

# 2008 MICHIGAN SOYBEAN PERFORMANCE REPORT

D. WANG AND J. F. BOYSE, DEPARTMENT OF CROP AND SOIL SCIENCES

This report provides information on the performance of conventional and Roundup Ready soybean varieties in Michigan in 2008.

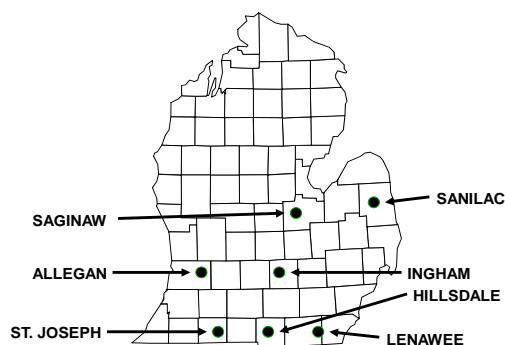
The presentation of data for the entries tested does not suggest approval or endorsement of varieties by Michigan State University.

## TESTING PROCEDURES

Six trials are reported here. The Central locations for both the conventional and the Roundup Ready trials include test sites in Allegan, Ingham, Saginaw and Sanilac counties. The Southern locations for both the conventional and the Roundup Ready trials include test sites in Hillsdale, Ingham, Lenawee, and St. Joseph (irrigated) counties. Twenty-three seed companies entered a total of 173 commercial varieties, and one public variety was entered. The cooperators, planting dates, harvest dates, and other site details for the seven locations are listed below.

Seed was planted in 6-row plots, 20 feet long with 15-inch row spacing, at a depth of 1.5-inches. The planting rate was 180,000 seeds/acre. At each location, varieties were replicated four times in a lattice design. The plots were trimmed to a length of 14 feet and the center four rows were harvested. Experimental design, data management, and data analysis were conducted with AGROBASE Generation II, (Agronomix Software, Inc., Winnipeg, Canada).

2008 TEST SITE COUNTY LOCATIONS



## TEST SITE INFORMATION

### Lenawee County

Nearest city: Britton  
Cooperator: David & Jason Woods  
Planting date: 5-16-08  
Harvest date: 10-7-08  
Previous crop: Corn  
Soil type: Brookston Clay Loam  
Fertilizer: None  
Herbicides: Conventional Trials – Preemerge .6 oz.  
FirstRate 84DG, 1.33 pt/A Dual II Magnum  
Roundup Ready Trials - 32 oz./A Roundup Ultra

### Hillsdale County

Nearest city: Reading  
Cooperator: Robert Lennard  
Planting date: 5-22-08  
Harvest date: 10-4-08  
Previous crop: Corn  
Soil type: Blount Silt Loam  
Fertilizer: 200# /A 0-23-30  
Herbicides: Conventional Trials – Preemerge .6 oz.  
FirstRate 84DG, 1.33 pt/A Dual II Magnum  
Roundup Ready Trials - 32 oz./A Roundup Ultra

### St. Joseph County - Irrigated

Nearest city: Mendon  
Cooperator: Roger and Anne Gentz  
Planting date: 5-13-08  
Harvest date: 10-14-08  
Previous crop: Seed Corn  
Soil type: Elston Sandy Loam  
Fertilizer: 150# /A 0-0-60; 40#/A 21-0-0-24  
Herbicide: Conventional Trials – Preemerge 1.5#/A Lorox  
50% DF, 1.33 pt/A Dual II Magnum  
Roundup Ready Trials - 32 oz./A Roundup Ultra

### Ingham County

Nearest city: East Lansing  
Cooperator: Michigan State University  
Planting date: 5-21-08  
Harvest date: 10-25-08  
Previous crop: Corn  
Soil type: Capac Loam  
Fertilizer: 75#/A 0-0-60  
Herbicides: Conventional Trials – Preemerge .6 oz.  
FirstRate 84DG, 1.33 pt/A Dual II Magnum,  
Roundup Ready Trials - 32 oz./A Roundup Ultra

### Allegan County

Nearest city: Hopkins  
Cooperator: Paul Puschel  
Planting date: 5-17-08  
Harvest date: 10-13-08  
Previous crop: Corn  
Soil type: Sebewa Loam  
Fertilizer: 250# /A 0-0-60  
Herbicides: Conventional Trials – Preemerge .6oz  
FirstRate 84DG, 1.33 pt/A Dual II Magnum  
Roundup Ready Trials - 32 oz./A Roundup Ultra

### Saginaw County

Nearest city: Saginaw  
Cooperator: Tom Hoff  
Planting date: 5-6-08  
Harvest date: 10-5-08  
Previous crop: Corn  
Soil type: Parkhill - Kilmanagh Loam  
Fertilizer: None  
Herbicides: Conventional Trials – Preemerge .6oz.

FirstRate 84DG.  
Roundup Ready Trials - 32 oz./A Roundup Ultra

### **Sanilac County**

Nearest city: Sandusky  
Cooperator: Gerstenberger Farms, Inc.  
Planting date: 5-10-08  
Harvest date: 10-19-08  
Previous crop: Corn  
Soil type: Parkhill Clay Loam  
Fertilizer: 150# /A 12-13-11, 10% sulfur, 1% zinc  
Herbicides: Conventional Trials - Preemerge 1.5#/A  
Lorox 50% DF, 1.33 pt/A Dual II Magnum  
Roundup Ready Trials - 32 oz./A Roundup Ultra

### **GROWING CONDITIONS**

**Sanilac County:** Excess rain during flowering resulted in heavy white mold disease pressure. The trial had a C.V. (coefficient of variation) too high for a precise trial and was not included in the publication.

