



2019 Michigan Soybean Performance Report

Goldenview Farms, St. Joseph, MI

Putting Your Checkoff To Work



Michigan Soybean
Promotion Committee
The Soybean Checkoff
michigansoybean.org

The **2019 Michigan Soybean Performance Report** is a result of a cooperative effort of Michigan State University, Michigan State University Extension and the Michigan Soybean Promotion Committee. This information will help you to make informed critical choices for your 2020 soybean crop. Publication and distribution of this report is provided by checkoff funds through the Michigan Soybean Promotion Committee. This data can be accessed electronically at www.varietytrials.msu.edu/soybean and in a searchable database at www.soybeanyielddata.msu.edu.

**2019
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 2019.

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

This data is posted at <https://varietytrials.msu.edu/>.

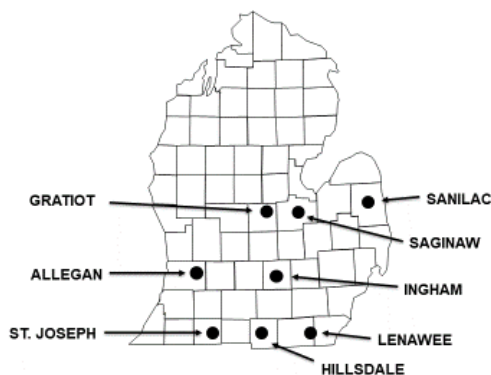
TESTING PROCEDURES

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

Twenty-one seed companies entered a total of 194 commercial varieties. There are many new products in the trials this year. Since varieties that contain Enlist and GT27 herbicide resistant traits were deregulated, we were able to include those lines in the trials. 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 16 feet with 4 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).

2019 TEST SITE COUNTY LOCATIONS



TEST SITE INFORMATION

Allegan County

Nearest city: Wayland
Cooperator: Jim Wykoski
Planting date: 5-17-19
Harvest Date: 11-9-19
Previous Crop: Corn
Soil Type: Colwood Silt Loam
Fertilizer: 50 lb/A DAP, 50 lb/A AMS, 110lb/A potash, 11.5 lb/A micronutrients
Herbicides: Preemergent 12 oz/A Authority MTZ, 1.5 pt/A Medal II
Postemerg 5 oz/A Assure II-over entire field
Conventional & Liberty Link Trial- 1 qt/A Basagran, 5 oz/A Raptor
Roundup Ready Trials- 32 oz/A Roundup Powermax

Gratiot County

Nearest city: Breckenridge
Cooperator: John Hardman
Planting date: 5-16-19
Harvest date: 12-23-19
Previous crop: Corn
Soil type: Parkhill Loam
Fertilizer: none
Herbicides: Preemerge Lorox 1.5 lb/A, 1.5 pt/A Medal II
Postemerg 5 oz/A Assure II over entire field
Conventional & Liberty Link Trials- 1 qt/A Basagran,
Roundup Ready Trials – 32 oz/A Roundup Powermax
5 oz/A

Ingham County

Nearest city: Mason
Cooperator: MSU
Planting date: 6-7-19
Harvest date: 11-5-19
Previous crop: Corn
Soil type: Loam
Fertilizer: none
Herbicides: Preemerge 12 oz/A Authority MTZ, 1.5 pt/A Medal II- over the entire field
Conventional & Liberty Link Trials- 1 qt/A Basagran, 5 oz/A Raptor
Roundup Ready Trials – 32 oz/A Roundup Powermax

Hillsdale County

Nearest city: Reading
Planting date: We were unable to plant this location, due to excessive rainfall.

Lenawee County

Nearest city: Britton
Cooperator: David & Jason Woods
Planting date: 6-9-19
Harvest date: 11-7-19
Previous crop: Soybeans
Soil type: Sandy Clay Loam
Fertilizer: 250lb/A K2O

Herbicides: Preemerge 12 oz/A Authority MTZ, 1.5 pt/A Medal II-Over the entire field
Conventional & Liberty Link Trials- 1 qt/A Basagran, 5 oz/A Raptor
Roundup Ready Trials – 32 oz/A Roundup Powermax

Saginaw County

Nearest city: Saginaw
Cooperator: Tom Hoff
Planting date: 6-8-19
Harvest date: 10-20-19
Previous crop: Corn
Soil type: Clay Loam
Fertilizer: 200lb/A Potash
Herbicides: Preemerge 12 oz/A Authority MTZ, 1.5 pt/A Medal II- over the entire field
Conventional & Liberty Link Trials- 1 qt/A Basagran, 5 oz/A Raptor
Roundup Ready Trials – 32 oz/A Roundup Powermax
5 oz/A Assure II

Sanilac County

Nearest city: Sandusky
Planting date: We were unable to plant this location, due to excessive rainfall.

St. Joseph County - Irrigated

Nearest city: Mendon
Cooperator: Roger and Anne Gentz and Family
Planting date: 6-7-19
Harvest date: 10-25-19
Previous crop: Seed Corn
Soil type: Oshtemo
Fertilizer: 200 lb/A 0-0-60 Variable Rate Spread
Herbicides: Preemerge 12 oz/A Authority MTZ, 1.5 pt/A Medal II over the whole field
Conventional & Liberty Link Trials- 1 qt/A Basagran, 5 oz/A Raptor
Roundup Ready Trials – 32 oz/A Roundup Powermax

LIBERTY LINK TRIAL

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

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

GROWING CONDITIONS / COMMENTS

Wet conditions plagued the planting season and many fields did not get planted, including 2 of our test sites. According to USDA statistics, as of June 16th, only 53% of Michigan soybeans were planted compared to the 94% average over the last five years.

After the very wet spring, most of the summer growing season was dry. This resulted in shorter plants and reduced lodging.

Rain, again, restricted the harvest season. Wet conditions delayed harvest in many areas. As of November 4th, 2019, only 57% of soybeans grown in Michigan were harvested (USDA-NASS). At the time of printing this report, the Gratiot county trial has not been harvested.

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 averages for 2019. 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.

Protein and Oil Content: Protein and oil content of the seed was determined using near-infrared reflectance and is expressed on a **DRY MATTER basis** (previous years were reported as 13% moisture basis). The analysis was done on seed from all 4 replications from the Gratiot location for the central trial and the Ingham location 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
- MS – Moderately Susceptible
- S – 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'.

Code	Treatment
• AA	AgArmour
• ACL	Accelaron
• AGR	Agrishield Max
• ALL	Allegiance
• AM	Apron Maxx (Maxim)
• AM-C	Apron Maxx & Cruiser
• Clar	Clariva
• CM	Cruiser Maxx
• D	DFender
• Ecl-US-Q	EclipseUS quad IM
• EG	EverGolEnergy
• ENC	Encase
• ESC	Escalate
• EQ	Equity VIP
• G	Gaucho
• I	ILeVO (BayerCropScience)
• MER	Mertect
• N	NForce
• NS	NemaStrike
• N-H	Inhibit
• O	Optimize
• P	Poncho
• PA	PA2030
• R	Redigo
• SmartCote S	SmartCote Supreme
• SS	SureStand
• Vib	Vibrance
• V	Votivo

Comparing Soybean Varieties

Has Never Been Easier!

Soybeanyielddata.msu.edu

- ✓ Sort by location
- ✓ Compare specific brands
- ✓ Select by resistance traits
- ✓ Limit the range of maturities
- ✓ View only the top varieties
- ✓ Use the statistical data for validity

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2019 DIRECTORY OF COMPANIES

<u>BRAND</u>	<u>COMPANY NAME AND ADDRESS</u>	<u>BRAND</u>	<u>COMPANY NAME AND ADDRESS</u>
AG AMOUR	AG Armour Seeds Inc. 8236 N. Williams Rd. St. Johns, MI 48879 www.ag.armourseeds.com	MCIA	Michigan Crop Improvement Assn. 2905 Jolly Rd. Okemos, MI 48864 www.michcrop.com
CREDENZ	BASF 2 TW Alexander Drive, Durham, NC 27709 www.agriculture.basf.com	NATURE'S GENETICS	Citizens LLC 421 N Cochran Ave. Charlotte, MI 48813 www.citizenslevator.com
DF SEEDS	DF Seeds, LLC P.O BOX 159 Dansville, MI 48819 www.dfseeds.com	DYNA-GRO	Nutrien Ag Solutions 4648 S. Garfield Rd. Auburn, MI 48611 www.dynagroseed.com
FS HiSOY®	Growmark, Inc. 1701 Towanda Ave Bloomington, IL 61701 www.fsseeds.com	RENK SEED	Renk Seed 6809 Willburn Rd. Sun Prairie, WI 53590 www.Renkseed.com
GOLDEN HARVEST	Syngenta Seeds Inc. 11055 Wayzata Blvd. Minnetonka, MN 55440 www.syngenta.com	RUPP	Rupp Seeds, Inc. 17919 Co. Rd. B Wauseon, OH 43567 www.ruppseeds.com
HDC	Hensall Co-op 1 Davidson Drive Hensall, ON N0M1X0 www.hensallco-op.ca	SEED CONSULTANTS	Seed Consultants Inc. 648 Miami Trace Rd. SW Washington Court House, OH 43160 www.seedconsultants.com
KEY	AGRA Solutions LLC 23778 Jennings Delphos Rd. Delphos, OH 45833 www.agrasolutions.com	SEVITA INTERNATIONAL	Sevita International 595570 Hwy 59, R.R. #6 Woodstock, ON N4S 7W1 www.sevita.com
LEGACY	Legacy Seeds, Inc. PO Box 68-290 Depot St. Scandinavia, WI 54977 www.legacyseeds.com	SPECIALTY	Specialty Hybrids 306 N Main St. Monticello, IN 47960 www.specialtyhybrids.com
LG SEEDS	LG Seeds 9915 W M21 Ovid, Mi 4886 www.legendseeds.net	WELLMAN	Wellman Seeds, Inc. 23778 Delphos Jennings Rd. Delphos, OH 45833 www.wellmanseeds.com
LOCAL SEED	Local Seed Company 802 Rozelle Street Mephis, TN 38104 www.localseed.com	ZFS	Zeeland Farm Services, Inc. 2525 84 th Avenue Zeeland, MI 49464 www.zfsinc.com
M&W	M&W Seeds Inc. 8443 Wilcox Rd. Eaton Rapids, MI 48827 www.mwseeds.com		

