

2015 Michigan Organic Soybean Variety Trials

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This report provides information on performance of non-GMO soybean varieties grown under certified organic management in 2015. This research is funded under the North Central Region Sustainable Agriculture Research and Education (NCR SARE) Program and The Ceres Trust.

Testing Procedures

Four trial locations are reported in this publication. A total of 48 soybean varieties were entered by seven seed companies and three universities. The cooperators, planting dates, harvest dates and other site details for each location are listed below. Seed was planted in 2-row plots, 26 feet long with 30-inch row spacing at a depth of 1.5 inches. The planting rate was 190,000 seeds/acre. At each location, varieties were replicated four times in a lattice design. The plots were trimmed to a length of 20 feet and both rows were harvested. Experimental design, data management and data analysis were conducted with AGROBASE Generation II software (Agronomix Software, Inc., Winnipeg, Canada).

Using the data

Yield: Expressed as bushels per acre (Bu/A) at 13 percent moisture and is reported as single and across site means for 2015.

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 heights taken at the Tuscola, Isabella, Lapeer, and Kalamazoo sites.

Protein and oil content: Protein and oil content of the seed was determined using near-infrared reflectance and is expressed on a 13 percent moisture basis.

Test site information

Lapeer County

Nearest city: Columbiaville Cooperator: Charlie Brockriede
Soil type: Brady sandy loam Previous crop: Corn
Tillage: Spring moldboard plow, field cultivate
Planting Date: June 5 Harvest Date: October 26

Tuscola County

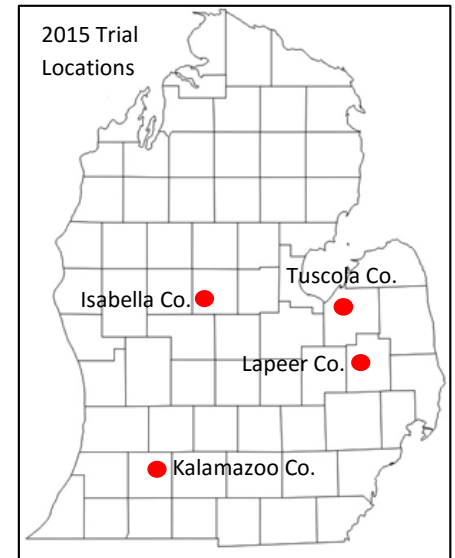
Nearest city: Unionville Cooperator: Dave Sting
Soil type: Tappan loam Previous crop: Corn
Tillage: Fall plowed, rye cover, spring field cultivate
Planting Date: May 22 Harvest Date: October 22

Kalamazoo County

Nearest city: Hickory Corners Cooperator: W.K. Kellogg Bio Station
Soil type: Sandy loam Previous crop: Clover
Tillage: Chisel plow, field cultivate
Planting Date: May 26 Harvest Date: October 19

Isabella County

Nearest city: Mt. Pleasant Cooperator: Tom Nelson
Soil type: Guelph clay loam Previous crop: Corn
Tillage: Fall chisel plow, spring disk
Planting Date: May 29 Harvest Date: October 23



Farmers, breeders and project team review soybean varieties.



Harvesting soybeans at Isabella site, October 23.

Growing conditions/comments

Lapeer: Good season long growing conditions

Tuscola: Good to wet growing conditions. High winds with hail affected this site.

Kalamazoo: Good growing conditions except for 3-4 weeks dry weather in August.

Isabella: Good growing conditions except for several dry weeks at the end of July.

Selecting a variety

Least Significant Difference (LSD) 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 percent 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 Coefficient of Variation (CV) is indicative of the trial precision. Lower CV 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.

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.



Isabella County Organic Soybean Variety trial.



Maturing soybeans, Tuscola County.

Seed sources

DKB Farm & Services

Don Brockriede
4945 Marathon Road
Columbiaville, MI 48421
810-688-3008

D.F. Seeds Inc.