**Ingham County:** The South RR late trial is not included in the performance report. The trial had a high C.V., (coefficient of variation) resulting from a combination of the dry weather and variable soil type in the field.

**Lenawee County:** Yields were reduced due to heavy rains in June to early July, and then a very dry August.

### **USING THE DATA**

Results are presented in Tables 1 through 6.

**Yield:** Yield is expressed as bushels per acre at 13% moisture and is reported as single and across site means for 2008. Two and three year means are also presented when applicable.

**Maturity Date (MAT):** The reported values (month-date) represent the means (rounded to the nearest day) of all reps at all sites. Entries were considered mature when 95% of the pods had attained their final color and would crack under finger pressure. Additional field drying was required before the plants were ready to harvest.

**Height:** Plant height, reported in inches, was measured at maturity from the soil surface to the tip of the main stem. The reported values are means of all reps at all sites.

**Lodging:** Lodging scores reflect the erectness of the plants before harvest. The reported values are means of all reps at all sites. Ratings are based on the following scale:

- 1= Almost all plants erect.
- 2= All plants leaning slightly, or fewer than 25% of the plants down.
- 3= All plants leaning moderately (45%), or 25% to 50% of the plants down.
- 4= All plants leaning considerably, or 50% to 80% of the plants down.
- 5= Almost all plants down.

**Protein and Oil Content:** Protein and oil content of the seed was determined using near-infrared reflectance and is expressed on a 13% moisture basis. The analysis was done on seed from a single replicate from the Ingham and Saginaw locations for the central trial and the Ingham and Lenawee locations for the southern trial.

**Phytophthora Resistance:** Information on the presence of phytophthora resistance genes was provided by the organizations entering varieties. Varieties denoted with:

- 1a are resistant to phytophthora Races 1, 2, 10, 11, 13-20, 24, 26 & 27.
- 1b are resistant to Races 1, 3-9, 13, 15, 18, 21, & 22.
- 1c are resistant to Races 1-3, 6-11, 13-15, 17, 21, 23, 24 & 26.
- 1k are resistant to Races 1-11, 13-15, 17, 18, 20-24 & 26.
- 3 are resistant to Races 1-5, 8 and 9.
- 6 are resistant to Races 1-4, 10, 12, 14-16, 18-21 & 25.
- 7 are resistant to Races 12, 16, 18 & 19.

**Soybean Cyst Nematode Resistance (SCN):** Seed Companies that screen varieties for SCN resistance have indicated if the variety has known susceptibility or resistance

- R – Resistant
- MR – Moderately Resistant
- S – Susceptible
- MS – Moderately Susceptible

These notations followed by a number indicate the identified cyst nematode race

### **SELECTING A VARIETY**

LSD (least significant difference, found at the bottom of each data column) values are useful when comparing two varieties in the same table. If the difference between two varieties is less than the LSD value, this difference is probably due to chance or minor environmental differences. However, if the difference between two varieties is greater than the LSD, there is a 95% or greater probability that the difference in performance is due to the greater yield potential of one variety. Valid comparisons can only be made between averages in the same column. The C.V. (coefficient of variation, found at the bottom of each data column) is indicative of the trial precision. Lower C.V. values indicate more precise trials.

The primary consideration in selecting a variety is yield. When evaluating a variety, consider yield performance over locations and across several years, if available. Considerations other than yield are also important in selecting a variety. It is especially important to select a variety that will mature before the first frost in the fall.

The degree of lodging varies among varieties. Lodging ratings should be used to evaluate potential harvest losses. Growers who have experienced lodging in the past and have had harvest problems may want to select a more

lodging resistant variety.

Alternatively, a variety susceptible to lodging may be planted at a slightly lower population to increase standability.

Growers should note seed size when selecting planting rates. Planting rates should be based on number of seeds per acre and not on pounds per acre.

It often benefits growers to select a few good varieties for planting each year. Yield determination and careful field evaluation during the growing season will add to the grower's knowledge of variety performance and allow for better selection.

## SEED TREATMENT

Treated soybean seed submitted for Michigan State University's Soybean Performance Trials are noted by abbreviation in the 'TMT' column. Questions concerning treatments should be directed to the seed company. Contact information can be found in the 'Directory of Companies'.

### Treatment Code:

- AM = Apron Maxx (Maxim)
- AM-C = Apron Maxx & Cruiser
- EN = Encase
- SG = Soy Guard
- SuG = SureGro
- O = Optimize
- T-AL = Trilex-AL
- G =Gaucho

## SPECIALTY SOYBEAN VARIETIES

Twelve special-use varieties were tested in this year's performance trials. This information will help soybean growers compare the potential profitability of special-use varieties to that of conventional varieties. DF Seeds DF222 Super2, and Vinton 81 are food-grade varieties. Zeeland Farm Services ZFSelect 291 LS, ZFSelect 722 LS, ZFSelect 725, LS ZFSelect 829 LS and ZFSelect 831 LS are low-saturated fat soybean varieties that have been grown under contract for oil production. Zeeland Farm Services ZFSelect 625 LL, ZFSelect 726 LL ZFSelect 728 LL and ZFSelect 830 LL are low-linolenic acid soybeans. Be sure to contact your buyers to determine which special-use varieties they will accept before signing contracts or ordering seed.