TABLE 1. 2019 MICHIGAN CENTRAL CONVENTIONAL SOYBEAN VARIETY TRIAL REPORT

BRAND	VARIETY	Maturity Group	TMT'	Phyto Res	SCN	Aphid Res	2019 AVERAGE						
							2019 AVG	18-19 AVG	17-19 AVG	Allegan	Gratiot	Saginaw	Height
AG Armour Seeds	AA 1914 N	1.9	Ag Armour	R	R	60.7	70.4	55.7	56.0	32	1.5	38.0	21.9
AG Armour Seeds	AA 2114 N	2.1	Ag Armour	1k	MR	65.4	72.6	66.9	56.7	32	1.1	38.2	20.3
AG Armour Seeds	AA 2214 N	2.2	Ag Armour	1a	R	63.4	74.7	58.5	56.9	35	1.7	39.5	19.9
DF Seeds	DF 155 F	2.5	DFender N N-HI	1k	R	64.5	63.7	62.6	58.7	34	1.5	40.3	20.8
DF Seeds	DF 187 N	1.8	DFender N N-HI	R	R	62.6	64.9	63.1	62.2	31	1.4	40.6	19.9
DF Seeds	DF 210 N	2.1	DFender N N-HI	1k	R	66.9	74.5	69.6	56.6	32	1.4	37.9	21.7
DF Seeds	DF 227 N	2.2	DFender N N-HI	1a	R	63.6	68.8	66.6	57.9	34	1.8	38.2	20.3
DF Seeds	DF 260 N	2.6	DFender N N-HI	1k	R	69.2	76.1	68.1	63.5	33	1.6	36.5	22.4
Dyna-Gro Seed	S2207N	2.2	Eq.Clar	1a	MR	63.9	68.0	66.6	58.0	34	1.6	38.8	20.1
Dyna-Gro Seed	S2409N	2.4	Eq.Clar	R	R	65.6	73.0	60.9	63.0	31	1.1	38.2	20.9
Hensall Co-op	HDC Adare	1.5	Vib,O			**	**	**	61.6	33	1.1	**	**
Hensall Co-op	HDC Blake	1.9	Vib,O			**	**	**	50.5	34	1.1	**	**
LG Seeds	C2300	2.3	AgriShield Max, I	1a	R	62.9	66.4	64.0	56.9	33	1.4	37.8	20.3
LG Seeds	LG S2010	2.0	AgriShield Max, I	1a	R	60.8	71.3	55.7	55.5	32	1.1	36.6	21.5
LG Seeds	LG S2765	2.7	AgriShield Max, I	R	R	63.4	68.3	58.2	60.0	32	1.3	37.7	21.0
MSU	E12076T	2.9	DFender N N-HI	R	R	67.9	69.5	66.8	64.2	34	1.6	37.8	20.9
MSU	E12076T-03	2.4	DFender N N-HI	R	R	69.9	82.5	65.7	61.6	33	1.6	38.1	20.7
MSU	E13100-03	2.5	DFender N N-HI	R	R	63.8	75.0	58.8	57.7	35	1.4	39.1	21.5
MSU	E13268	1.7	DFender N N-HI	1c	R	62.2	63.2	63.3	57.0	30	1.2	36.7	21.4
MSU	E14077	2.2	DFender N N-HI	1k	R	65.4	69.2	67.0	60.1	35	1.4	39.5	21.0
MSU	E15339	2.2	DFender N N-HI	R	R	68.4	73.0	70.6	61.8	34	1.9	37.2	21.4
MSU	E15345	2.7	DFender N N-HI	1k	R	68.2	72.8	69.8	77.9	35	2.0	37.1	20.8
MSU	E15347	2.5	DFender N N-HI	R	R	62.7	68.2	66.5	60.2	33	1.4	37.4	21.0
MSU	E15351	2.2	DFender N N-HI	R	R	64.0	66.5	65.9	59.0	33	1.4	37.3	20.6
MSU	E15901	2.3	DFender N N-HI	1k	R	60.3	68.2	56.7	55.9	31	1.2	39.7	19.7
MSU	E16189	2.8	DFender N N-HI	1c	R	63.7	68.4	60.2	59.1	41	2.2	40.4	19.8
MSU	E16266	2.2	DFender N N-HI	1k	R	68.1	66.1	68.7	57.0	33	1.2	37.5	21.3
MSU	E16380	2.8	DFender N N-HI	1k	R	68.5	71.2	69.4	62.0	34	1.1	36.7	21.3
MSU	E16387	2.6	DFender N N-HI	1k	R	66.3	70.1	66.3	60.8	32	1.1	36.2	21.2
MSU	E16410	2.8	DFender N N-HI	R	R	66.4	69.5	63.5	58.7	34	1.3	37.4	21.7
MSU	E17004	2.3	DFender N N-HI	R	R	61.9	74.1	55.9	55.6	32	1.2	39.1	20.8
MSU	E17054	2.1	DFender N N-HI	R	R	65.7	78.4	66.4	57.9	32	1.4	39.6	20.0
MSU	E17062	2.7	DFender N N-HI	R	R	62.6	72.8	56.4	58.5	34	1.8	39.6	20.6
MSU	E17069	3.0	DFender N N-HI	R	R	67.5	77.7	60.8	60.8	41	2.4	41.6	19.8
MSU	E17167	2.2	DFender N N-HI	R	R	63.5	76.8	55.6	58.2	38	1.6	39.2	21.4
MSU	E17184	2.2	DFender N N-HI	R	R	64.9	73.0	61.8	59.8	36	1.8	39.3	21.4
MSU	E17203	2.2	DFender N N-HI	R	R	69.8	81.8	65.1	62.6	33	1.3	39.2	20.9
MSU	E17205	2.7	DFender N N-HI	R	R	65.5	74.2	62.3	60.0	36	1.5	37.6	21.9
MSU	E17227	2.3	DFender N N-HI	R	R	62.9	70.9	57.6	60.2	34	1.2	37.8	21.5
MSU	E17269	2.1	DFender N N-HI	R	R	61.3	66.9	60.7	56.2	32	1.3	37.4	20.8
MSU	E17274	2.2	DFender N N-HI	R	R	60.6	71.0	52.2	58.5	35	2.1	38.0	19.9
MSU	E17275	2.2	DFender N N-HI	R	R	68.1	77.9	64.9	61.4	34	2.3	38.7	19.8

TABLE 1. 2019 MICHIGAN CENTRAL CONVENTIONAL SOYBEAN VARIETY TRIAL REPORT

BRAND	VARIETY	Maturity Group	TMT ¹	Phyto Res	SCN	Aphid Res	YIELD (BU/AC)							
							2019 AVG	18-19 AVG	17-19 AVG	Allegan	Gratiot	Saginaw	Height	Lodging
MSU	E17283	2.7	DFender N N-H I	R			67.0	78.3	66.5	56.1	31	1.2	39.7	20.2
MSU	E17506T	2.3	DFender N N-H I	R			59.8	67.0	51.3	61.0	35	1.7	39.5	20.2
MSU	E17508	3.0	DFender N N-H I	R			61.1	70.8	57.2	55.3	28	1.0	40.0	21.3
MSU	E17520	2.2	DFender N N-H I				58.3	67.1	56.6	51.2	32	1.2	37.4	21.3
MSU	E17545	2.2	DFender N N-H I				59.6	68.6	**	51.6	31	1.1	37.8	22.3
MSU	E17550	2.2	DFender N N-H I				58.1	67.1	55.2	52.0	34	1.2	37.4	21.4
MSU	E17801-08	2.9	DFender N N-H I				51.3	63.6	47.0	43.2	34	1.6	39.4	19.5
MSU	E17808-01	2.0	DFender N N-H I				52.4	62.4	46.8	48.1	34	1.4	39.7	21.5
Nature's Genetics	Nat Gen 2.4	2.5	V				54.3	63.8	**	47.6	32	1.5	42.4	19.8
Nature's Genetics	Nat. Gen. 1926	2.4	V				63.0	75.2	58.6	55.2	34	1.3	39.6	21.3
Sevita International	Candor	1.9	Untreated				52.5	59.3	48.8	49.3	29	1.2	42.4	19.8
Zeeland Farm Services	e12H902	1.2		R			51.3	54.2	51.8	48.0	26	1.2	40.6	22.0
Zeeland Farm Services	e13H988	1.3		1k	R		54.6	60.9	52.3	50.5	27	1.1	41.0	21.9
Zeeland Farm Services	ZFS 1326	2.6	Ecl-US-Q, N		R		65.1	68.6	61.6	62.4	33	1.8	39.6	20.3
Zeeland Farm Services	ZFS 1716	1.6	Ecl-US-Q, N		R		57.9	59.0	51.2	54.6	29	1.3	41.0	20.1
Zeeland Farm Services	ZFS 1719	1.9	Ecl-US-Q, N	1k	R		58.6	59.8	57.1	55.1	31	1.0	38.3	20.8
Zeeland Farm Services	ZFS 1821	2.1	Ecl-US-Q, N	1k	R		66.6	69.9	63.4	57.6	34	1.0	37.7	20.7
Zeeland Farm Services	ZFS 1925HO	2.5	Ecl-US-Q, N		R		52.1	58.6	50.0	47.6	36	1.4	40.6	21.5
Zeeland Farm Services	ZFS 1930HO	3.0	Ecl-US-Q, N		R		49.5	56.3	47.7	44.6	36	1.8	40.1	20.0
Zeeland Farm Services	ZFS 2025HO	2.5	Ecl-US-Q, N		R		55.6	61.4	53.5	52.0	33	1.3	41.0	20.6
GRAND MEAN							62.0	71.2	58.9	56.8	33	1.4	38.8	20.9
Max.							69.9	82.5	69.6	66.3	41	2.4	42.4	22.4
Min.							49.5	54.2	46.8	43.2	26	1.0	36.2	19.5
LSD (0.05)							4.8	7.0	6.5	5.2	2.8	0.4	2.2	0.7
CV (%)							6.0	5.9	6.6	5.5	9.0	31.6	3.4	2.0

¹ Seed Treatment: See 'Seed Treatment' paragraph (under 'Using the Data') for product code