Chris Varner/John Diehl
905 S. Jackson Road P.O. Box 159
Dansville, MI 48819
517-623-6161

Organic Bean & Grain

Mark Vollmar
1795 W. Akron Road
Caro, MI 48723
989-673-6402

SunOpta

Emily Shettler
10407 Scribner Rd
Bancroft MI 48414
989-721-7857

MSU

DeChen Wang
A384-E Plant and Soil Sciences Bldg.
1066 Bogue Street
East Lansing, MI 48824-1325
517-355-0271 Ext. 188

Schillinger Genetics, Inc.

Corey Nikkel
4401 Westown Parkway, Suite 225
West Des Moines, IA 50266
515-225-6164

Albert Lea Seed

Mathew Leavitt
1414 W. Main, PO Box 127
Albert Lea, MN 56007
800-352-5247

Blue River Hybrids

2326 230th St.
Ames IA, 50014
(517) 402-3395

University of Minnesota/ MN Crop Improvement

Roger Wippler
1900 Hendon Ave.
St. Paul, MN 55108
612-625-7766



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2015 Michigan Organic Soybean Variety Trial Results

Source	Variety	Group	Hilum Color	Bushels per Acre					% Protein*	% Oil*	Height Inches*	Maturity DAP*	Seeds/ Pound*
				Tuscola	Isabella	Lapeer	Kalamazoo	Average					
Albert Lea	2018N	2.0	Yellow	67.4	57.0	61.7	51.6	59.4	34.8	18.5	29.1	127	2463
Albert Lea	O.1518	1.5	Black	55.3	42.8	32.5	56.3	46.7	37.2	17.7	27.9	120	2807
Albert Lea	O.1706N	1.7	Black	50.0	47.6	47.5	45.6	47.7	33.6	16.7	27.2	118	2906
Albert Lea	O.2265	2.2	Black	65.8	53.6	56.8	54.0	57.5	36.8	18.1	31.7	127	2777
Albert Lea	O.2299N	2.2	Yellow	56.5	58.8	55.7	50.1	55.3	36.4	18.2	30.9	128	2569
Blue River Hybrids	17C2	1.7	Dark	59.2	46.3	42.2	47.3	48.7	36.2	18.1	29.5	119	3151
Blue River Hybrids	20C6	2.0	Yellow	57.8	49.2	46.7	59.1	53.2	36.9	17.8	29.3	120	2935
Blue River Hybrids	21F3	2.6	Yellow	66.1	44.7	33.1	49.4	48.3	36.1	15.4	30.8	128	2099
Blue River Hybrids	22DC6	2.2	Dark	74.6	55.0	56.5	58.4	61.1	36.6	17.4	31.2	130	2633
Blue River Hybrids	27A7	2.7	Dark	67.7	50.4	45.0	50.5	53.4	38.4	17.8	31.8	132	2064
Blue River Hybrids	27C5	2.7	Yellow	67.0	62.6	68.9	55.3	63.5	36.6	17.9	30.3	132	2375
Blue River Hybrids	2A12	2.1	Dark	57.5	45.9	35.0	53.5	48.0	37.1	18.0	30.5	121	2756
DF Seeds	DF 155 F	2.5	Clear	67.3	42.5	44.0	53.4	51.8	38.2	17.8	31.6	130	2101
DF Seeds	DF 161 N/STS	1.6	Black	60.6	45.8	49.5	54.3	52.5	36.4	18.1	30.3	121	3060
DF Seeds	DF 242 N/S	2.4	Brown	66.4	51.9	46.0	51.8	54.0	36.9	18.0	30.3	127	2930
DF Seeds	DF 252 N/S	2.5	Clear	61.1	61.3	67.3	58.7	62.1	36.1	17.8	32.7	132	2885
DKB FARMS	Vinton 81	1.9	Clear	50.0	38.7	32.5	40.9	40.5	40.4	16.8	34.3	122	1906
Minn. Crop Improv	M04-220008	1.7	Yellow	59.3	45.7	39.7	45.0	47.4	37.3	17.9	28.9	120	2328
