

2022 MICHIGAN SOYBEAN PERFORMANCE REPORT

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This report provides information on the performance of Conventional and Roundup Ready soybean varieties in Michigan in 2022.

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

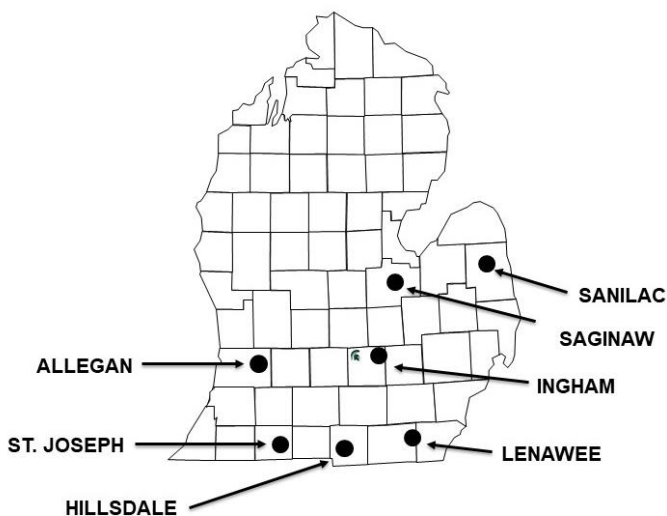
TESTING PROCEDURES

Seven locations are reported here. The Central locations for the Conventional and Roundup Ready trials include test sites in Allegan, Ingham, Saginaw, and Sanilac Counties. The Southern locations for the Conventional and Roundup Ready trials include test sites in Hillsdale, Ingham, Lenawee, and St. Joseph (irrigated) Counties.

Nineteen seed companies entered a total of 160 commercial varieties, not including the experimental MSU lines. 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 three times in a Randomized Complete Block Design (RCBD). All locations were planted to 17 feet with 3-foot alleys that were not trimmed. Only the center four rows were harvested. Experimental design, data management, and data analysis were conducted with Genovix, (Agronomix Software, Inc., Winnipeg, Canada).

2022 TEST SITE COUNTY LOCATIONS



TEST SITE INFORMATION

Lenawee County

Nearest city: Britton
Cooperator: David & Jason Woods
Planting date: 05/13/2022
Harvest date: 10/08/2022
Previous crop: Wheat
Soil type: Clay Loam
Fertilizer: 200 #/A K2O
Herbicides: Pre-emerge 12 oz. Authority MTZ, 1.5 pt./A Medal II – over the entire field
Conventional – 1 qt./A Basagran 32 oz./A Tapout
Roundup Ready Trials – 32 oz./A Tapout

Hillsdale County

Nearest city: Reading
Cooperator: Robert Lennard
Planting date: 05/23/2022
Harvest date: Conv. trials 10/15/2022, RR trials 10/16/2022
Previous crop: Corn
Soil type: Silty loam
Fertilizer: 250 #/A 11-52-90
Herbicides: Pre-emerge 12 oz. Authority MTZ, 1.5 pt./A Medal II
Conventional Trials – 1 qt./A Basagran, 5 oz./A Raptor
Roundup Ready Trials – 32 oz./A Roundup PowerMax

St. Joseph County - Irrigated

Nearest city: Mendon
Cooperator: Roger and Anne Gentz and Family
Planting date: 05/20/2022
Harvest date: 10/14/2022
Previous crop: Seed Corn
Soil type: Elston Sandy loam
Fertilizer: 250 #/A 0-0-60
Herbicides: Pre-emerge 12 oz. Authority MTZ, 1.5 pt./A Medal II
Roundup Ready Trials – 32 oz. Tapout over the entire field

Ingham County

Nearest city: Webberville
Cooperator: Walnut-Vu Farm
Planting date: 05-31-2022
Harvest date: 11/02/2022 to 11/03/2022
Previous crop: Corn
Soil type: Loam
Fertilizer: 300 #/A Potash
Herbicides: Pre-emerge 16 oz./A Authority MTZ, 1.33 pt./A Medal II
Conventional Trials – 1 qt./A Basagran, 5 oz./A Raptor
Roundup Ready Trials – 32 oz./A Roundup PowerMax, 32 oz./A Tapout