* High yield in plot
Protein and oil are based on dry matter

** Insufficient data
Michigan State University varieties are experimental

Top 1/3 of trial is Bold

TABLE 2. 2019 MICHIGAN SOUTH CONVENTIONAL SOYBEAN VARIETY TRIAL REPORT

BRAND	VARIETY	Maturity Group	TMT ¹	Phyto RES	SCN	Aphid Res	YIELD (BU/AC)				2019 AVERAGE				
							18-19		17-19		St. Joseph		Lenawee		
							AVG	AVG	AVG	AVG	St. Joseph	Height	Lodging	Protein	Oil
DF Seeds	DF 155 F	2.5	DFender N N-HI	1k	S		64.1	65.5	65.5	65.7	62.5	34	1.9	38.2	22.2
DF Seeds	DF 260 N	2.6	DFender N N-HI	1k	R		*74.1			*79.7	68.5	31	2.3	34.6	23.5
DF Seeds	DF 278 N	2.7	DFender N N-HI	1k	R		73.8	72.2	72.2	73.7	73.9	34	1.8	35.9	21.9
DF Seeds	DF 317 N	3.1	DFender N N-HI	1k	R		69.8	69.8	71.7	75.4	64.3	36	2.3	37.7	22.0
Dyna-Gro Seed	S2409N	2.4	Eq,Clar		R		68.0			68.3	67.7	32	1.5	36.6	22.2
Dyna-Gro Seed	S2908N	2.9	Eq,Clar		R		67.1	70.3		64.5	69.8	37	1.6	37.6	21.3
LG Seeds	C2300	2.3	AgriShield Max, I	1a	R		63.2	65.0		63.0	63.3	36	2.0	36.2	21.8
LG Seeds	LGS2010	2.0	AgriShield Max, I	1a	R		65.9			66.3	65.5	32	1.1	34.5	22.1
LG Seeds	LGS2765	2.7	AgriShield Max, I		R		68.2	70.1		75.3	61.1	35	2.1	36.0	22.0
MSU	E12076T	2.9	DFender N N-HI		R		66.1	68.1	68.2	75.0	57.2	37	2.5	36.2	22.0
MSU	E12076T-03	2.4	DFender N N-HI		R		69.1			65.6	72.6	35	2.4	36.7	21.8
MSU	E13100-03	2.5	DFender N N-HI		R		65.3			64.7	65.9	38	1.9	36.6	22.9
MSU	E13268	1.7	DFender N N-HI	1c	R		66.5	67.0	66.8	63.9	69.0	33	2.1	35.5	22.4
MSU	E14077	2.2	DFender N N-HI	1k	R		69.2	68.4		66.9	71.4	37	1.8	36.8	22.4
MSU	E15339	2.2	DFender N N-HI		R		69.8	69.9	70.1	68.0	71.7	37	2.6	35.2	22.9
MSU	E15345	2.7	DFender N N-HI		R		70.4	70.8	70.8	72.4	68.3	34	2.4	34.9	21.7
MSU	E15347	2.5	DFender N N-HI		R		68.8			66.4	71.2	33	1.8	35.1	22.4
MSU	E15351	2.2	DFender N N-HI		R		73.2	72.6	71.9	72.2	74.2	35	2.5	35.3	21.8
MSU	E15901	2.3	DFender N N-HI	1k	R	R	67.8			65.2	70.4	35	1.4	36.7	21.3
MSU	E16189	2.8	DFender N N-HI	1c	R		70.4	69.6		70.6	70.2	44	1.9	38.0	21.0
MSU	E16266	2.2	DFender N N-HI	1k	R	R	70.8	70.3		70.1	71.5	34	1.6	37.5	21.9
MSU	E16380	2.8	DFender N N-HI	1k	R		68.4	68.7		64.5	72.2	34	1.3	35.4	22.4
MSU	E16387	2.6	DFender N N-HI	1k	R		62.9			66.8	59.0	33	2.0	34.8	22.2
MSU	E16410	2.8	DFender N N-HI		R		66.0	67.8		59.3	72.6	34	1.5	35.4	23.2
MSU	E17004	2.3	DFender N N-HI		R		72.2			66.7	*77.6	35	1.5	36.7	22.9
MSU	E17054	2.1	DFender N N-HI		R		72.0			70.5	73.4	35	1.8	36.8	21.4
MSU	E17062	2.7	DFender N N-HI		R		70.9			68.9	72.8	36	2.6	37.9	21.6
MSU	E17069	3.0	DFender N N-HI		R		69.3			71.6	66.9	42	2.6	39.3	20.9
MSU	E17167	2.2	DFender N N-HI		R		72.6			68.8	76.4	39	2.3	37.6	22.4
MSU	E17184	2.2	DFender N N-HI		R		65.1			58.3	71.8	38	1.9	36.5	23.5
MSU	E17203	2.2	DFender N N-HI		R		65.9			64.3	67.5	33	1.5	37.0	22.2
MSU	E17205	2.7	DFender N N-HI		R		62.8			64.0	61.5	39	1.9	34.7	23.3
MSU	E17227	2.3	DFender N N-HI		R		72.6			70.3	74.9	34	1.4	35.3	23.1
MSU	E17269	2.1	DFender N N-HI		R		72.0			71.6	72.4	34	2.0	35.5	21.6
MSU	E17274	2.2	DFender N N-HI		R		60.3			66.4	54.1	37	3.8	34.6	21.0
MSU	E17275	2.2	DFender N N-HI		R		69.6			69.2	70.0	36	3.8	34.9	21.6
MSU	E17283	2.7	DFender N N-HI		R		70.3			69.5	71.0	33	2.1	38.8	21.0
MSU	E17506T	2.3	DFender N N-HI		R		64.2			65.0	63.3	38	2.0	38.2	20.9
MSU	E17508	3.0	DFender N N-HI		R		59.4			56.0	62.8	28	1.1	39.5	22.2
MSU	E17520	2.2	DFender N N-HI		R		63.7			59.8	67.4	36	2.0	35.9	22.2

TABLE 2. 2019 MICHIGAN SOUTH CONVENTIONAL SOYBEAN VARIETY TRIAL REPORT

BRAND	VARIETY	Maturity Group	TMT ¹	Phyto RES	SCN	Aphid Res	YIELD (BU/AC)				Oil		
							2019 AVG	18-19 AVG	17-19 AVG	2019 AVERAGE			
MSU	E17545	2.2	DFender N N-H I				54.4	47.8	60.9	33	2.1	37.5	22.8
MSU	E17550	2.2	DFender N N-H I				62.8	57.8	67.8	37	2.0	36.8	21.9
MSU	E17801-08	2.9	DFender N N-H I				52.1	50.0	54.1	39	2.6	39.5	19.4
MSU	E17808-01	2.0	DFender N N-H I				59.5	53.1	65.8	32	1.5	39.1	22.1
Nature's Genetics	Nat. Gen 1926	2.4	V				68.1	68.0	68.1	34	2.0	39.8	21.9
Nature's Genetics	Nat. Gen 2.4	2.5	V				57.8	50.2	65.4	35	2.0	40.5	21.0
Wellman Seeds	W 296	2.6	ENCASE	MR			69.1	67.2	70.9	36	1.6	37.8	21.1
Zeeland Farm Services	ZFS 1326	2.6	Ecl-US-Q, N	R			66.3	68.5	63.4	35	2.0	36.5	21.7
Zeeland Farm Services	ZFS 1629 N	2.9	Ecl-US-Q, N	R			64.1	65.2	63.8	35	2.4	35.6	21.9
Zeeland Farm Services	ZFS 1821	2.1	Ecl-US-Q, N	1k			63.8	66.4	57.3	33	1.1	37.5	20.3
Zeeland Farm Services	ZFS 1925HO	2.5	Ecl-US-Q, N	R			52.3	50.0	54.5	36	1.9	39.7	22.3
Zeeland Farm Services	ZFS 1930HO	3.0	Ecl-US-Q, N	R			51.7	55.3	48.1	38	2.9	39.2	19.6
Zeeland Farm Services	ZFS 2025HO	2.5	Ecl-US-Q, N	R			62.8	66.0	59.6	32	2.0	38.2	21.9
GRAND MEAN							66.1	65.6	66.7	35	2.0	37	22
Max.							74.1	79.7	77.6	44	3.8	41	23
Min.							51.7	47.8	48.1	28	1.1	35	19
LSD (0.05)							8.2	8.1	11.2	3.2	0.7	1.2	0.8
CV (%)							9.5	9.2	10.1	7.8	31.0	2.0	2.2

¹ Seed Treatment: See 'Seed Treatment' paragraph (under 'Using the Data') for product code

* High yield in plot

Top 1/3 of trial is Bold

Protein and oil are based on dry matter (reported as 13% moisture in previous years)

Michigan State University varieties are experimental

St. Joseph location is irrigated

TABLE 3. 2019 MICHIGAN CENTRAL ROUND-UP READY / Early Maturity, (1.3 - 2.2), SOYBEAN VARIETY TRIAL REPORT
YIELD (BU/AC)