Minn. Crop Improv	M04-295008	1.5	Yellow	55.3	42.3	41.8	50.9	47.5	38.6	17.6	30.3	121	1912
Minn. Crop Improv	M06-288155	1.6	Yellow	61.5	52.3	49.5	44.7	52.0	37.0	17.3	29.9	119	2676
Minn. Crop Improv	M06-288190	1.7	buff	59.5	44.9	44.6	48.2	49.3	37.0	17.7	26.6	119	2466
Minn. Crop Improv	MN1701CN	1.7	Yellow	50.6	49.4	48.8	48.8	49.4	37.1	17.8	30.8	120	2887
Minn. Crop Improv	MN1806CN**	1.8	Yellow	55.7	50.1	56.4	47.6	52.4	37.1	18.3	31.0	122	2540
MSU	E05181-T	2.0	Yellow	61.5	48.3	50.2	48.7	52.2	38.0	17.9	27.8	122	2076
MSU	E07051	2.2	Dark Brown	65.0	59.6	57.1	51.3	58.3	36.8	18.2	29.3	128	2178
MSU	E07130-T	2.3	Yellow	55.6	38.5	38.3	43.9	44.1	40.9	16.8	32.9	127	1784
MSU	E07158-T	2.3	Yellow	56.4	46.5	42.9	45.6	47.8	41.3	16.9	32.7	127	1673
MSU	E10151	2.2	Black	65.3	53.9	45.4	59.1	55.9	34.7	18.5	30.2	127	2558
MSU	E10174	2.9	Yellow	63.5	58.4	64.4	51.8	59.5	35.4	18.3	34.7	133	2109
MSU	E11128T	2.6	Yellow	56.4	58.8	52.1	49.3	54.2	39.8	16.9	30.8	129	2034
MSU	E11399	2.5	Black	68.1	46.3	53.2	52.9	55.1	35.2	18.3	29.6	128	2534
MSU	E11431	2.2	Black	64.2	45.9	38.0	51.7	49.9	35.3	18.2	31.6	127	2551
MSU	E12007	2.8	Dark Brown	59.0	53.2	39.9	58.8	52.7	36.4	18.3	32.4	131	2797
MSU	E12397	2.2	Light Brown	66.4	49.3	37.5	54.1	51.8	33.9	16.5	29.3	125	2458
MSU	E13021T	2.2	Yellow	56.7	59.1	47.8	48.7	53.0	36.2	18.1	29.3	129	2412
MSU	E13036T	2.6	Yellow	57.3	51.7	49.5	44.0	50.6	37.3	17.4	29.8	129	2057
MSU	E13364	2.7	Dark Brown	53.5	45.5	39.1	49.3	46.9	36.8	18.2	28.8	129	2602
MSU	E13367	2.6	Brown	59.9	46.9	48.7	50.5	51.5	35.5	17.9	26.9	127	2595
MSU	E13369	2.3	Brown	56.8	52.3	40.0	46.6	48.9	36.2	18.0	30.0	124	2849
Organic Bean & Grain	DH410	1.6	Clear	62.3	45.7	50.6	40.7	49.8	39.8	17.8	29.7	120	2344
Organic Bean & Grain	DH530	1.6	Clear	60.3	26.4	42.0	41.7	42.6	35.8	18.8	27.0	117	2578
Organic Bean & Grain	S2020	2.0	Clear	60.0	40.7	32.8	49.7	45.8	36.7	18.2	28.3	118	2397
Schillinger Genetics	e1665	1.6	Yellow	56.5	53.6	49.4	46.7	51.5	38.2	17.6	27.8	120	2518
Schillinger Genetics	e2062	2.0	Yellow	56.4	50.6	47.3	46.9	50.3	38.6	18.0	27.1	126	2296
Schillinger Genetics	e2162	2.1	Yellow	55.6	49.6	46.8	52.8	51.2	38.7	17.2	27.9	124	2481
Schillinger Genetics	e2282	2.2	Buff	59.0	65.5	58.3	50.1	58.2	38.3	17.5	30.4	128	2446
SunOpta	S14L9	1.4	ImpYellow	65.9	42.3	26.8	53.1	47.0	38.2	17.3	25.1	118	2273
SunOpta	S20-G7	2.0	Yellow	63.1	36.5	36.7	44.0	45.1	38.4	17.7	30.5	124	2060
GRAND MEAN				60.3	49.2	46.6	50.1	51.6					
Max. Mean				74.6	65.4	68.9	59.1	63.5					
Min. Mean				50.0	26.4	26.8	40.7	40.5					
LSD				7.1	12.0	15.3	8.5	5.6					
CV				7.1	14.7	19.7	10.2	13.1					

