2012 Michigan Organic Soybean Variety Trials

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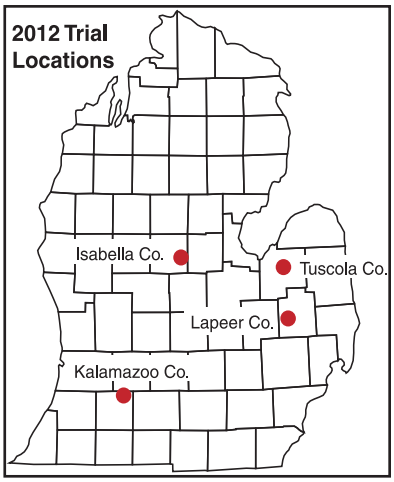
This report provides information on performance of non-GMO soybean varieties grown under certified organic management in Michigan in 2012. This research is funded by The CERES Trust and the North Central Region Sustainable Agriculture Research Education (NCR SARE).



Testing procedures

Four trial locations are reported in this publication. A total of 51 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 2012.

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 the Tuscola and Isabella 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

Isabella County

Nearest city:	Mt. Pleasant
Cooperator:	Tom Nelson
Soil type:	Guelph clay loam
Previous crop:	Double crop of peas followed by green beans
Tillage:	Spring moldboard, disked, soil finisher
Planting date:	05/15/2012
Harvest date:	10/12/2012

Kalamazoo County

Nearest city:	Hickory Corners
Cooperator:	W.K. Kellogg Biological Station
Soil type:	Kalamazoo sandy loam
Previous crop:	Mustard
Tillage:	Chisel plow, field cultivator
Planting date:	05/22/2012
Harvest date:	10/09/2012

Farmers, breeders and project team review soybean varieties during the Sept. 6, MSU Extension Summer Organic Tour.

Continued on next page.

Lapeer County

Nearest city:	Columbiaville
Cooperator:	Don Brockriede
Soil type:	Sandy loam
Previous crop:	Corn
Tillage:	Fall: deep tillage w/pulverizer then rye cover crop; Spring: field cultivator with large sweeps.
Planting date:	05/29/2012
Harvest date:	11/09/2012

Tuscola County

Nearest city:	Caro
Cooperator:	Mark and Steven Vollmar
Soil type:	Tappen-Londo loam
Previous crop:	Black beans followed by rye cover crop
Tillage:	Fall chisel plow, spring disked and field cultivator
Planting date:	05/24/2012
Harvest date:	10/13/2012

Growing conditions/comments

Isabella County: Unusually dry period during flowering, but timely rains resulted in good yields.

Kalamazoo County: Drought severely affected plots. Irrigation (five inches) was required to save research. The edges of the plots were effected by spider mites.

Lapeer County: Conditions at planting were very good, but then became very dry until the end of July. Timely rains then fell through to harvest time.

Tuscola County: May was very dry at planting and all of June and the first half of July were abnormally dry also. After July 17 there was adequate moisture which helped yields.

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 C.V. 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.

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.

Planting at Isabella Co. site.

Tuscola Co. site.

Field tour at Lapeer Co. site.

Harvest at the W.K. Kellogg Biological Station site.