BRAND	VARIETY	Maturity Group	Herb	TMT ¹	Phyto Res	SCN	2019 18-19 17-19					2019 AVERAGE				
							AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG
AG Armour Seeds	AA 2017 GT	2.0	GT	Ag Armour	1k		53.5	61.8	57.8	54.6	48.1	30	1.0	40.8	20.7	
Credenz	CZ 1549GTLL	1.5	LLGT27	R,A,P,V,I	1k	R	56.4		65.4	55.2	50.3	31	1.0	38.5	21.8	
Credenz	CZ 1660GTLL	1.6	LLGT27	R,A,P,V,I	1k	R	61.8		71.2	55.2	59.0	29	1.0	39.4	22.0	
Credenz	CZ 1850GTLL	1.8	LLGT27	R,A,P,V,I	1k	R	62.1		73.1	56.5	56.7	28	1.0	38.5	21.5	
Credenz	CZ 1859GTLL	1.8	LLGT27	R,A,P,V,I	1k	R	64.1		74.6	62.3	55.3	29	1.0	39.7	21.6	
Credenz	CZ 2040GTLL	2.0	LLGT27	R,A,P,V,I	1a	R	62.3		70.4	59.0	57.6	31	1.0	38.0	21.4	
DF Seeds	DF 3130 N E3	1.3	ENLIST	DFender N-H-I	1c	R	59.0		70.0	48.0	58.9	31	1.1	38.9	21.3	
DF Seeds	DF 3180 N E3	1.8	ENLIST	DFender N-H-I	1c	R	58.6		67.9	55.0	52.9	27	1.0	39.0	21.3	
DF Seeds	DF 3190 N E3	1.9	ENLIST	DFender N-H-I	1c	R	59.4		70.4	53.0	54.8	29	1.0	37.9	22.2	
DF Seeds	DF 3200 N E3	2.0	ENLIST	DFender N-H-I	1c	R	63.6		78.6	54.7	57.4	31	1.0	39.5	21.3	
DF Seeds	DF 5100 N R2Y	1.0	RR2Y	DFender N-H-I	1c	R	54.9		66.2	51.9	46.7	27	1.0	38.9	21.7	
DF Seeds	DF 5173 N R2Y	1.7	RR2Y	DFender N-H-I	1k	R	61.7	68.5	67.7	58.2	58.7	32	1.0	38.1	21.6	
DF Seeds	DF 5227 N R2Y	2.2	RR2Y	DFender N-H-I	1c	R	63.4		73.2	60.7	56.4	35	1.0	38.2	20.7	
DF Seeds	DF 6150 N LLGT27	1.6	LLGT27	DFender N-H-I	1k	R	61.1		75.4	51.3	56.6	29	1.0	37.9	22.4	
DF Seeds	DF 6189 N LLGT27	1.8	LLGT27	DFender N-H-I	1c	R	64.6		74.7	58.7	*60.4	30	1.0	37.8	21.8	
DF Seeds	DF 6210 N LLGT27	2.0	LLGT27	DFender N-H-I	1c	R	60.4		74.8	48.4	58.1	28	1.0	38.9	21.9	
DF Seeds	DF 6219 N LLGT27	2.1	LLGT27	DFender N-H-I	1c	R	61.0		73.6	57.1	52.3	30	1.1	37.0	21.5	
DF Seeds	DF 7090 N X	0.9	RR2X	DFender N-H-I	1c	R	55.0		64.6	48.7	51.6	27	1.0	37.8	21.6	
DF Seeds	DF 7220 N X	2.2	RR2X	DFender N-H-I	1c	R	65.2		77.7	60.0	57.9	33	1.3	37.8	21.6	
Dyna-Gro	S13XT89	1.3	RR2X	Eq,Clar	1c	R	56.6		67.0	53.8	49.0	29	1.0	37.9	21.3	
Dyna-Gro	S14EN90	1.4	ENLIST	Eq,Clar	1c	R	61.7		71.2	58.2	55.6	30	1.0	40.0	20.7	
Dyna-Gro	S17EN80	1.7	ENLIST	Eq,Clar	S	R	58.6		64.3	58.9	52.7	28	1.0	38.6	21.0	
Dyna-Gro	S17XT29	1.7	RR2X	Eq,Clar	1c	R	60.3		71.5	55.3	54.2	28	1.0	39.2	21.2	
Dyna-Gro	S18XT38	1.8	RR2X	Eq,Clar	1a,3a	MR	62.4	69.2	67.2	78.1	55.0	33	1.0	40.1	21.3	
Dyna-Gro	S19EN59	1.9	ENLIST	Eq,Clar	1c	R	60.0		73.1	48.7	58.1	28	1.0	37.3	22.1	
Dyna-Gro	S19XT30	1.9	RR2X	Eq,Clar	S	R	61.4		72.8	58.4	53.0	30	1.0	38.4	21.4	
Dyna-Gro	S21EN70	2.1	ENLIST	Eq,Clar	1c,3a	R	61.2		76.3	55.3	51.9	30	1.0	39.3	21.4	
Dyna-Gro	S21XT49	2.1	RR2X	Eq,Clar	1a,3a	R	*66.0	72.1	77.5	63.2	57.3	32	1.0	39.6	20.8	
FS HISOY®	HS 19X90	1.9	RR2X	ACL + I	1c	R	63.4		77.7	56.8	55.6	30	1.0	37.5	21.4	
FS HISOY®	HS 21X90	2.1	RR2X	ACL + I	1c	R	59.2		74.5	50.6	52.6	28	1.0	37.7	21.1	
Genesis	G1680GL	1.6	LLGT27	ECLISPE US	1k	R	63.2		67.6	*63.9	58.0	27	1.0	38.4	22.3	
Genesis	G1840E	1.8	ENLIST	ECLISPE US	1c	R	57.2		64.3	56.4	51.0	26	1.0	38.3	21.4	
Genesis	G2140E	2.1	ENLIST	ECLISPE US	1c,3a	R	58.0		72.6	48.7	52.7	31	1.1	38.8	21.6	
Genesis	G2181GL	2.2	LLGT27	ECLISPE US	1c	R	61.4		74.7	57.7	51.9	29	1.0	39.8	21.8	
Golden Harvest	GH1915X	1.9	RR2X	AM-C, Clar + Mer	1c	R3MR14	62.9	67.7	67.3	72.8	56.1	30	1.0	38.4	21.9	
Golden Harvest	GH2041X	2.0	RR2X	AM-C, Clar + Mer	1c	R3MR14	62.2	67.7	67.1	73.0	57.1	29	1.0	38.5	21.4	
Golden Harvest	GH2230X	2.2	RR2X	AM-C, Clar + Mer	1c	R3MR14	59.9	66.1	66.5	68.9	55.8	30	1.1	37.6	21.5	
Legacy Seeds	LS-1039N	1.0	RR2Y	L-Coat Total	1k,3a	R1, R3, R5	51.6		66.1	49.0	39.8	26	1.0	37.3	21.9	
Legacy Seeds	LS-1439N	1.4	RR2X	L-Coat Total	1c	R3, MR14	57.9		74.0	47.2	52.5	28	1.0	38.4	21.0	
Legacy Seeds	LS-1510N	1.5	LLGT27	L-Coat Total	1k	R3, MR14	58.7		74.6	56.1	51.5	28	1.0	39.0	22.1	
Legacy Seeds	LS-1639N	1.6	RR2X	L-Coat Total	1c	R3	60.2	63.6	68.7	64.7	52.3	28	1.0	40.7	21.2	
Legacy Seeds	LS-1810N	1.8	LLGT27	L-Coat Total	1c	R3, MR14	59.7		71.6	55.4	52.1	27	1.0	37.7	22.3	
Legacy Seeds	LS-1820N	1.8	ENLIST	L-Coat Total	1c	R3, MR14	60.3		66.3	62.8	51.8	28	1.0	38.9	21.5	
Legacy Seeds	LS-1838N	2.1	RR2X	L-Coat Total	1a,3c	MR3, MR14	61.2	69.8	70.1	57.7	55.7	31	1.0	39.3	21.0	
Legacy Seeds	LS-2139N	2.1	RR2X	L-Coat Total	1a,3c	R3, MR14	62.0	69.4	77.6	53.2	55.3	32	1.0	38.6	21.2	
LG Seeds	C1838RX	1.8	RR2X	AgriShield Max, I	1c	Yes	63.3	70.7	74.5	60.2	55.2	32	1.0	38.4	21.5	
LG Seeds	LGS1635RX	1.6	RR2X	AgriShield Max, I	1c	Yes	59.2	62.4	67.6	57.3	52.8	28	1.0	39.9	21.9	

TABLE 3. 2019 MICHIGAN CENTRAL ROUND-UP READY / Early Maturity, (1.3 - 2.2), SOYBEAN VARIETY TRIAL REPORT
YIELD (BU/AC)

2019 AVERAGE

BRAND	VARIETY	Maturity		Herb	TMT ¹	Phyto Res	SCN	2019 18-19 17-19				Lodging	Protein	Oil		
		Group	AVG					AVG	AVG	Allegan	Gratiot				Saginaw	Height
LG Seeds	LGS2007RX	2.0	RR2X	AgriShield Max, I	3a,1a	Yes		65.9	72.2	*79.7	60.2	57.7	31	1.0	39.8	21.2
Local Seed Company	LS1887X	1.8	RR2X	Radius 500	1a	MR3,MR14		61.7		73.3	55.2	56.7	31	1.0	39.3	21.0
Local Seed Company	ZS1999 GL	1.9	LLGT27	Radius 500		R3,MR14		59.9		70.3	55.6	53.9	30	1.0	38.1	21.7
Local Seed Company	ZS2097 E3	2.0	ENLIST	Radius 500	1c,3a	R3,MR14		61.9		74.8	55.0	55.8	31	1.0	38.2	21.9
M&W Seeds	19R32 GT27	1.9	LLGT27		1k	MR14		60.7		69.3	56	56.7	30	1.0	38.5	21.4
M&W Seeds	20E51 E3	2.0	ENLIST					60.1		73.9	53.7	52.8	29	1.0	37.3	22.4
M&W Seeds	21E26 E3	2.1	ENLIST					59.5		69.4	55.0	54.2	29	1.0	38.0	21.1
M&W Seeds	2119 GTLL27	2.1	LLGT27	CM				62.4		73.4	54.0	59.8	30	1.0	39.2	21.3
Renk Seed	RS149NX	1.4	RR2X	Eclips US	1c	R		57.8	62.9	69.8	50.8	52.7	27	1.0	39.2	20.9
Renk Seed	RS153NR2	1.5	RR2Y	Eclips US	1c			60.0		67.8	57.5	54.6	30	1.0	39.2	21.8
Renk Seed	RS170NX	1.6	RR2X	Eclips US	1c	R		59.4		68.4	56.5	53.2	28	1.0	38.5	21.4
Renk Seed	RS200NX	2.0	RR2X	Eclips US	1c	R		59.6		72.5	53.9	52.3	29	1.0	37.3	20.8
Renk Seed	RS213NR2	2.1	RR2Y	Eclips US	1c	R		59.3	66.5	69.4	50.2	58.2	31	1.0	39.6	21.7
Renk Seed	RS219NX	2.1	RR2X	Eclips US	1a,3a	R		64.5	71.9	75.3	57.9	60.3	33	1.0	40.2	20.9
Rupp Seeds	RS 18XT17	1.8	RR2X	AM-C	1a,3a	R3, MR14		63.0	71.9	73.9	59.8	55.2	31	1.0	39.9	20.7
Rupp Seeds	RS 21XT18	2.1	RR2X	AM-C	1a,3a	R3, MR14		64.6	72.6	76.1	61.3	56.4	33	1.0	38.8	21.0
Specialty Hybrids	2083R2X	2.0	RR2X	ACL, G, NemaStrike	1a, 3a	R3		64.9	73.5	78.0	58.8	57.9	33	1.0	39.6	20.9
Specialty Hybrids	2293R2X	2.2	RR2X	ACL, G, NemaStrike	1c	R3		60.8		67.4	59.5	55.6	32	1.0	37.9	22.2
GRAND MEAN								63.2		71.7	55.7	54.6	30	1.0	38.7	21.5
Max.								65.9		79.7	63.9	60.4	35	1.3	40.8	22.4
Min.								51.6		57.8	47.2	39.8	26	1.0	37.0	20.7
LSD (0.05)								4.6		6.6	7.9	7.1	2	0.1	2.1	0.7
CV (%)								8.0		5.6	8.5	7.8	8	7.9	3.2	1.9

¹ Seed Treatment: See 'Seed Treatment' paragraph (under 'Using the Data') for product code

* High yield in plot

Top 1/3 of trial is Bold

Protein and oil are based on dry matter (reported as 13% moisture in previous years)

