

2010 MICHIGAN SOYBEAN PERFORMANCE REPORT

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This report provides information on the performance of Conventional, Liberty Link, and Roundup Ready soybean varieties in Michigan in 2010.

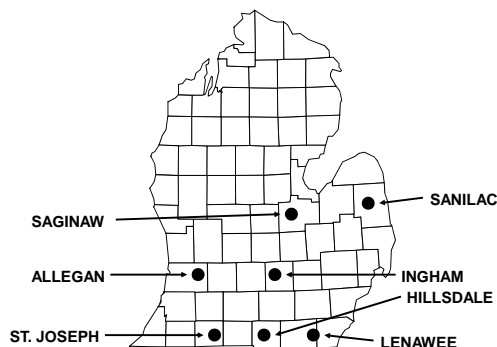
The presentation of data for the entries tested does not suggest approval or endorsement of varieties by Michigan State University.

TESTING PROCEDURES

Seven trials are reported here. The Central locations for the Conventional, the Liberty Link and the Roundup Ready trials include test sites in Allegan, Ingham, Saginaw and Sanilac Counties. The Southern locations for the Conventional, the Liberty Link and the Roundup Ready trials include test sites in Hillsdale, Ingham, Lenawee, and St. Joseph (irrigated) Counties. Twenty-two seed companies entered a total of 208 commercial varieties. 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).

2010 TEST SITE COUNTY LOCATIONS



TEST SITE INFORMATION

Lenawee County

Nearest city: Britton
Cooperator: David & Jason Woods
Planting date: 6-8-10
Harvest date: 10-12-10
Previous crop: Corn
Soil type: Brookston Clay Loam
Fertilizer: 250#/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

Hillsdale County

Nearest city: Reading
Cooperator: Robert Lennard
Planting date: 5-29-10
Harvest date: 10-5-10
Previous crop: Corn
Soil type: Blount Silt 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

St. Joseph County - Irrigated

Nearest city: Mendon
Cooperator: Roger and Anne Gentz
Planting date: 5-5-10
Harvest date: 10-22-10
Previous crop: Seed Corn
Soil type: Elston Sandy Loam
Fertilizer: 150#/A 0-0-60; 75#/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: 5-28-10
Harvest date: 10-11-10
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: 5-26-10
Harvest date: 10-19-10
Previous crop: Corn
Soil type: Sebewa Loam
Fertilizer: None
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: 5-6-10
Harvest date: 10-6-10
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: 5-19-10
Harvest date: 10-16-10
Previous crop: Corn
Soil type: Parkhill Clay Loam
Fertilizer: 250# /A 0-0-60, 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

WHITE MOLD TRIAL

The white mold trial was not included in this year's report due to little or no infection.

LIBERTY LINK TRIAL

Liberty Link soybean varieties were tested in a separate trial at all seven locations and treated with conventional herbicides as noted in test site information. The Ingham County site was not included in this report because the trial had a C.V. (coefficient of variation) too high for a precise trial.

GROWING CONDITIONS

Ingham County: The test site received only .71 inches of rainfall for 5 weeks (late July through August), resulting in a higher C.V.,(coefficient of variation), due to soil variability pronounced by this dry period.

Saginaw County: June through August experienced drought conditions, severely affecting yields.

St. Joseph County: Record yields resulting from above average temperatures and well-managed irrigation.

USING THE DATA

Results are presented in Tables 1 through 7.

Yield: Yield is expressed as bushels per acre at 13% moisture and is reported as single and across site means for 2010. 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 the Ingham County site. 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
- F = FaSTart
- T = Trilex
- ACL = Acceleron
- CM = Cruiser Maxx
- ESC = Escalate
- ALL = Allegiance
- G = Gaucho

SPECIALTY SOYBEAN VARIETIES

Ten 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 DF142F, DF Seeds DF155F, and DF Seeds DF222 Super2 are widely accepted for various food-grade uses such as soy milk and tofu production. Zeeland Farm Services ZFSelect 251LS, ZFSelect 291LS, ZFSelect 725LS, and ZFSelect 923LS, are low-saturated fat soybean varieties that have been grown under contract for oil production. Zeeland Farm Services, ZFSelect 728LL, ZFSelect 823LL, and ZFSelect 830LL 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.