*Average of all four sites.

**M05-357149 (experimental designation)

DAP = Days After Planting.

Bolded values within columns are not statistically different.

Multiple Year Michigan Organic Soybean Variety Trial Results

Multiple Year Averages (2 yr = 2014-2015, 3 yr = 2013-2015, 4 yr=2012-2015)

Source	Variety	Group	Hilum color	Tuscola Bu/A			Lapeer Bu/A			Kalamazoo Bu/A			Average Bu/A*		
				2 yr	3 yr	4 yr	2 yr	3 yr	4 yr	2 yr	3 yr	4 yr	2 yr	3 yr	4 yr
Albert Lea	O.1706N	1.7	Black	54.0	47.9	-	40.9	38.8	-	41.7	47.3	-	45.5	43.5	-
Albert Lea	O.2265	2.2	Black	62.1	53.5	56.3	47.2	42.5	47.4	49.9	55.4	50.2	52.4	49.4	50.4
Blue River Hybrids	21F3	2.1	Yellow	59.6	51.8	-	29.3	30.9	-	47.6	50.8	-	44.9	43.6	-
DF Seeds	DF 155F	2.5	Clear	61.0	51.0	50.6	35.9	35.5	39.4	51.7	55.8	51.5	48.0	46.0	46.2
DF Seeds	DF 161 N STS	1.6	Black	55.9	50.4	54.7	43.7	44.4	49.1	51.5	53.1	48.3	49.2	47.7	49.2
DF Seeds	DF 242 N/S	2.4	Brown	61.3	53.7	57.0	39.6	38.1	44.4	46.6	51.5	52.2	48.8	47.5	50.7
DKB Farms	Vinton 81	1.9	Clear	49.3	43.1	44.9	29.6	30.9	35.1	40.0	43.8	41.2	39.3	38.6	39.4
Minn. Crop Improv	M04-220008	1.7	Yellow	56.8	-	-	35.1	-	-	41.2	-	-	44.1	-	-
Minn. Crop Improv	M04-295008	1.5	Yellow	52.4	-	-	39.1	-	-	47.4	-	-	45.4	-	-
MSU	E05181-T	2.0	Yellow	54.1	48.3	51.1	40.8	39.9	46.0	37.1	43.9	41.3	43.4	43.0	45.8
MSU	E07130-T	2.3	Yellow	50.2	44.8	46.9	31.6	32.9	38.6	42.5	46.7	44.7	40.5	40.3	41.7
MSU	E07158-T	2.3	Yellow	51.3	43.5	47.1	35.2	36.0	41.5	43.7	45.2	39.8	43.1	40.8	41.6
MSU	E10174	2.9	Yellow	59.0	53.9	57.0	45.0	45.6	50.0	50.8	56.3	53.4	51.4	51.4	53.6
MSU	E11128T	2.6	Yellow	55.3	-	-	39.3	-	-	45.8	-	-	47.6	-	-
MSU	E11399	2.5	Black	66.4	58.3	-	40.6	39.1	-	51.5	55.8	-	51.3	49.2	-
MSU	E11431	2.2	Black	63.7	53.9	-	36.3	39.0	-	47.5	53.4	-	48.5	47.7	-
MSU	E12007	2.8	Dk Brown	60.9	-	-	35.9	-	-	55.0	-	-	50.7	-	-
MSU	E12397	2.2	Lt Brown	61.2	-	-	35.4	-	-	47.9	-	-	47.8	-	-
Organic Bean & Grain	DH410	1.6	Clear	56.4	48.5	50.8	43.0	41.1	46.7	37.2	43.9	42.7	44.9	44.0	46.2
Organic Bean & Grain	DH530	1.6	Clear	56.3	45.6	48.2	35.2	35.8	42.2	41.6	47.7	42.0	41.7	40.7	41.8
Organic Bean & Grain	S2020	2.0	Clear	59.3	49.0	52.5	32.6	32.9	42.5	44.3	47.9	43.8	44.5	42.3	44.7
Schillinger Genetics	e2162	2.1	Yellow	50.7	43.0	47.9	36.2	36.6	40.1	46.7	49.7	46.5	44.2	42.9	44.9

