This report provides information on the performance of Conventional, Liberty Link, and Roundup Ready soybean varieties in Michigan in 2012.

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

**TESTING PROCEDURES**

Eight trials are reported here. The Central locations for the Conventional, Roundup Ready and Liberty Link trials include test sites in Allegan, Ingham, Saginaw and Sanilac Counties. The Southern locations for the Conventional, Liberty Link and Roundup Ready trials include test sites in Ingham, Hillsdale, Lenawee, and St. Joseph (irrigated) Counties. Results from Allegan and Ingham Counties were not included in the trials. (See the ‘Growing Conditions / Comments’ for explanation.)

Twenty-two seed companies entered a total of 217 commercial varieties. The cooperators, planting dates, harvest dates, and other site details for the 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 160,000 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).

**TEST SITE INFORMATION**

**Lenawee County**
Nearest city: Britton
Cooperator: David & Jason Woods
Planting date: 6-4-12
Harvest date: 10-28-12
Previous crop: Corn
Soil type: Brookston Clay Loam
Fertilizer: 250# /A 0-0-60
Herbicides: Conventional Trials – Preemerge .6 oz.
Authority MTZ 12 oz., 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: 5-15-12
Harvest date: 10-25-12
Previous crop: Corn
Soil type: Sloan Silt Loam
Fertilizer: None
Herbicides: Conventional Trials – Preemerge Authority MTZ 12 oz., 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 and Family
Planting date: 5-14-12
Harvest date: 10-27-12
Previous crop: Seed Corn
Soil type: Elston Sandy Loam
Fertilizer: 100# /A 0-0-60
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

**Saginaw County**
Nearest city: Saginaw
Cooperator: Tom Hoff
Planting date: 5-18-12
Harvest date: 10-8-12
Previous crop: Corn
Soil type: Parkhill - Kilmanagh Loam
Fertilizer: None
Herbicides: Conventional Trials – Preemerge Authority MTZ 12 oz., 1.33 pt/A Dual II Magnum
Roundup Ready Trials - 32 oz./A Roundup Ultra

**Sanilac County**
Nearest city: Sandusky
Cooperator: Gerstenberger Farms, Inc.
Planting date: 5-17-12
Harvest date: 10-6-12
Previous crop: Sugar Beet
Soil type: Parkhill Clay Loam
Fertilizer: None
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

**LIBERTY LINK TRIAL**

**Liberty Link** soybean varieties were tested in two separate trials at six locations and treated with conventional herbicides as noted in test site information.
GROWING CONDITIONS / COMMENTS

Allegan and Ingham Counties: Plots were too severely affected by drought to be included in the report.

Hillsdale County: Timely rains and favorable soil type for the trial location (Sloan silt loam) combined for excellent yields. The Liberty Link trial was lost due to a spray error by a commercial applicator.

Lenawee County: This location was affected by drought conditions from planting through flowering. Hail damage occurred the 3rd week of September, causing some shredding of early maturing varieties.

Sanilac County: Timely rain and no disease pressure resulted in excellent yields.

St. Joseph County: This irrigated site had no disease pressure and resulted in excellent yields.

Saginaw County: Timely rain and no disease pressure and resulted in excellent yields.

Sanilac County: Timely rain and no disease pressure resulted in excellent yields.

USING THE DATA

Results are presented in Tables 1 through 8.

Yield: Yield is expressed as bushels per acre at 13% moisture and is reported as single and across site means for 2012. 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 are erect.
2= All plants leaning slightly, or fewer than 25% of the plants are down.
3= All plants leaning moderately (45%), or 25% to 50% of the plants are down.
4= All plants leaning considerably, or 50% to 80% of the plants are down.
5= Almost all plants are 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.

Phytophthora Resistance:

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
- O = Optimize
- N = Nitroshield
- P = Poncho
- V = Votivo

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**SPECIALTY SOYBEAN VARIETIES**

Nineteen 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 DF155F, DF Seeds DF 75155-78, Citizens 1103, Citizens 1109, Citizens 1112, Citizens 1202, Citizens 1203, Citizens 1205, Citizens 1206, Nature’s Genetics 2.0, Citizens Nature’s Genetics 2.4, Citizens Nature’s Genetics 1807, and Citizens Nature’s Genetics 6018 are widely accepted for various food-grade uses such as soy milk and tofu production. Zeeland Farm Services ZFSelect 251LS, ZFSelect 291LS, and ZFSelect 725LS 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, and ZFSelect 1125LL 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.

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“Comparing Soybean Varieties Has Never Been Easier!”

soybeanyielddata.msu.edu is the website

Follow the easily understood prompts

- ✓ Compare varieties tested
- ✓ Use the disease selection criteria
- ✓ Compare multiple years of data
- ✓ Select the location(s) of interest
- ✓ Use the statistical data for validity