TABLE 4. 2019 MICHIGAN CENTRAL ROUND-UP READY / Late Maturity, (2.3 - 3.1), SOYBEAN VARIETY TRIAL REPORT

BRAND	VARIETY	Mat Group	Herb	TMT ¹	Phyto RES	SCN	2019 AVERAGE							
							AVG	18-19 AVG	17-19 AVG	Allegan	Gratiot	Saginaw	Height	Lodging
Credenz	CZ 2360GTLT	2.3	LLGT27	R,A,P,V,I	1a	R	65.6	74.5	60.4	61.9	33	1.0	37.2	22.2
Credenz	CZ 2550GTLT	2.5	LLGT27	T-Methyl	1a	R	66.0	72.5	64.4	61.2	33	1.1	39.6	21.0
Credenz	CZ 2579GTLT	2.5	LLGT27	R,A,P,V,I	1k	R	65.0	69.6	65.0	60.5	35	1.4	38.9	20.9
Credenz	CZ 2760GTLT	2.7	LLGT27	R,A,P,V,I	Testing	R	67.4	75.4	63.2	63.6	32	1.0	38.9	21.6
Credenz	CZ 2889GTLT	2.8	LLGT27	R,A,P,V,I	1a	R	62.9	67.8	60.1	60.8	37	1.5	37.8	20.6
Credenz	CZ 3099GTLT	3.0	LLGT27	R,A,P,V,I	1k	R	64.9	71.2	63.5	60.0	36	1.5	40.4	20.4
DF Seeds	DF 3240 N E3	2.4	ENLIST	DFender N N-H I	1k	R	61.2	70.8	52.8	60.0	31	1.0	36.3	21.7
DF Seeds	DF 6269 N LLGT27	2.6	LLGT27	DFender N N-H I	1c	R	68.2	75.6	65.7	63.3	34	1.3	38.6	21.4
Dyna-Gro	S23XT69	2.3	RR2X	Eq,Clar	1c	R	62.8	67.7	59.9	60.7	32	1.0	39.9	21.3
Dyna-Gro	S23XT90	2.3	RR2X	Eq,Clar	1c	R	61.7	68.5	60.5	56.1	32	1.0	38.6	20.3
Dyna-Gro	S27EN89	2.7	ENLIST	Eq,Clar	1k	R	64.0	67.4	66.5	58.2	31	1.2	37.4	22.4
Dyna-Gro	S28XT58	2.8	RR2X	Eq,Clar	1c	R	68.1	77.2	62.4	62.7	34	1.1	39.0	20.9
FS HISOY®	HS 23B90	2.3	LLGT27	ACL + I	1k	R	63.6	75.7	59.9	55.2	32	1.0	38.4	21.7
FS HISOY®	HS 24X80	2.4	RR2X	ACL + I	1c	R	66.5	77.3	59.7	62.6	29	1.0	38.3	20.5
FS HISOY®	HS 26B90	2.6	LLGT27	ACL + I	1c	R	65.4	77.3	60.8	58.1	33	1.0	39.0	22.1
FS HISOY®	HS 28X70	2.8	RR2X	ACL + I	1c	R	66.8	76.4	63.7	60.3	34	1.1	39.1	20.7
Golden Harvest	GH2537X	2.5	RR2X	AM-C, Clar + Mer	1c	R3MR14	63.0	69.5	58.3	59.1	34	1.2	38.2	20.9
Golden Harvest	GH2552X	2.5	RR2X	AM-C, Clar + Mer	1c	MR3	64.6	72.3	59.8	61.8	34	1.0	39.1	21.1
Golden Harvest	GH2788X	2.7	RR2X	AM-C, Clar + Mer	1c	MR3MR14	63.6	74.2	60.1	59.6	28	1.0	39.6	20.9
LG Seeds	C2255R2	2.0	RR2	AgriShield Max, I	1c	R3,MR14	60.4	64.8	57.9	58.5	32	1.0	39.1	21.2
LG Seeds	C2888RX	2.8	RR2X	AgriShield Max, I	1k	R	66.8	75.3	64.5	59.1	34	1.1	40.1	20.6
LG Seeds	LGS2444RX	2.4	RR2X	AgriShield Max, I	1c	R	68.7	75.6	63.1	61.5	29	1.0	39.7	20.2
Local Seed Company	LS2685X	2.6	RR2X	Radius 500	1c	R3,MR13	57.5	62.4	52.9	57.2	32	1.3	40.5	20.9
Local Seed Company	ZS2496 E3	2.4	ENLIST	Radius 500	1k	R3,MR14	61.0	64.7	57.8	60.6	29	1.0	37.2	21.5
Local Seed Company	ZS2898 GL	2.8	LLGT27	Radius 500	1c	R3,MR14	64.7	71.2	60.3	62.5	32	1.1	38.3	21.8
Local Seed Company	ZS3097 E3	3.0	ENLIST	Radius 500	1c	R3,MR14	62.5	65.7	60.2	61.5	33	1.1	37.2	21.7
M&W Seeds	23E52 E3	2.3	ENLIST		1c	R	59.1	61.8	56.6	58.9	31	1.0	37.8	21.2
M&W Seeds	23T88 GT27	2.3	LLGT27		1c	R	63.7	70.9	59.0	61.3	33	1.0	38.6	21.7
M&W Seeds	26T32 GT27	2.6	LLGT27		1c	R	65.5	68.8	63.5	64.1	31	1.2	39.3	20.8
MCIA	2319 GTLL27	2.3	LLGT27	CM	1c	R	66.0	71.6	64.8	61.5	33	1.0	38.2	21.7
Renk Seed	RS248NX	2.4	RR2X	Eclips US	1c	R	66.8	74.4	64.8	61.3	31	1.1	37.5	22.0
Rupp Seeds	RS 23BG30	2.3	LLGT27	AM-C	1k	R3, MR14	62.8	67.9	59.1	61.3	32	1.0	38.4	21.9
Rupp Seeds	RS 23EL91	2.3	ENLIST	AM-C	1c	R	59.6	62.7	59.2	56.8	30	1.0	37.7	21.2
Rupp Seeds	RS 23XT22	2.3	RR2X	AM-C	1c	R3, MR14	59.6	68.7	51.1	59.0	31	1.0	39.3	20.7
Rupp Seeds	RS 25XT12	2.5	RR2X	AM-C	1k	R	65.4	73.3	60.7	62.2	32	1.1	38.0	20.4
Specialty Hybrids	2583R2X	2.5	RR2X	ACL, G, NemaStrike	1c	R3	64.3	73.5	58.7	60.8	33	1.0	39.2	20.5
Specialty Hybrids	2894R2X	2.8	RR2X	ACL, G, NemaStrike	1c	R3	66.8	76.2	63.0	61.2	34	1.0	38.7	20.5
Specialty Hybrids	2983R2X	2.9	RR2X	ACL, G, NemaStrike	1c	R3	65.9	75.2	60.2	62.9	36	1.2	37.7	20.4
GRAND MEAN							64.2	71.4	60.6	60.5	32	1.1	38.6	21.1
Max.							68.2	81.4	66.5	64.1	37	1.5	40.5	22.4
Min.							57.5	61.8	51.1	55.2	28	1.0	36.3	20.2
LSD (0.05)							5.7	8.5	7.3	6.0	2	0.3	1.7	0.6
CV (%)							6.7	7.2	7.2	5.9	8	24.3	2.7	1.7

¹ Seed Treatment: See 'Seed Treatment' paragraph (under 'Using the Data') for product code

* High yield in plot

Top 1/3 of trial is Bold

Protein and oil are based on dry matter (reported as 13% moisture in previous years)

TABLE 5. 2019 MICHIGAN SOUTHERN ZONE ROUND-UP READY / Early Maturity, (1.7 - 2.7), SOYBEAN VARIETY TRIAL REPORT
YIELD (BU/AC)

2019 AVERAGE

BRAND	VARIETY	Mat Group	Herb	TMT ¹	Phyto Resist.	SCN	2019 18-19 17-19					St. Joseph	Height	Lodging	Protein	Oil
							AVG	AVG	AVG	AVG	AVG					
Agra Solutions	KEY 1025GL	2.5	LLGT27	ENC		MR	72.1	70.1	72.8	73.4	73.4	30	1.3	36.3	21.3	
Credenz	CZ 2040GTLL	2.0	LLGT27	R,A,P,V,I	1a	R	71.8	66.5	71.4	77.5	77.5	27	1.1	35.7	22.6	
Credenz	CZ 2360GTLL	2.3	LLGT27	R,A,P,V,I	1a	R	73.6	*74.0	71.0	75.9	75.9	30	1.1	36.3	22.7	
Credenz	CZ 2550GTLL	2.5	LLGT27	T-Methyl	1a	R	70.8	61.6	75.9	74.9	74.9	28	1.1	36.3	21.9	
Credenz	CZ 2579GTLL	2.5	LLGT27	R,A,P,V,I	1k	R	70.5	66.7	73.0	71.7	71.7	34	1.3	38.3	21.5	
Credenz	CZ 2760GTLL	2.7	LLGT27	R,A,P,V,I	Testing	R	73.4	65.6	70.8	83.8	83.8	31	1.2	35.4	22.7	
DF Seeds	DF 3240 N E3	2.4	ENLIST	DFender N N-H I	1k	R	68.9	64.1	71.1	73.4	73.4	28	1.1	34.6	22.8	
DF Seeds	DF 5227 N R2Y	2.2	RR2Y	DFender N N-H I	1c	R	74.2	67.8	74.3	80.5	80.5	33	1.4	35.1	21.3	
DF Seeds	DF 6269 N LLGT27	2.6	LLGT27	DFender N N-H I	1c	R	72.7	62.7	74.3	81.2	81.2	31	1.3	35.9	21.8	
Dyna-Gro	S23XT169	2.3	RR2X	Eq.V.I.P.,Clar	1c	R	64.7	61.1	63.0	69.9	69.9	28	1.1	35.9	23.1	
Dyna-Gro	S23XT190	2.3	RR2X	Eq.,Clar	1c	R	69.5	65.6	68.9	74.1	74.1	29	1.1	35.7	21.0	
Dyna-Gro	S27EN89	2.7	ENLIST	Eq.,Clar	1k	R	66.8	55.9	71.0	73.4	73.4	29	1.2	34.6	23.0	
FS HISOY®	HS 24X80	2.4	RR2X	ACL + I	1c	R	73.3	69.4	73.0	77.4	77.4	25	1.1	37.3	21.2	
FS HISOY®	HS 26B90	2.6	LLGT27	ACL + I	1c	R	74.5	65.4	71.4	*86.6	*86.6	30	1.2	35.7	22.4	
Genesis	G2840E	2.7	ENLIST	ECLISPEUS	1k	R	69.5	62.3	73.8	72.4	72.4	28	1.2	34.3	23.0	
Golden Harvest	GH2230X	2.2	RR2X	AM-C, Clar + Mer	1c	R3MR14	72.1	63.8	71.2	81.4	81.4	27	1.0	35.1	22.5	
Golden Harvest	GH2537X	2.5	RR2X	AM-C, Clar + Mer	1c	R3MR14	71.0	71.3	70.9	74.5	74.5	32	1.4	36.0	21.4	
Golden Harvest	GH2552X	2.5	RR2X	AM-C, Clar + Mer	1c	MR3	74.4	69.8	76.1	77.4	77.4	32	1.2	37.3	22.0	
Golden Harvest	GH2788X	2.7	RR2X	AM-C, Clar + Mer	1c	MR3MR14	71.7	71.7	76.3	72.9	81.5	26	1.0	36.7	22.1	
LG Seeds	C1838RX	1.8	RR2X	AgriShield Max, I	1c	Yes	70.6	66.7	71.1	74.1	74.1	28	1.0	38.0	21.4	
LG Seeds	C2255RX	2.0	RR2X	AgriShield Max, I	1c	R3,MR14	73.9	74.9	*76.2	79.4	79.4	32	1.2	34.7	21.9	
LG Seeds	LGS2007RX	2.0	RR2X	AgriShield Max, I	3a,1a	Yes	72.8	74.3	70.5	76.0	76.0	28	1.0	37.1	20.9	
LG Seeds	LGS2444RX	2.4	RR2X	AgriShield Max, I	1c	Yes	*76.0	75.7	74.5	80.3	80.3	28	1.2	37.0	21.2	
Local Seed Company	LS1887X	1.8	RR2X	Radius 500	1c		69.5	66.1	66.1	76.2	76.2	29	1.0	38.1	21.8	
Local Seed Company	LS2685X	2.6	RR2X	Radius 500	1c		71.1	69.6	66.1	77.7	77.7	31	1.4	38.0	21.2	
Local Seed Company	ZS1999 GL	1.9	LLGT27	Radius 500	1c	MR3,MR14	71.9	65.6	72.7	77.3	77.3	28	1.1	35.5	22.0	
Local Seed Company	ZS2097 E3	2.0	ENLIST	Radius 500	1c,3a	MR3,MR14	67.7	60.8	68.9	73.5	73.5	30	1.3	38.0	21.7	
Local Seed Company	ZS2496 E3	2.4	ENLIST	Radius 500	1k	R3,MR14	66.5	60.2	68.4	70.9	70.9	27	1.0	36.1	22.2	
M&W Seeds	26T32 GT27	2.6	LLGT27				71.5	66.9	70.2	77.3	77.3	30	1.2	35.7	21.5	
MCIA	2119 GTLL27	2.1	LLGT27	CM		R	68.9	62.3	64.7	79.7	79.7	26	1.0	36.4	22.4	
MCIA	2319 GTLL27	2.3	LLGT27	CM	1k	R	72.5	65.8	69.1	82.6	82.6	31	1.1	34.6	22.1	
Renk Seed	RS248NX	2.4	RR2X	Eclips US	1k	R	73.0	76.1	74.3	83.5	83.5	28	1.2	35.5	22.2	
Renk Seed	RS250NX	2.5	RR2X	Eclips US	1k	R	73.4	70.7	69.1	80.5	80.5	28	1.0	36.3	21.4	
Rupp Seeds	RS 23XT22	2.3	RR2X	AM-C	1c	R3, MR14	66.8	60.6	66.3	73.6	73.6	25	1.1	35.5	21.4	
Rupp Seeds	RS 25XT12	2.5	RR2X	AM-C	1k	R	72.1	65.2	71.4	79.7	79.7	29	1.1	36.7	21.3	
Specialty Hybrids	2083R2X	2.0	RR2X	ACL, G, NemaStrike	1a,3a	R3	70.5	73.6	68.7	78.3	78.3	27	1.0	38.3	21.9	
Specialty Hybrids	2298R2X	2.2	RR2X	ACL, G, NemaStrike	1c	R3	70.6	67.8	66.6	77.4	77.4	29	1.0	36.5	22.6	
Specialty Hybrids	2573R2X	2.5	RR2X	ACL, G, NemaStrike	1c	R3	75.1	76.4	73.7	81.1	81.1	32	1.2	37.1	22.0	
Specialty Hybrids	2583R2X	2.5	RR2X	ACL, G, NemaStrike	1c	R3	70.6	64.2	71.2	76.4	76.4	30	1.1	37.7	21.3	
Wellman Seeds	W 5926X	2.6	RR2X	ENCASE	1c	MR	75.6	74.5	71.2	85.3	85.3	32	1.3	35.6	22.7	
Wellman Seeds	W 6023E	2.3	ENLIST	ENCASE	1c	MR	68.0	63.7	67.4	72.9	72.9	27	1.0	35.4	21.6	
GRAND MEAN							71.3	65.8	70.8	77.4	77.4	29	1.1	36.2	21.9	
Max.							76.0	74.0	76.2	86.6	86.6	34	1.4	38.3	23.1	
Min.							64.7	55.9	63.0	69.9	69.9	25	1.0	34.3	20.9	
LSD (0.05)							4.6	8.3	6.2	5.2	5.2	2.4	0.3	1.8	0.6	
CV (%)							6.1	7.6	6.5	4.0	4.0	8.6	27.3	2.9	1.7	

