEARCH UPDATE

Soybean Yield Response to Management

2011-2013

Objectives

- **Objective 1:** Characterize the effect of multiple input interactions on soybean yield.
- **Objective 2:** Quantify Pioneer® brand soybean variety yield response to multiple inputs and their interactions.



Crop response to Cobra® one day after application.

Study Description

Location: Arlington, WI – 2011, 2012 and 2013

Objective 1 Experimental Design:

- **Fractional Factorial Factors:** (+/- combinations of)
 - Seed Treatments:** Optimize® 400, Trilex® 2000
 - Growth Regulation:** Cobra applied at V4
 - Foliar Fertilization:** 3-18-18 applied at V6
 - Foliar Insecticide:** Warrior® applied at R2
 - Foliar Fungicide:** Quilt Xcel® applied at R2
- **Pioneer® Brand Soybean Variety:** 92Y51 (RR)

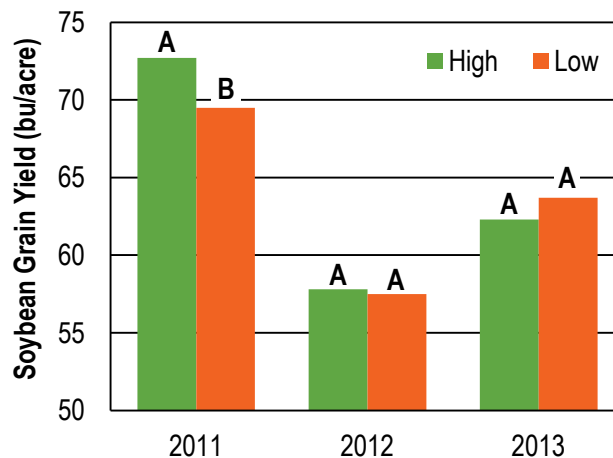
Objective 2 Experimental Design:

- **Plot Layout:** RCB split plot design
- **Replicates:** 4
- **Factors:**
 - Management Inputs:** All or no inputs from design 1
 - Pioneer Brand Soybean Varieties¹:**

92Y11 (RR)	92Y53 (RR)
92Y30 (RR)	92Y70 (RR) – 2011
92Y31 (RR)	92Y75 (RR) – 2012, 2013
92Y51	

Results

- **Objective 1:**
 - No synergies (positive interactions) were noted among the treatment combinations (data not shown). This suggests that yield gains were not enhanced by the pairing of multiple inputs.
- **Objective 2:**
 - Across all varieties, yield of the high input system significantly increased yield (+3.2 bu/acre) in only 2011.
 - Genetic yield variability among varieties ranged from 58.4 to 68.4 bu/acre ($p < 0.001$; data not shown).
 - There were no genetic by management interactions in this experiment ($p = 0.34$). This suggests that, among these varieties, growers can expect similar responses to management.
- **Conclusions:** Though management did significantly affect soybean yield in 1 of 3 years (+3.2 bu/acre), variety selection (+10 bu/acre) remains the foundation for maximizing soybean yield and profitability. Furthermore, we did not identify any synergistic interactions among the treatments tested.



Research conducted by Dr. Shawn Conley, John Gaska and Spyros Mourtzinis, University of Wisconsin-Madison as a part of the DuPont Pioneer Crop Management Research Awards (CMRA) Program. This program provides funds for agronomic and precision farming studies by university and USDA cooperators throughout North America. The awards extend for up to four years and address crop management information needs of DuPont Pioneer agronomists, Pioneer sales professionals and customers.



¹All Pioneer products are varieties unless designated with LL, in which case some are brands. All products are trademarks of their manufacturers.

RR - Contains the Roundup Ready® gene. Roundup Ready® is a registered trademark used under license from Monsanto Company. PIONEER® brand products are provided subject to the terms and conditions of purchase which are part of the labeling and purchase documents. 2013 data are based on average of all comparisons made in one locations through November 11, 2013. Multi-year and multi-location is a better predictor of future performance. Do not use these or any other data from a limited number of trials as a significant factor in product selection. Product responses are variable and subject to a variety of environmental, disease, and pest pressures. Individual results may vary.