Source	Variety	Group	Hilum Color	Percent Protein*			Percent Oil*			Seeds/Pound*		
				2 yr	3 yr	4 yr	2 yr	3 yr	4 yr	2 yr	3 yr	4 yr
Albert Lea	O.1706N	1.7	Black	36.6	36.5	-	17.8	17.8	-	3076	3233	-
Albert Lea	O.2265	2.2	Black	36.9	36.7	36.6	17.7	17.8	17.9	2913	2988	2933
Blue River Hybrids	21F3	2.1	Yellow	39.2	39.2	-	16.3	16.4	-	2166	2149	-
DF Seeds	DF 155F	2.5	Clear	38.7	38.6	38.6	17.1	17.2	17.3	2216	2251	2234
DF Seeds	DF 161 N STS	1.6	Black	36.4	36.2	36.2	17.7	17.8	17.8	3173	3271	3220
DF Seeds	DF 242 N/S	2.4	Brown	36.9	37.2	37.1	17.4	17.3	17.5	3120	3163	3018
DKB Farms	Vinton 81	1.9	Clear	40.6	40.5	40.4	16.2	16.3	16.4	2074	2105	2051
Minn. Crop Improv	M04-220008	1.7	Yellow	37.4	-	-	17.4	-	-	2437	-	-
Minn. Crop Improv	M04-295008	1.5	Yellow	39.1	-	-	17.2	-	-	2017	-	-
MSU	E05181-T	2.0	Yellow	37.9	37.8	37.8	17.4	17.5	17.5	2307	2300	2230
MSU	E07130-T	2.3	Yellow	40.8	40.8	40.8	16.2	16.3	16.3	1911	1940	1899
MSU	E07158-T	2.3	Yellow	41.4	41.6	41.6	16.2	16.3	16.3	1844	1872	1852
MSU	E10174	2.9	Yellow	35.4	35.3	35.1	17.7	17.8	17.9	2244	2298	2277
MSU	E11128T	2.6	Yellow	39.7	-	-	16.4	-	-	2193	-	-
MSU	E11399	2.5	Black	35.2	35.0	-	17.9	17.9	-	2657	2723	-
MSU	E11431	2.2	Black	35.4	35.1	-	17.7	17.8	-	2653	2700	-
MSU	E12007	2.8	Dk Brown	36.7	-	-	17.6	-	-	2973	-	-
MSU	E12397	2.2	Lt Brown	36.7	-	-	17.7	-	-	2615	-	-
Organic Bean & Grain	DH410	1.6	Clear	39.6	39.5	39.4	17.5	17.5	17.5	2515	2571	2566
Organic Bean & Grain	DH530	1.6	Clear	36.4	36.3	36.1	18.3	18.3	18.4	2534	2563	2578
Organic Bean & Grain	S2020	2.0	Clear	36.9	37.0	37.0	17.7	17.7	17.7	2459	2510	2477
Schillinger Genetics	e2162	2.1	Yellow	38.9	38.8	38.6	16.6	16.7	16.9	2598	2704	2657

*Average of all three sites.