Allegheny County

Nearest city: Wayland
Cooperator: Ann & Jeremy Biesbrock
Planting date: 05/17/2022
Harvest date: 10/21/2022 to 10/22/2022
Previous crop: Corn
Soil type: Matherton Loam
Fertilizer: 150 #/A Potash
Herbicides: Pre-emerge 16 oz. Authority MTZ, 1.33 pt./A Medal II

Saginaw County

Nearest city: Saginaw
Cooperator: Tom Hoff
Planting date: 05/10/2022
Harvest date: 10/07/2022
Previous crop: Corn
Soil type: Tappan-Londo Loam
Fertilizer: 200 #/A Potash
Herbicides: Pre-emerge 12 oz. Authority MTZ, 1.5 pt./A Medal II – over the entire field
Conventional Trials – 1 qt./A Basagran, 32 oz./A Tapout
Roundup Ready Trials – 32 oz./A Roundup PowerMax, 32 oz./A Tapout

Sanilac County

Nearest city: Sandusky
Cooperator: Gerstenberger Farms, Inc.
Planting date: 05/12/2022
Harvest date: 10/10/2022 and 10/15/2022
Previous crop: Corn
Soil type: Parkhill Clay Loam
Fertilizer: 200 #/A 0-0-60
Herbicides: Pre-emerge 1.5 #/A Lorox 50% D.F., 1.5 pt./A Medal II
Conventional Trials – 1 qt./A Basagran, 32 oz./A Tapout
Roundup Ready Trials – 32 oz./A Roundup PowerMax, 32 oz./A Tapout



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 2022. Two- and three-year means are also presented when applicable.

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 4 reps at all sites.

Lodging: Lodging scores reflect the erectness of the plants before harvest. The reported values are means of 4 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.

Phytophthora Resistance: Information on the presence of Phytophthora resistance genes was provided by the organizations entering varieties. Varieties are 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. The source of resistance was mostly PI88788 with some Peking and PI89722. Sources are found in parenthesis after the variety name in the variety list table.

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'.

Code	Treatment
• ACL	Acceleron-Insecticide
• AA Elite	Ag Armour Elite
• Agr	Agri Max-Fung-Insecticide
• CM	Cruiser Maxx-Insecticide
• Cue	Cue-isoflavone compound
• DFender	Defender-Fungicide
• ECL-Trio	Eclipse Trio-Fungicide
• Ecl-US-Q	EclipseUS quad IM-Fungicide
• EG	EverGoEnergy-Fungicide
• Encase	Encase-Root growth
• Eq-VIP	Equity VIP-Insecticide/Fungicide
• G	Gacho-Insecticide
• I	ILeVO-Nematicide
• N-H	Inhibit
• Lum	Lumisena-Fungicide
• N	NForce-Nitrogen Fixing Bacterium
• Obv	Obvius Plus-Fungicide
• P	Poncho-Insecticide/Nematicide
• Rel	Relena-Fungicide
• Sa	Saltro-Nematicide
• Titan	Titan-Insecticide
• Vib	Vibrance Maxx-Fungicide
• V	Votivo-Insecticide/Nematicide
• Vay	Vayantis-Fungicide

SELECTING A VARIETY

Some of the varieties in the conventional trials have special traits such as a specific oil profile, which growers can sell for premium prices. Talk to the seed dealer about premium varieties. Seed dealers and their contact information are listed in the 'Index of Varieties and the 'Directory of Companies'.

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.

HERBICIDE TRAITS

The column in the chart labeled HERB contains the variety herbicide resistance.

- Conv=conventional
- LL=Liberty Link
- RR1=Roundup Ready
- RR2X=Roundup Ready 2 Extend
- XF=Extend Flex
- E3=Enlist E3
- GT27=Glyphosate Tolerant
- LLGT27=Liberty Link and Glyphosate Tolerant