¹ Seed Treatment: See 'Seed Treatment' paragraph (under 'Using the Data') for product code
* High yield in plot
Top 1/3 of trial is Bold
Protein and oil are based on dry matter (reported as 13% moisture in previous years)
St. Joseph location is irrigated

TABLE 6. 2019 MICHIGAN SOUTHERN ZONE ROUND-UP READY / Late Maturity, (2.8 - 3.5), SOYBEAN VARIETY TRIAL REPORT

BRAND	VARIETY	Mat Group	Herb	TMT ¹	Phyto Resist.	SCN	YIELD (BU/AC)							
							2019 18-19 AVG	17-19 AVG	Ingham	Lenawee	St. Joseph	Height	Lodging	Protein
Agra Solutions	KEY 1031GL	3.1	LLGT27	ENC	1c	MR	76.6	73.5	75.2	81.2	32	1.3	36.9	20.7
Agra Solutions	KEY 1036GL	3.6	LLGT27	ENC		MR	76.2	75.0	76.6	77.0	35	1.7	36.0	21.3
Credenz	CZ 2889GTLL	2.8	LLGT27	R,A,P,V,I	1a	R	71.2	71.1	66.7	75.7	34	1.6	36.0	21.2
Credenz	CZ 3099GTLL	3.0	LLGT27	R,A,P,V,I	1k	R	73.8	74.7	72.6	74.1	34	1.5	37.9	20.7
Credenz	CZ 3100GTLL	3.1	LLGT27	R,A,P,V,I	1c	R	74.6	70.1	74.1	79.5	31	1.2	36.0	20.4
DF Seeds	DF 3280 NE3	2.8	ENLIST	DFender N N-H I	1k	R	69.7	64.5	73.6	71.0	29	1.4	35.6	22.8
DF Seeds	DF 3300 NE3	3.0	ENLIST	DFender N N-H I		R	76.5	74.6	74.6	80.4	32	1.2	36.1	21.6
DF Seeds	DF 6280 N LLGT27	2.8	LLGT27	DFender N N-H I		R	77.6	79.8	71.5	81.6	31	1.3	37.5	22.2
DF Seeds	DF 7290 N X	2.9	RR2X	DFender N N-H I	1c	R	75.6	75.8	70.8	80.3	31	1.2	37.1	20.9
Dyna-Gro	S28XT58	2.8	RR2X	Eq,Clar	1c	R	81.8	79.9	76.0	85.4	34	1.0	38.4	20.6
Dyna-Gro	S31XT59	3.1	RR2X	Eq,Clar		R	78.4	75.9	77.7	81.9	36	1.6	36.9	21.2
Dyna-Gro	S32EN60	3.2	ENLIST	Eq,Clar	1k	R	69.1	65.0	71.6	70.8	34	1.4	36.4	20.8
FS HISOY®	HS 28B90	2.8	LLGT27	ACL + I		R	75.3	71.7	70.4	83.9	31	1.2	33.6	21.7
FS HISOY®	HS 28E90	2.8	ENLIST	ACL + I	1k	R	72.6	72.3	72.0	73.5	30	1.4	36.8	21.3
FS HISOY®	HS 28X70	2.8	RR2X	ACL + I	1c	R	77.1	76.0	76.6	78.6	34	1.3	38.1	20.8
FS HISOY®	HS 31E90	3.1	ENLIST	ACL + I		R	75.8	75.7	75.4	76.2	31	1.3	35.1	21.2
FS HISOY®	HS 32X90	3.2	RR2X	ACL + I		R	79.5	77.8	79.1	81.7	34	1.3	37.2	19.7
FS HISOY®	HS 33X80	3.3	RR2X	ACL + I	1c	R	78.2	78.3	79.5	76.9	32	1.2	38.9	19.8
Golden Harvest	GH3088X	3.0	RR2X	AM-C, Clar + Mer	1c	R3,MR14	77.6	76.0	76.3	77.9	32	1.1	35.2	22.0
LG Seeds	C2888RX	2.8	RR2X	AgriShield Max, I	1k	R	81.9	79.1	81.6	79.2	35	1.3	39.0	20.4
LG Seeds	LGS3060RX	3.0	RR2X	AgriShield Max, I		R	80.9	82.3	80.1	80.2	34	1.3	37.0	20.4
Local Seed Company	ZS3296 GL	3.2	LLGT27	Radius 500	1c	R3,MR14	76.1	71.8	76.2	80.2	32	1.5	37.6	20.6
Local Seed Company	ZS3399 E3	3.3	ENLIST	Radius 500	1c	R3,MR14	75.6	70.2	75.8	80.8	33	1.3	35.4	22.0
Local Seed Company	ZS3496 GL	3.4	LLGT27	Radius 500		R3,MR14	82.2	84.4	76.7	85.4	35	1.3	36.6	20.9
M&W Seeds	28E65 E3	2.8	ENLIST				72.0	76.9	67.1	ns	31	1.4	35.0	22.4
M&W Seeds	28T76 GT27	2.8	LLGT27				74.8	69.8	76.6	87.9	32	1.2	36.1	21.9
M&W Seeds	29E85 E3	2.9	ENLIST				74.8	72.1	72.1	80.1	31	1.2	34.8	21.8
MCIA	2819 GTLL27	2.9	LLGT27	CM		R	77.9	76.5	73.6	83.7	32	1.3	35.5	21.8
Renk Seed	RS280NX	2.8	RR2X	Eclips US	1k	R	82.7	79.1	80.5	88.4	31	1.5	35.4	21.2
Rupp Seeds	RS 28BG90	2.8	LLGT27	AM-C		R3,MR14	78.0	76.0	77.7	81.0	31	1.6	35.8	22.2
Rupp Seeds	RS 28XT37	2.8	RR2X	AM-C	1c	R3,MR14	79.0	78.2	79.0	79.2	33	1.2	37.3	21.0
Rupp Seeds	RS 31TEL41	3.1	ENLIST	AM-C		R	74.7	74.2	73.1	76.8	31	1.3	35.3	21.8
Rupp Seeds	RS 31XT40	3.1	RR2X	AM-C	1c	MR	78.8	75.2	79.7	80.3	32	1.3	37.0	20.4
Specialty Hybrids	2894R2X	2.8	RR2X	ACL, G, NemaStrike	1c	R3	79.6	77.3	79.9	81.6	34	1.2	36.4	20.2
Specialty Hybrids	2983R2X	2.9	RR2X	ACL, G, NemaStrike	1c	R3	80.0	76.8	81.4	79.7	36	1.5	36.7	19.9
Specialty Hybrids	3192R2X	3.1	RR2X	ACL, G, NemaStrike	1a,seg3a	R1/R3	75.9	73.0	79.5	75.2	33	1.6	36.1	20.5
Wellman Seeds	W 5033X	3.3	RR2X	ENCASE		MR	78.6	77.1	79.3	79.3	34	1.5	38.1	19.6
Wellman Seeds	W 5928X	2.8	RR2X	ENCASE	1c,3a	MR	74.8	71.8	75.8	76.8	34	1.6	39.0	21.2
Wellman Seeds	W 5932X	3.2	RR2X	ENCASE	1c	MR	76.1	73.5	79.7	70.8	37	1.5	39.4	19.9
Wellman Seeds	W 6030E	3.0	ENLIST	ENCASE		MR	75.5	74.1	71.1	81.4	31	1.3	37.4	21.0
Wellman Seeds	W 6032E	3.2	ENLIST	ENCASE	1k	MR	69.5	65.9	73.6	69.1	34	1.3	35.4	21.0
Wellman Seeds	W 6034E	3.4	ENLIST	ENCASE	1c	MR	74.6	68.7	75.0	80.2	32	1.3	34.4	21.8
Wellman Seeds	W 6928E	2.8	ENLIST	ENCASE	1k	MR	72.3	68.7	76.0	72.1	30	1.3	35.7	22.8
GRAND MEAN							76.4	75.0	75.5	79.0	33	1.3	36.5	21.1
Max.							82.7	84.9	81.6	88.4	37	1.7	39.4	22.8
Min.							69.1	64.5	66.7	69.1	29	1.0	33.6	19.6
LSD (0.05)							4.7	7.3	8.1	6.6	2.1	0.4	2.2	0.6
CV (%)							5.8	5.9	6.4	5.0	6.7	29.4	3.5	1.8

