

2007

# Iowa Crop Performance Test—Soybeans

Jim R. Rouse

*Iowa State University*, [rouse@iastate.edu](mailto:rouse@iastate.edu)

Follow this and additional works at: [http://lib.dr.iastate.edu/farms\\_reports](http://lib.dr.iastate.edu/farms_reports)



Part of the [Agricultural Science Commons](#), [Agriculture Commons](#), and the [Agronomy and Crop Sciences Commons](#)

---

## Recommended Citation

Rouse, Jim R., "Iowa Crop Performance Test—Soybeans" (2007). *Iowa State Research Farm Progress Reports*. 974.  
[http://lib.dr.iastate.edu/farms\\_reports/974](http://lib.dr.iastate.edu/farms_reports/974)

This report is brought to you for free and open access by Iowa State University Digital Repository. It has been accepted for inclusion in Iowa State Research Farm Progress Reports by an authorized administrator of Iowa State University Digital Repository. For more information, please contact [digirep@iastate.edu](mailto:digirep@iastate.edu).

---

# Iowa Crop Performance Test—Soybeans

**Keywords**

Agronomy

**Disciplines**

Agricultural Science | Agriculture | Agronomy and Crop Sciences

## Iowa Crop Performance Test—Soybeans

Jim Rouse, program manager  
Corn and Soybean Variety Testing  
Department of Agronomy

### Introduction

*Iowa Crop Performance Test—Soybeans.* This test is conducted each year to provide information farmers need to select the best varieties or brands for their production conditions. Seed companies, Iowa farmers, and the Iowa Crop Improvement Association may include entries in these tests. This information can be downloaded from <http://www.croptesting.iastate.edu/>.

The experiments grown in 2006 at the Southeast Research Farm were planted May 6 and harvested October 13. There were 40 SCN-susceptible lines and 80 SCN-resistant lines, all Roundup® Ready.

### Materials and Methods

Entries were grown in four-row plots with a row spacing of 30 inches. The seeding rate was nine seeds/foot (175,000 seeds/acre) unless a different rate was requested by the entrant. Entries were evaluated in one of four experiments, based on maturity group (MG) and advertised response to soybean cyst nematode (SCN). The early group included entries in with a MG rating of 2.8-3.2. The full-season entries had a MG rating of 3.3-3.9.

Each experiment was evaluated at four locations in south-central and southeast Iowa, with four replications per location. For the southeast district, test locations were near Creston, Melrose, Fairfield, and Crawfordsville. Entries designated as resistant to soybean cyst nematodes were also submitted to a soybean cyst nematode (SCN) reproduction test in a growth chamber.

*Weights, Moisture Content and Yield.* The plots were harvested with a self-propelled plot combine. Seed weights and moisture content were collected on the combine. Yields are reported in bushels/acre at a moisture content of 13% and as a percentage of the mean yield of the test.

*Maturity.* An entry was considered mature when 95% of the pods had turned brown. Seven to 10 days of good drying weather were required beyond that date before the soybeans were ready to combine. Maturity was evaluated at one location in each district. Maturity date was reported as “days from the beginning of September.” A “7” was September 7 and “32” was October 2.

*Lodging.* Scores were based on the average erectness of the main stem of all plants at maturity: 1=all plants erect, 2=slight lodging, 3=plants lodged at 45° angle, 4=severe lodging, and 5=all plants flat. Lodging was scored at all locations in each district.

*Protein and Oil Content.* The protein and oil content of the entries were determined with an Infratec near-infrared transmittance analyzer. The Infratec analyzer was calibrated by the Department of Agricultural and Biosystems Engineering at Iowa State University. Whole-grain samples from all plots were analyzed. The reported values are an average across each district and are reported at 13% moisture.

*Variety Selection and Data Interpretation.* The primary consideration in selecting a variety or brand for planting is harvestable yield. The average performance of an entry over two or more years should be considered when data are available.

### Results and Discussion

A yield summary is shown in Table 1 for the Crawfordsville location. Care should be used in comparing entries that occur in different tables of the final report. Growing conditions were not identical for each test; therefore, yield of an entry varies among tests. Information from individual locations highlights how variable yields can be in different environments.

Even though two entries have similar genetic potential for yield and other characteristics, their performance may differ because of variation in fertility and other environmental conditions among plots at the test sites.

This test was conducted as an experiment, not a contest. The amount of error in the test was

estimated by the LSD (least significant difference) values provided at the bottom of each table. If the difference between two entries is greater than the LSD value, it is reasonably certain that the entries differ in their genetic potential for the character. Likewise, if the difference between two entries is less than the LSD value, it can be assumed that no difference exists between the two entries.

The final report, including all descriptive information and all data collected can be viewed online at <http://www.croptesting.iastate.edu/>.

### Acknowledgments

Appreciation is extended to Kevin Van Dee, Southeast Farm superintendent, and his staff for their assistance with this study.

**Table 1. Yield<sup>a</sup> summary information for Crawfordsville.**

	<u>Average</u>	<u>Minimum</u>	<u>Maximum</u>	<u>LSD<sub>(0.25)</sub></u>
SCN-resistant, MG 2.8-3.2	50.9	44.2	60.7	2.3
SCN-resistant, MG 3.3-3.9	52.5	43.6	59.7	2.4
SCN-susceptible, MG 2.8-3.2	57.5	52.5	61.7	2.1
SCN-susceptible, MG 3.3-3.9	54.5	46.5	60.6	2.3

<sup>a</sup>Yield is listed as bushels/acre, adjusted to 13% moisture.