

2020 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 2020.

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

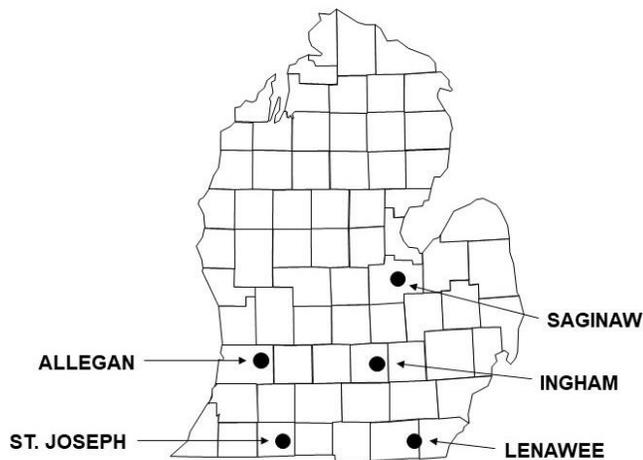
TESTING PROCEDURES

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

Nineteen seed companies entered a total of 196 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 four 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 AGROBASE Generation II, (Agronomix Software, Inc., Winnipeg, Canada).

2020 TEST SITE COUNTY LOCATIONS



TEST SITE INFORMATION

Lenawee County

Nearest city: Britton
Cooperator: David & Jason Woods
Planting date: 6-2-2020
Harvest date: 10-14-2020
Previous crop: Corn
Soil type: Clay Loam
Fertilizer: 250# /A K2O
Herbicides: Pre-emerge 12 oz. Authority MTZ, 1.5 pt. /A Medal II- Roundup PowerMax 32 oz. over the entire field.
Conventional & Liberty Link Trials- 1 qt. Basagran, 5 oz. /A Raptor
Roundup Ready Trials – 32 oz. /A Roundup PowerMax

Hillsdale County

Nearest city: Reading
Cooperator: Robert Lennard
Planting date: We were unable to plant this location, due to COVID-19 restrictions.

St. Joseph County - Irrigated

Nearest city: Mendon
Cooperator: Roger and Anne Gentz and Family
Planting date: 5-26-2020
Harvest date: 10-15-2020
Previous crop: Commercial Corn
Soil type: Oshtemo
Fertilizer: 200+#/A 0-0-60
Herbicides: Pre-emerge 12 oz. Authority MTZ, 1.5 pt. /A Medal II Roundup PowerMax 32 oz. over the whole field
Conventional & Liberty Link Trials- 1 qt. Basagran, 5 oz. /A Raptor
Roundup Ready Trials – 32 oz. /A Roundup PowerMax

Ingham County

Nearest city: Williamston
Cooperator: Cremer Farms
Planting date: 6-4-2020 conventional trials and 6-5-2020 for the Roundup trials
Harvest date: 11-2-2020 conventional trials and 11-3-2020 Roundup trials
Previous crop: Corn
Soil type: Sandy Loam Capac
Fertilizer: Grid Potash/ MAP
Herbicides: Pre-emerge Authority MTZ 16 oz. /A, 1.5 pt. /A Medal II 32 oz. Roundup PowerMax
Conventional & Liberty Link Trials- 1 qt. Basagran, 5 oz. /A Raptor 5 oz. /A Assure II over entire field
Roundup Ready Trials – 32 oz. /A Roundup PowerMax

Allegan County

Nearest city: Wayland
Cooperator: Jim Wykoski
Planting date: 5-13-2020
Harvest Date: 10-7-2020
Previous Crop: Corn
Soil Type: Colwood Silt Loam
Fertilizer: 200#/A Potash
Herbicides: Pre-emerge 16 oz. Authority MTZ, 1.5 pt. /A Medal II- over the entire field 32 oz. Roundup PowerMax Conventional & Liberty Link Trials- 1 qt. Basagran, 5 oz./A Raptor, First Rate
Roundup Ready Trials – 2 applications of 32 oz. /A Roundup PowerMax
1 application 5 oz. /A Assure II

Saginaw County

Nearest city: Saginaw
Cooperator: Tom Hoff
Planting date: 5-24-2020
Harvest date: 10-10-20
Previous crop: Corn
Soil type: Clay Loam
Fertilizer: 200#/A Potash
Herbicides: Pre-emerge 12 oz. Authority MTZ, 1.5 pt. /A Medal II- over the entire field 32 oz. Roundup PowerMax Conventional & Liberty Link Trials- 1 qt. Basagran, 5 oz. /A Raptor
Roundup Ready Trials – 32 oz. /A Roundup PowerMax 5 oz. /A Assure II

Sanilac County

Nearest city: Sandusky
Cooperator: Gerstenberger Farms, Inc.
Planting date: We were unable to plant this location, due to COVID-19 restrictions.

LIBERTY LINK TRIAL

The Central Liberty Link soybean varieties were tested in Ingham, Saginaw and Sanilac Counties.

The South Liberty Link soybean varieties were tested in Hillsdale, Lenawee, Ingham and St. Joseph Counties. Both trials were treated with conventional herbicides as noted in test site information.

GROWING CONDITIONS / COMMENTS

There were some heavy rain showers during the planting season, but otherwise planting was normal. The St. Joseph county site had a heavy rain immediately after planting causing very low stand counts and high variation, so the data from these trials will not be published. The COVID-19 pandemic caused restrictions to research and travel, so the Sanilac and Hillsdale sites were not planted. Most of Michigan was dry during the early growing season and White Mold as well as most diseases were not a factor. The Allegan location was dry and spider mites came to the west side of the field causing irregular growth and some trials to be thrown out. Excessive rain in August caused plants to grow tall and

caused more lodging in some areas. Early October was favorable for harvest. After 2 weeks of rainy weather, early November set record warm temperatures for the remainder of the harvest season. Overall yields were good in most areas.

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 2020. 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 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.

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'.

	Code	Treatment
•	ACL	Accelaron
•	Agr F/I	Agrishield Fungicide/Insecticide
•	ALL	Allegiance
•	AM	Apron Maxx (Maxim)
•	AM-C	Apron Maxx & Cruiser
•	Clar	Clariva
•	CM	Cruiser Maxx
•	Ecl-US-Q	EclipseUS quad IM
•	EG	EverGoEnergy
•	ENC	Encase
•	ESC	Escalate
•	G	Gaicho
•	I	ILeVO (BayerCropScience)
•	Lum	Lumisena
•	N	NForce
•	N-H	Inhibit
•	O	Optimize
•	P	Poncho
•	PA	PA2030
•	SmartCote S	SmartCote Supreme
•	SS	SureStand
•	Vib	Vibrance
•	V	Votivo