¹ Seed Treatment: See 'Seed Treatment' paragraph (under 'Using the Data') for product code

* High yield in plot

Top 1/3 of trial is Bold

Protein and oil are based on dry matter (reported as 13% moisture in previous years)
St. Joseph location is irrigated

TABLE 7. 2019 MICHIGAN LIBERTY LINK CENTRAL SOYBEAN TRIAL REPORT

BRAND	VARIETY	Maturity Group	Herb	TMT ¹	Phyto RES	SCN	YIELD (BU/AC)					
							2019 18-19 AVG	17-19 AVG	Allegan	Gratiot	Saginaw	Height
AG Armour Seeds	AA 1520 E3	1.5	ENLIST	Ag Armour	R3,MR14		56.7	52.7	62.0	55.4	25	1.0
AG Armour Seeds	AA 2019 LL/GT27	1.9	LLGT27	Ag Armour	R		62.1	62.6	67.7	55.9	28	1.0
AG Armour Seeds	AA 2020 E3	2.0	ENLIST	Ag Armour	1c,3a	R3,MR14	61.9	61.3	65.5	59.0	29	1.0
AG Armour Seeds	AA 2320 E3	2.3	ENLIST	Ag Armour			59.5	57.8	62.1	58.5	28	1.0
DF Seeds	DF 9171 N LL	1.7	LL	DFender N N-HI	R		61.2	62.2	61.5	59.9	28	1.0
DF Seeds	DF 9232 N LL	2.3	LL	DFender N N-HI	1k	R	60.7	59.2	63.8	59.2	29	1.0
Dyna-Gro	S21GL40	2.1	LLGT27	Eq,Clar	R		59.4	57.1	64.7	56.4	27	1.0
Dyna-Gro	S24LL98	2.4	LL	Eq,Clar	1k	R	63.2	67.5	67.9	59.8	30	1.0
Dyna-Gro	S26GL30	2.6	LLGT27	Eq,Clar	R		*65.0	*67.5	*68.3	59.3	31	1.0
MCIA	2212LL	2.2	LL	CM			60.4	61.6	63.2	56.4	32	1.0
MCIA	2314LL	2.3	LL	CM			63.6	62.4	66.8	*61.7	31	1.0
GRAND MEAN							60.9	60.8	64.6	58.3	29	1.0
Max.							65.0	67.5	68.3	61.7	32	1.0
Min.							56.7	52.7	61.5	55.4	25	1.0
LSD (0.05)							4.6	7.5	7.3	5.1	2.9	
CV (%)							6.6	7.1	5.4	5.0	8	

¹ Seed Treatment: See 'Seed Treatment' paragraph (under 'Using the Data') for product code

* High yield in plot

Top 1/3 of trial is Bold

There was no lodging in any location for this trial

Protein and oil are based on dry matter

TABLE 8. 2019 MICHIGAN LIBERTY LINK SOUTH SOYBEAN TRIAL REPORT

BRAND	VARIETY	Maturity Group	Herb	TMT ¹	Phyto RES	SCN	YIELD (BU/AC)							
							2019 18-19 AVG	2019 17-19 AVG	Ingham	Lenawee	St. Joseph	Height	Lodging	Protein
AG Armour Seeds	AA 2820 E3	2.8	ENLIST	Ag Armour	1k	R3,MR14	60.4	56.6	62.0	62.6	34	1.9	34.8	22.9
AG Armour Seeds	AA 2918 LL	2.9	LL	Ag Armour		R	67.0	*71.5	61.0	68.5	37	1.6	37	21.4
DF Seeds	DF 9232 N LL	2.3	LL	DFender N N-H I	1k	R	67.8	64.0	61.3	78.1	36	1.8	37.9	20.8
DF Seeds	DF 9251 N LL	2.5	LL	DFender N N-H I	1k	R	65.2	67.0	63.5	70.1	36	1.9	38	20.8
Dyna-Gro	S24LL98	2.4	LL	Eq,Clar	1k	R	65.5	55.4	68.8	72.2	34	2.0	37.5	22.2
Dyna-Gro	S26GL30	2.6	LLGT27	Eq,Clar		R	67.4	58.3	69.2	74.8	36	2.3	37.9	22.8
Dyna-Gro	S28GL80	2.8	LLGT27	Eq,Clar		R	*70.5	62.9	*69.4	79.3	37	1.6	36.9	22.6
MC/A	2314LL		LL	CM			68.1	55.6	66.6	*82.0	35	1.1	36.1	22.3
GRAND MEAN														
Max.							65.9	60.8	65.2	73.4	36	1.8	37	22
Min.							70.5	71.5	69.4	82.0	37	2.3	38	23
LSD (0.05)							60.4	55.4	61.0	62.6	34	1.1	35	21
CV (%)							13.0	10.3	9.2	11.7	4	0.8	1.0	0.4
							9.6	9.5	7.9	8.5	8	39.6	1.5	1.0

¹ Seed Treatment: See 'Seed Treatment' paragraph (under 'Using the Data') for product code

* High yield in plot

Top 1/3 of trial is Bold

Protein and oil are based on dry matter (reported as 13% moisture in previous years)
St. Joseph location is irrigated

INDEX FOR 2019 SOYBEAN VARIETY PERFORMANCE TRIALS

There were **194** varieties from **21** private seed companies entered in 8 county test sites in the 2019 Soybean Variety Performance Trials. **The first number within parentheses refer to the table in which the variety appears.** Company names used in association with variety numbers refer to the brand, and the numbers are the variety designation. **The SCN source of resistancem if any, is listed in a second parentheses.** PI88788 is abbreviated as P8.

TABLE 1
Central
Conventional

Allegan
Gratiot
Saginaw

TABLE 2
Southern
Conventional

Gratiot
Lenawee
St. Joseph

TABLE 3
Central Early
Roundup Ready

Allegan
Gratiot
Saginaw

TABLE 4
Central Late
Roundup Ready

Allegan
Gratiot
Saginaw

TABLE 5
Southern Early
Roundup Ready

Gratiot
Lenawee
St. Joseph

TABLE 6
Southern Late
Roundup Ready

Gratiot
Lenawee
St. Joseph

TABLE 7
Central
Liberty Link

Allegan
Gratiot
Saginaw

TABLE 8
Southern
Liberty Link

Gratiot
Lenawee
St. Joseph

Aq Armour

AA 1520 E3 (7) (P8)
AA 1914 N (1) (P8)
AA 2017 GT (3)
AA 2019 LL/GT27 (7) (P8)
AA 2020 E3 (7) (P8)
AA 2114 N (1) (P8)
AA 2214 N (1)
AA 2320 E3 (7)
AA 2820 E3 (8) (P8)
AA 2918 LL (8)

Agra Solutions LLC

AGRA SOLUTIONS KEY 1025GL (5) (P8)
AGRA SOLUTIONS KEY 1031GL (6) (P8)
AGRA SOLUTIONS KEY 1036GL (6) (P8)

Bayer CropScience

Credenz CZ 1549GTLL (3) (P8)
Credenz CZ 1660GTLL (3) (P8)
Credenz CZ 1850GTLL (3) (P8)
Credenz CZ 1859GTLL (3) (P8)
Credenz CZ 2040GTLL (3,5) (P8)
Credenz CZ 2360GTLL (4,5) (P8)
Credenz CZ 2550GTLL (4,5) (P8)
Credenz CZ 2579GTLL (4,5) (P8)
Credenz CZ 2760GTLL (4,5) (P8)
Credenz CZ 2889GTLL (4,6) (P8)
Credenz CZ 3099GTLL (4,6) (P8)
Credenz CZ 3100GTLL (6) (P8)

Citizens LLC

NATURE'S GENETICS 1926 (1,2)
NATURE'S GENETICS 2.4 (1,2)

D.F. Seeds, Inc.

DF Seeds DF 155 F (1,2)
DF Seeds DF 187 N (1) (P8)
DF Seeds DF 210 N (1) (Peking)
DF Seeds DF 227 N (1) (P8)

D.F. Seeds, Inc. (continued)

DF Seeds DF 260 N (1,2) (P8)
DF Seeds DF 278 N (2) (P8)
DF Seeds DF 3130 N E3 (3) (P8)
DF Seeds DF 317 N (2) (P8)
DF Seeds DF 3180 N E3 (3) (P8)
DF Seeds DF 3190 N E3 (3) (P8)
DF Seeds DF 3200 N E3 (3) (P8)
DF Seeds DF 3240 N E3 (4,5) (P8)
DF Seeds DF 3280 N E3 (6) (P8)
DF Seeds DF 3300 N E3 (6) (P8)
DF Seeds DF 5100 N R2Y (3) (P8)
DF Seeds DF 5173 N R2Y (3) (P8)
DF Seeds DF 5227 N R2Y (3,5) (P8)
DF Seeds DF 6150 N LLGT27 (3) (P8)
DF Seeds DF 6189 N LLGT27 (3) (P8)
DF Seeds DF 6210 N LLGT27 (3) (P8)
DF Seeds DF 6219 N LLGT27 (3) (P8)
DF Seeds DF 6269 N LLGT27 (4,5) (P8)
DF Seeds DF 6280 N LLGT27 (6) (P8)
DF Seeds DF 7090 N X (3) (P8)
DF Seeds DF 7220 N X (3) (Peking)
DF Seeds DF 7290 N X (6) (P8)
DF Seeds DF 9171 N LL (7) (P8)
DF Seeds DF 9232 N LL (7,8) (P8)
DF Seeds DF 9251 N LL (8) (P8)

Nutrien Ag Solutions

Dyna-Gro S13XT89 (3) (P8)
Dyna-Gro S14EN90 (3) (P8)
Dyna-Gro S17EN80 (3) (P8)
Dyna-Gro S17XT29 (3) (P8)
Dyna-Gro S18XT38 (3) (P8)
Dyna-Gro S19EN59 (3) (P8)
Dyna-Gro S19XT30 (3) (P8)
Dyna-Gro S21EN70 (3) (P8)
Dyna-Gro S21GL40 (7) (P8)
Dyna-Gro S21XT49 (3) (P8)
Dyna-Gro S2207N (1) (P8)
Dyna-Gro S23XT69 (4,5) (P8)

Nutrien Ag Solutions (continued)

Dyna-Gro S23XT90 (4,5) (P8)
Dyna-Gro S2409N (1,2) (P8)
Dyna-Gro S24LL98 (7,8) (P8)
Dyna-Gro S26GL30 (7,8) (P8)
Dyna-Gro S27EN89 (4,5) (P8)
Dyna-Gro S28GL80 (8) (P8)
Dyna-Gro S28XT58 (4,6) (P8)
Dyna-Gro S2908N (2) (P8)
Dyna-Gro S31XT59 (6) (P8)
Dyna-Gro S32EN60 (6) (P8)

Syngenta (Golden Harvest)

Golden Harvest GH1915X (3) (P8)
Golden Harvest GH2041X (3) (P8)
Golden Harvest GH2230X (3,5) (P8)
Golden Harvest GH2537X (4,5) (P8)
Golden Harvest GH2552X (4,5) (P8)
Golden Harvest GH2788X (4,5) (P8)
Golden Harvest GH3088X (6) (P8)

Hensall Co-op

HDC Adare (1)
HDC Blake (1)

Legacy Seeds, Inc.