			Yield – Bu/A								
Source	**Variety**	**Maturity group**	**Tuscola**	**Isabella**	**Lapeer**	**KBS**	**Average Bu/A**	**Average Ht. In.[1]**	**Average Protein**	**Average Oil**	**Average Seeds/lb**
Albert Lea (Viking)	1955 AT	1.9	58.5	35.2	54.5	16.3	41.1	34	36.4	18.6	2769
Albert Lea (Viking)	2022	2.0	60.4	40.7	56.8	29.5	46.9	35	36.2	18.3	2425
Albert Lea (Viking)	2054N	2.0	60.8	46.6	66.3	38.1	53.0	37	37.3	17.7	2141
Albert Lea (Viking)	IA 2053	2.0	56.1	41.6	53.8	35.1	46.7	41	39.5	16.9	2005
Albert Lea (Viking)	2265	2.2	64.8	51.8	62.0	34.7	53.3	40	36.5	18.1	2768
Blue River	Blue River 17C2	Mid 1	59.3	55.5	47.9	36.9	49.9	37	35.5	18.3	2996
Blue River	Blue River 2A12	Mid 2	62.2	40.2	53.9	32.6	47.2	39	37.1	17.8	2780
Blue River	Blue River 23C2	Mid 2	59.5	61.5	57.4	29.8	52.1	41	35.7	18.1	2462
DF Seeds	DF 155F	2.5	49.5	48.2	51.3	38.7	46.9	29	38.4	17.5	2183
DF Seeds	DF 242 N/S	2.4	67.1	57.5	63.2	54.0	60.5	37	36.8	17.8	2586
DF Seeds	DF 161N STS	1.6	67.6	49.8	63.0	33.8	53.6	37	36.2	18.0	3067
DKB Farms	VINTON 81	1.9	50.2	36.0	47.9	33.4	41.9	46	40.1	16.6	1890
Iowa State University	A 09-754003	–	62.0	52.3	55.3	27.8	49.4	32	38.3	17.7	2623
Iowa State University	IA 2102	–	71.2	61.2	62.6	29.6	56.2	37	36.2	18.1	2701
Iowa State University	IA 2103	–	56.5	41.0	51.0	34.2	45.7	36	38.9	16.9	1898
Iowa State University	IA 2104	–	66.5	39.9	59.3	25.2	47.7	37	39.4	17.0	2061
Iowa State University	IA 3051	–	71.0	48.1	62.3	33.3	53.7	41	39.7	16.4	2093
Organic Bean & Grain	DH 410	1.6	57.4	51.4	63.6	39.1	52.9	38	39.1	17.5	2551
Organic Bean & Grain	S 20-20	2.0	63.1	42.0	71.3	31.5	52.0	38	36.8	17.9	2378
Organic Bean & Grain	IA 2041	2.0	57.9	37.6	53.1	36.0	46.2	43	40.8	16.9	2170
Organic Bean & Grain	DH 530	1.5	55.7	38.5	61.2	25.0	45.1	38	35.4	18.7	2626
Organic Bean & Grain	TITAN	1.4	54.7	41.8	45.6	27.7	42.5	31	37.5	17.6	2514
Organic Bean & Grain	MK 1016 (Natto)	1.0	39.6	28.1	40.3	29.0	34.3	38	37.4	17.6	4469
Michigan State Univ.	E05181-T	2.0	59.6	60.1	64.2	33.6	54.4	35	37.6	17.8	2020
Michigan State Univ.	E06331-T	2.4	59.2	38.6	54.9	30.0	45.7	33	40.4	16.4	1923
Michigan State Univ.	E06341-T	–	60.1	39.4	53.7	31.6	46.2	40	40.1	16.8	2152
Michigan State Univ.	E07051	2.2	66.5	61.6	64.3	35.8	57.1	36	37.0	18.1	2284
Michigan State Univ.	E07130-T	–	53.4	36.8	55.8	38.6	46.2	45	40.8	16.6	1776
Michigan State Univ.	E07158-T	–	58.0	37.2	58.0	23.6	44.2	45	41.9	16.5	1790
Michigan State Univ.	E08210LL	2.3	63.3	41.9	52.8	36.5	48.6	36	36.9	17.3	2493
Michigan State Univ.	E08313-T	–	61.0	44.8	55.9	34.1	49.0	41	38.5	17.7	2177
Michigan State Univ.	E09014	–	58.1	60.2	54.5	45.4	54.6	45	36.9	17.7	2634
Michigan State Univ.	E09090	–	52.1	62.6	63.9	29.3	52.0	30	35.1	18.1	2622
Michigan State Univ.	E09222LL	2.4	57.9	51.5	56.5	27.2	48.3	31	37.3	17.2	2857
Michigan State Univ.	E10149	–	65.5	54.8	60.7	41.2	55.6	41	33.9	18.5	2736
Michigan State Univ.	E10169	–	61.6	40.3	58.4	29.9	47.6	41	34.8	19.0	2861
Michigan State Univ.	E10173	–	54.4	64.8	61.4	39.5	55.0	36	35.9	17.7	2277
Michigan State Univ.	E10174	–	66.2	66.2	63.3	44.7	60.1	43	34.7	18.2	2215
Michigan State Univ.	E10254LL	–	65.1	43.4	59.3	30.9	49.7	37	36.5	18.5	2781
Michigan State Univ.	E10265LL	–	64.8	43.1	61.7	39.2	52.2	40	36.8	18.0	2463
Schillinger Genetics	e2062	2.0	59.6	53.1	56.1	39.2	52.0	31	38.6	18.2	2384
Schillinger Genetics	e2162	–	62.5	53.6	50.6	36.6	50.8	36	38.1	17.5	2515
Schillinger Genetics	XP 2272	2.2	60.8	53.1	50.4	37.7	50.5	36	41.8	16.7	2750
Schillinger Genetics	XC 2282	2.2	68.8	58.3	63.1	39.5	57.4	37	37.9	17.7	2555
SunOpta	SR 67	–	54.0	46.0	48.1	35.8	46.0	45	40.3	16.8	1955
SunOpta	S20G7	–	60.4	44.1	64.2	28.8	49.4	39	38.3	17.3	2059
SunOpta	IA 3027	–	59.6	44.9	52.5	42.1	49.8	41	39.0	16.3	2126

