

School of Agriculture-Western Illinois University
Organic Research Program
2013 Soybean Variety Trials-Yields Summary
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Organic site (Allison farm)	Variety	Group	Company	Organic site (Allison farm) Yields (bu/a)	Significance groups ($\alpha = 0.05$)	Rank	Soybean Stand	Significance groups ($\alpha = 0.05$)	Rank
	34A7	3.4	Blue River Hybrids	65.0	a	1	141,831	bc	4
	GH 232	2.3	Great Harvest Organics	62.1	a	2	170,407	a	1
	LVF 3507	3.5	Lakeview Farm	62.0	ab	3	138,695	cd	5
	LVF 3924	3.9	Lakeview Farm	61.1	ab	4	156,119	ab	2
	GH 349	3.4	Great Harvest Organics	60.9	ab	5	119,877	ef	8
	389F.Y	3.8	Blue River Hybrids/eMerge	60.0	ab	6	125,801	def	7
	30C3	3.0	Blue River Hybrids	55.5	bc	7	133,120	cde	6
	32F0	3.2	Blue River Hybrids	50.0	cd	8	116,044	f	9
	29AR9	2.9	Blue River Hybrids	48.8	d	9	146,013	bc	3
				LSD = 6.57			LSD = 15,543		

Conventional site (WIU farm)	Variety	Group	Company	Conventional site (WIU farm) Yields (bu/a)	Significance groups ($\alpha = 0.05$)	Rank	Soybean Stand	Significance groups ($\alpha = 0.05$)	Rank
	GH 232	2.3	Great Harvest Organics	47.4	a	1	136,779	a	1
	389F.Y	3.8	Blue River Hybrids/eMerge	44.7	ab	2	93,218	de	8
	34A7	3.4	Blue River Hybrids	44.4	ab	3	128,067	ab	2
	LVF 3507	3.5	Lakeview Farm	42.4	b	4	95,832	de	7
	GH 349	3.4	Great Harvest Organics	41.5	bc	5	100,188	cde	6
	LVF 3924	3.9	Lakeview Farm	41.3	bc	6	123,711	abc	4
	30C3	3.0	Blue River Hybrids	40.1	bc	7	104,544	bcd	5
	29AR9	2.9	Blue River Hybrids	36.9	cd	8	128,067	ab	3
	32F0	3.2	Blue River Hybrids	34.2	d	9	74,052	e	9
				LSD = 4.73			LSD = 27,859		

LSD = Least Significant Difference
 Different letters associated with yields in the table indicate significant differences among treatments.

Research Site Descriptions

Organic Site

The Allison Organic Research Farm (certified by MOSA) is located 7 miles north of Sciota, IL in southwestern Warren County. The 2013 soybean variety trial was located in field 2C which is mapped as a Sable silty clay loam. One-row x 220' plots were planted on June 20th with a John Deere 1760 12-row planter with a target seeding rate of 180,000/a. The trial was arranged as a complete randomized block design with 5 replications. Methods of weed control included rotary hoeing 2 times, one cultivation, and small amount of hand weeding. Sub-plots ranging from 33' - 47' in length were harvested with an old KEM plot combine on 10/28/13 and 10/29/13. Some plots were also hand harvested later to help determine a yield correction factor due to combine issues reducing estimated yields.

Conventional Site

The WIU research farm is located ~ 2 miles north of Macomb in McDonough Co, IL. The 2013 variety trial was located in block 5, which is mapped as a Sable silty clay loam. The trial was arranged as a complete randomized block design with 4 replications. Two-row x 20' plots were planted on June 11th with a Kincaid JD71, 2-row plot planter with a target seeding rate of 160,000/a. Weed control included a conventional herbicide program and small amount of hand weeding to remove a few broadleaf weeds. Sub-plots ranging from 14' - 16' in length were harvested with an old KEM plot combine on 10/25/13.

Results

GH 232-Great Harvest Organics, the top yielding variety at the conventional farm (47.4 bu/a) had the 2nd highest yield at the organic site (62.1 bu/a) and had the highest stand of all varieties at both sites. 34A7-Blue River Hybrids, the top yielding variety at the organic site (65.0 bu/a), had the 3rd highest yield at the conventional farm (44.4 bu/a). Its stand ranked 4th at the organic site and 2nd at the conventional site.

32F0-Blue River Hybrids, performed poorly at both sites, with respect to both yield and stand. 29AR9-Blue River Hybrids also, yielded poorly at both sites, but ranked 3rd best in stand at both sites.

The average yield at the organic site was 58.3 bu/a and the average yield at the conventional site was 41.4 bu/a (29% lower). The average stand at the organic site was 138,656 plants/a and the average stand at the conventional site was 109,481 plants/a (21% lower). The top yielding variety at the organic site yielded 17.6 bu/a higher than the top yielder at the conventional site.

Discussion

Despite exceptionally dry weather in July and August, many of the soybean varieties yielded very well, especially at the organic site.

Emergence at the organic site was near perfect whereas crusting impeded emergence at the conventional site. Differences in emergence were likely related to better soil structure, planting technology and weather following planting at the organic site. The superior soil structure at the organic site is probably related to both long-term organic management history and the succession of cover crops (phacelia->sunflowers->buckwheat) in field 2C (site of the soybean variety trial) during the 2012 growing season.

Blue River Hybrids 34A7, the top yielding soybean at the organic site, has been at or near the top of our variety trial each of the past 5 years. It is a large leafy variety that has consistently performed well under organic no-till management (2009-2012) at the Allison Farm.

We typically would not expect a soybean variety with early group 2 maturity to be a top yielder at our location where most of soybeans planted on the farms in the township are mid group 3. According to Great Harvest Organics, GH 232 has historically performed very well when grown on soils that are average or high in

productivity. This early maturing soybean variety could give growers the opportunity to establish winter wheat or cover crops early enough for significant fall growth without taking a yield hit.

LVF 3507, the 3rd highest yielding soybean variety at the organic site, is a food grade soybean offered by Lakeview Farm. Even though a premium is usually offered for food grade soybeans, some growers are reluctant to grow food grade beans because of concern about poor yields. LVF 3507's strong performance at both our sites suggests that it offer growers an opportunity to enter the food grade market with little risk of yield drag.

LVF 3924, the 4th highest yielding soybean variety at the organic site is also a food grade soybean. It may qualify for an even higher premium than a standard food grade soybean because it typically has a very high protein content. Another food grade bean worth considering, based on this year's results, is the 389F.Y offered by Blue River Hybrids.

The yields and quality of the organic feed and food grade varieties in our trials have improved substantially over the past 15+ years. Part of this may be related to improved organic production practices at the Allison Farm but genetic potential also seems to be improving.