Legacy LS-1039N (3) (Peking)
Legacy LS-1439N (3) (P8)
Legacy LS-1639N (3) (P8)
Legacy LS-1810N (3) (P8)
Legacy LS-1838N (3) (P8)
Legacy LS-1820N (3) (P8)
Legacy LS-2139N (3) (P8)
Legacy LS-1510N (3) (P8)

LG Seeds

LG Seeds C1838RX (3,5) (P8)
 LG Seeds C2300 (1,2) (P8)
 LG Seeds C2888RX (4,6) (P8)
 LG Seeds LGS1635RX (4) (P8)
 LG Seeds LGS2007RX (3,5) (P8)
 LG Seeds LGS2010 (1,2) (P8)
 LG Seeds C2255R2 (4,5) (P8)
 LG Seeds LGS2444RX (4,5) (P8)
 LG Seeds LGS2765 (1,2) (P8)
 LG Seeds LGS3060RX (6) (P8)

Local Seed Company

Local LS1887X (3,5)
 Local LS2685X (4,5)
 Local LSX1901GL (3,5)
 Local LSX2001E (3,5)
 Local LSX2301E (4,5)
 Local LSX2801GL (4)
 Local LSX3001E (4)
 Local LSX3101GL (6)
 Local LSX3401E (6)
 Local LSX3402GL (6)

M&W Seeds

M&W 19R32 GT27 (3)
 M&W 20E51 E3 (3)
 M&W 21E26 E3 (3)
 M&W 23E52 E3 (4)
 M&W 23T88 GT27 (4)
 M&W 26T32 GT27 (4,5)
 M&W 28E65 E3 (6)
 M&W 28T76 GT27 (6)
 M&W 29E85 E3 (6)

MI Crop Improvement Assoc.

MCIA 2119 GTLL27 (3,5) (P8)
 MCIA 2212LL (7)
 MCIA 2314LL (7,8)
 MCIA 2319 GTLL27 (4,5) (P8)
 MCIA 2819 GTLL27 (6) (P8)

Michigan State University

MSU E12076T (1,2) (P8)
 MSU E12076T-03 (1,2) (P8)
 MSU E13100-03 (1,2) (P8)
 MSU E13268 (1,2)
 MSU E14077 (1,2) (P8)
 MSU E15339 (1,2) (P8)
 MSU E15345 (1,2) (P8)
 MSU E15347 (1,2) (P8)
 MSU E15351 (1,2) (P8)
 MSU E15901 (1,2)
 MSU E16189 (1,2) (P8)
 MSU E16266 (1,2) (P8)
 MSU E16380 (1,2) (P8)
 MSU E16387 (1,2) (P8)
 MSU E16410 (1,2) (P8)
 MSU E17004 (1,2)
 MSU E17054 (1,2)
 MSU E17062 (1,2)

Michigan State University (continued)

MSU E17069 (1,2)
 MSU E17167 (1,2)
 MSU E17184 (1,2)
 MSU E17203 (1,2)
 MSU E17205 (1,2)
 MSU E17227 (1,2)
 MSU E17269 (1,2)
 MSU E17274 (1,2)
 MSU E17275 (1,2)
 MSU E17283 (1,2)
 MSU E17506T (1,2)
 MSU E17508 (1,2)
 MSU E17520 (1,2)
 MSU E17545 (1,2)
 MSU E17550 (1,2)
 MSU E17801-08 (1,2)
 MSU E17808-01 (1,2)

Renk Seed

Renk RS149NX (3) (P8)
 Renk RS153NR2 (3)
 Renk RS160NGL (3) (P8)
 Renk RS170NX (3) (P8)
 Renk RS180NE (3) (P8)
 Renk RS200NX (3) (P8)
 Renk RS210NE (3) (P8)
 Renk RS213NR2 (3) (P8)
 Renk RS219NX (3) (P8)
 Renk RS220NGL (3) (P8)
 Renk RS248NX (4,5) (P8)
 Renk RS250NX (5) (P8)
 Renk RS279NE (5) (P8)
 Renk RS280NX (6)(P8)

Rupp Seeds, Inc.

Rupp RS 18XT17 (3) (P8)
 Rupp RS 21XT18 (3) (P8)
 Rupp RS 23BG30 (4) (P8)
 Rupp RS 23EL91 (4) (P8)
 Rupp RS 23XT22 (4,5) (P8)
 Rupp RS 25XT12 (4,5) (P8)
 Rupp RS 28BG90 (6) (P8)
 Rupp RS 28XT37 (6) (P8)
 Rupp RS 31EL41 (6) (P8)
 Rupp RS 31XT40 (6) (P8)

Sevita International

Sevita Candor (1)

Specialty Hybrids

Specialty 2083R2X (3,5) (P8)
 Specialty 2293R2X (3,5) (P8)
 Specialty 2573R2X (5) (P8)
 Specialty 2583R2X (3,6) (P8)
 Specialty 2894R2X (4,6) (P8)
 Specialty 2983R2X (4,6) (P8)
 Specialty 3192R2X (6) (Peking)

Wellman Seeds, Inc.

Wellman W 296 (2) (P8)
 Wellman W 5033X (6) (P8)
 Wellman W 5926X (5) (P8)
 Wellman W 5928X (6) (P8)
 Wellman W 5932X (6) (P8)
 Wellman W 6023E (5) (P8)
 Wellman W 6030E (6) (P8)
 Wellman W 6032E (6) (P8)
 Wellman W 6034E (6) (P8)
 Wellman W 6928E (6) (P8)

Zeeland Farm Services, Inc.

ZFS 1326 (1,2)
 ZFS 1629 N (2)
 ZFS 1716 (1) (P8)
 ZFS 1719 (1) (P8)
 ZFS 1821 (1,2) (P8)
 ZFS 1925HO (1,2)
 ZFS 1930HO (1,2)
 ZFS 2027HO (1,2)
 ZFS e12H902 (1)

Carry over soybean seed: dead, alive or somewhere between?

By: Mark Seamon, Michigan Soybean Promotion Committee Research Coordinator

One of the tales from the 2019 growing season is that some seed did not get planted as planned. Many farms have carried soybean seed over with intentions to plant it in 2020. A few bags or partial boxes of seed have been planted a year after they were purchased with good results, but the quantity of seed, and its value, carried over from 2019 suggests that we manage it more carefully.

The first step in managing this carryover seed is to figure out how much of it is still viable. Not only is it important to determine if it is still live seed, but if it has vigor to make a successful productive soybean plant. While we all hope for ideal conditions at planting, it more likely that the seeds that are put in the ground will need to survive through some challenges. Jim Palmer, Michigan Crop Improvement Association, suggests submitting seed samples for both warm and cold germination tests. "This will gauge seed performance in less than ideal conditions," Jim shared. These two tests require a two-pound seed sample and about two weeks to analyze.

When sampling carryover seed be sure to take a representative sample. This means taking seed from multiple bags or reaching deeply into seed boxes or tote bags. Samples can be taken anytime, as the biggest changes in seed quality have already happened between when it was harvested, maybe as long as 16 months ago, and now. Keep in mind that this seed was harvested in the fall of 2018, which included some challenging conditions leading to seed quality issues. The quality of seed is at its highest point when it dries down naturally in the pod. After that time it does not improve - the quality only decreases.

A few suggestions for getting the most of carryover soybean seed are:

- Know both warm and cold germination rates
- Increase planting rate to adjust for decreased germination rate and/or vigor
- Plant into good conditions (warm soil, minimum residue)
- Handle as little as possible (to avoid seed damage)

Some growers have used a home germination test in wet paper towels to get an idea of seed viability. This should be used at a minimum, as it may only give you best-case scenario results since the seed is germinated indoors in warm conditions.

The fact that the seed is treated is not a good indicator of whether it will perform well a year later than it was intended to be used. Some seed-applied pesticides can negatively affect seed quality after a year of storage while others may improve seed performance. Conversely, untreated seed cannot be assumed to be high quality after being stored for extended periods.

Managing seed quality before planting will help to avoid problems such as a replant situation that would take a couple of weeks after planting to diagnose. There will be enough challenges in profitably producing crops in 2020, so let's take proactive steps to minimize the negative and maximize the positive.

Here is the contact information for the Michigan Crop Improvement Association:

Phone 517 332-3546, info@michcrop.com, www.michcrop.com

To mail: MCIA Seed Lab, P.O.Box 21008, Lansing, MI 48909

To ship: MCIA Seed Lab, 2901 West Jolly Road, Okemos, MI 48864



Michigan Soybean Promotion Committee
PO Box 287
Frankenmuth, Michigan 48734



**Michigan Soybean
Promotion Committee**
The Soybean Checkoff
michigansoybean.org

Fellow Soybean Producers,

The selection of the best soybean varieties for your farm is likely to be the most critical decision to impact your soybean yields. To inform your decision, this report contains the most complete source of unbiased yield comparisons from across the state.

The investment of checkoff funds in this publication is an example of our mission to “Manage checkoff resources to increase return on investment for Michigan soybean farmers while enhancing sustainable soybean production”. We feel confident in the value of this resource and hope that it proves as a valuable resource for your farm.

We wish you a safe and profitable 2020 season.

Sincerely,

Michigan Soybean Promotion Committee Directors

District #1 Sarah Peterson, Niles
District #3 Laurie Isley, Palmyra
District #5 Mike Sahr, Saginaw
District #7 Steve Koeman, Hamilton

District #2 Pete Crawford, Dansville
District #4 Dennis Gardner, Croswell
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