Table continued on next page.

			Yield = Bu/A								
Source	**Variety**	**Maturity group**	**Tuscola**	**Isabella**	**Lapeer**	**KBS**	**Average Bu/A**	**Average Ht. In.[1]**	**Average Protein**	**Average Oil**	**Average Seeds/lb**
Univ. of Minn (MCIA)	MN1505 SP	1.5	52.3	33.1	48.3	31.4	41.3	33	39.9	17.5	2131
Univ. of Minn (MCIA)	MN1410	1.4	54.5	48.1	55.5	33.4	47.9	37	37.8	18.0	2630
Univ. of Minn (MCIA)	MN1701 CN	1.7	53.3	56.9	52.0	17.5	44.9	36	36.8	18.0	2849
Univ. of Minn (MCIA)	M02-359041	1.8	49.2	36.0	42.8	32.5	40.1	32	39.7	17.3	1916
	Grand Mean		59.5	47.5	56.6	33.7		[1] Average height of Tuscola and Isabella sites only. [2] See Growing Conditions/comments for Kalamazoo County.			
	Maximum		71.2	66.2	71.3	54.0					
	Minimum		39.6	28.1	40.3	16.3					
	LSD		13.0	14.2	12.8	21.3					
	CV		13.2	17.9	13.6	38.1[2]					

Results

Approximately 75 organic producers took the opportunity to view the trials during at least one of three different field events this summer:

1) Organic Farmers of Michigan Field Day, August 28 (viewed at the Tuscola site).
2) MSU Extension Summer Organic Tour, September 6 (viewed at the Lapeer, Tuscola and Isabella site).
3) KBS Organic Farm Tour, September 18 (viewed at the W.K. Kellogg Biological Station site).

The trial results were shared with approximately 50 organic producers who attended the MSU Extension Organic Market update on Dec. 3 in Millington, Michigan.

The results are also a part of the 2012 Mid Michigan Crop Report. This report contains on farm research results and MSU university trial results for field crops applicable for the area. This report is discussed and distributed at over 10 producer meetings during December and January.

A 2013 planning meeting with farmers will take place in January. We will be using a SARE grant to continue this work in 2013-2015.

Special thanks to our field crew for their efforts: Josh Dykstra, Michael Barrows, Amelia Mutch, Victoria Ackroyd, Phillip Kantola.

Seed sources

DKB Farm & Services
Don Brockriede
4945 Marathon Road
Columbiaville, MI 48421
810-688-3008

D.F. Seeds Inc.
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
John Simmons
26 E Sanilac
Sandusky, MI 48471
810-648-5600

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 Moies, IA 50266
515-225-6164

Iowa State University
Dr. Walter Fehr/Kevin Scholbroch
1212 Agronomy Hall
Ames, IA 50011-1010
515-294-6864

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

Blue Rive Hybrids
Maury Johnson
27087 Timber Rd.
Kelly, IA 50134
800-370-7979

University of Minnesota/ MN Crop Improvement
Roger Wippler
1900 Hendon Ave.
St. Paul, MN 55108
612-625-7766

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