

School of Agriculture-Western Illinois University
Organic Research Program
2014 Soybean Variety Trials-Yields Summary
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Variety	Group	Company/ Source	Organic Allison Farm Planted 6/18 Yield (Bu/A)	Significance Groupings	Rank	Conventional WIU Site Planted 5/27 Yield (Bu/A)	Significance Groupings	Rank
34A7	3.4	Blue River Hybrids	56.3	a	1	38.0	bc	6
39A4	3.9	Blue River Hybrids	55.1	ab	2	41.9	ab	2
GH 389N	3.8	Great Harvest Organics	52.1	bc	3	36.9	bc	8
389F.Y	3.8	Blue River Hybrids	50.2	cd	4	40.9	b	3
GH 349	3.4	Great Harvest Organics	50.1	cd	5	31.2	c	11
GH 331N	3.3	Great Harvest Organics	49.7	cd	6	50.5	a	1
WFP 8C365	3.6	World Food Processing	48.8	cd	7	34.5	bc	10
LVF 3924	3.9	Lakeview Farms	48.6	cd	8	35.5	bc	9
GH 232	2.3	Great Harvest Organics	48.2	cd	9	39.6	bc	4
LVF 3507	3.5	Lakeview Farms	47.1	d	10	38.0	bc	7
MOFC Blend	3.1	Midwest Organic Farmers Coop	46.4	d	11	38.2	bc	5
			LSD =	4.1		LSD =	9.6	

LSD = Least Significant Difference at alpha = 0.05

Different letters in the significance groupings columns indicate significant yield differences among varieties, e.g., yield(s) associated with “a” are different than those associated with “bc”, but are not different than those associated with “ab” because they both contain an “a”

Research Site Descriptions

Organic Site

The Allison Organic Research Farm is located 7 miles north of Sciota, IL in southwestern Warren County. The variety trial was located in field 2B east, which is mapped as a Sable silty clay loam soil

(poorly drained). The trial was arranged as a complete randomized block design with 5 replications. Two-row plots were planted on 6/18/14 with a John Deere 12-row planter at a rate of 170,000 seeds/a. The field was rotary hoed and cultivated once. Also, moderate hand weeding was done to allow for weed-free plots. Plots ranging from 40' -70' in length were harvested with an old Kincaid plot combine on 11/7/14.

Conventional Site

The WIU research farm is located ~ 2 miles north of Macomb, IL in central McDonough County. The variety trial was located in block 13, which is mapped as a Downs silt loam soil (moderately well drained). The trial was arranged as a complete randomized block design with 5 replications. Two-row plots were planted on 5/27/14 with a Kincaid JD71, 2-row plot planter at a rate of 160,000 seeds/a. Weed control included a herbicide application and moderate hand weeding to remove broadleaf weeds and volunteer corn. The herbicide application occurred on 5/28/14 and consisted of: 10 fl oz/ac Outlook, 9 fl oz/ac Authority Assist, 28 fl oz/ac Touchdown Total, and 2 lb/ac AMS. Plots ranging from 14'-17' in length were harvested with an old Kincaid plot combine on 10/31/14.

Results

Soybean variety yields ranged from 46.4 to 56.3 bu/a at the Organic site and from 31.2 to 50.5 at the conventional site. Blue River Hybrids 34A7, the top yield yielding variety at the organic site (56.3 bu/a), ranked 6th at the conventional site. Great Harvest Organics GH 331N, the top yielding variety at the conventional site (50.5 bu/a), ranked 6th at the organic site. The top 3 varieties (yields averaged across both sites) were GH 331N (50.1 bu/a), BRH 39A4 (48.5 bu/a) and BRH 34A7 (47.2 bu/a).

Discussion

The 2014 growing season was wetter and cooler than average at both sites. At the conventional site, ~3.6" of rain was received during the first 2 weeks after planting. This very wet start combined with additional multi-inch rains and high winds late in the season are probably responsible for the significantly lower yields at the conventional site and the lower than expected performance of tall varieties like BRH 34A7. The Great Harvest Organics GH 331N may have performed very well at the conventional site not only due to its genetics, but also due to its standability and that none of its plots were in the wettest parts of the field.

Blue River Hybrid 34A7 has been a very strong and consistent performer in our plots since 2006, with the exception of 2009 when it yielded poorly at both sites. BRH 34A7 is a tall leafy variety that competes well against weeds and has performed well in organic no-till plots.

In 2013, the Great Harvest Organics GH 232 performed very well at both sites. It was the highest yielding variety (47.4 bu/ac) at the conventional site and the second highest yielding (62.1 bu/ac) at the organic site. In this year's trials it ranked 9th (48.2 bu/ac) at the organic site and ranked 4th (39.6 bu/ac) at the conventional site. Despite it being severely lodged at the conventional site, it still yielded well.

In 2013, Lakeview Farms LVF 3507 (food grade soybean) performed well at both sites. It was the 3rd in rank (62.0 bu/ac) at the organic site and 4th (42.4 bu/ac) at the conventional site. In this year's trials it ranked 10th (47.1 bu/ac) at the organic site and ranked 7th (38.0 bu/ac) at the conventional site. One of the reasons that it didn't perform well at the conventional site is because one of the plots happened to lie in a wet part of the field during the early stages of its growth. There were no obvious reasons why its yield diminished so much at the organic site compared to the year before.

Conclusion

Despite wetter and cooler than average conditions that were not conducive to top soybean yields some varieties performed well. A later planting at the organic site likely helped increase the yields at that site

due to avoiding heavy rains immediately after planting. Overall, yields at the organic site were acceptable, but yields at the conventional site were less than expected.