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**2011 NEW YORK STATE SOYBEAN  
VARIETY YIELD TESTS**

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# **NY SOYBEAN VARIETY YIELD TESTS IN 2011**

## **Introduction**

The annual testing of soybean varieties was conducted at three locations in New York in 2011. Roundup Ready varieties in Maturity Groups 0, I and II were planted at the Aurora Research Farm in Cayuga Co., Neenan Brothers Farm in Lima in Livingston Co., and the Ron Robbins' farm in Sackets Harbor in Jefferson Co. The Aurora and Lima sites, which are in central/western NY, average about 2450 growing degree days (GDD, 86-50° system) from May through September; whereas the Sackets Harbor site in Northern NY averages about 2200 GDD. All seed companies that are known to be distributing soybeans in New York were invited to enter their selections in the tests for a fee. The seed companies chose either two or three sites to test their varieties.

The April-May period was the wettest ever recorded in upstate NY so only 14% of the soybean crop was planted in May. We planted Group 0, I and Group II entries in separate tests at Aurora on 13 May; Group 0/I and Group II in separate tests at Sackets Harbor on 3 June; and Group 0/I and Group II in separate tests at Lima on 6 June. Each individual plot at all sites consisted of ten 20-ft. rows spaced 7 inches apart. Each entry was planted with small plot drill (6 foot wide Almaco) at seeding rates of 200,000 seeds/acre with four replications at each site. A randomized complete block experimental design was used for all tests. We used 22 fluid oz/acre of Roundup Touchdown about 5 weeks after planting for weed control at all sites. Aphid numbers and white mold was low throughout

the year at all sites. All varieties at all sites were monitored for phenological development beginning in late August and early September.

Yields were determined by harvesting an 18-foot section of the seven center rows (4.08 feet) of each plot at all sites with a small plot combine (Hege 140C). Plant height and lodging scores (1.0-5.0 rating with 1.0=no lodging and 5.0=complete lodging) were taken at harvest. The Group 0 and Group I tests were harvested at Aurora on 26 September and the Group II test on 27 September. The Group 0/I and II tests were harvested at Lima on 11 October. The Group 0/I and II tests were harvested at Sackets Harbor on 12 October. The Hege plot combine does not have weighing capabilities so the entire plot sample was taken to the lab to determine plot weight and then sub-sampled to determine moisture. All yields were adjusted to 13% moisture. We used the ANOVA test to determine significance for yield, seed moisture, lodging score, and height. All means were separated by Fisher's protected LSD (0.05) when significance occurred. **We have bolded those varieties were entered and performed well at the droughty Aurora site, the warm Lima site, and the cooler Sackets Harbor site.**

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## RESULTS AND DISCUSSION

### Growing Conditions

After the wettest April-May period on record at many locations in upstate NY, weather conditions turned exceedingly dry and warm in June and July (Table 1). It was 2<sup>nd</sup> driest and 3<sup>rd</sup> warmest July as well as the 6<sup>th</sup> driest and 5<sup>th</sup> warmest June through August 22<sup>nd</sup> period in 55 years of records at Aurora. Because we planted the Aurora site on 13 May and very warm conditions ensued for the remainder of the growing season, the Group 0 varieties attained the R7.0 stage (physiological maturity) by 28 August; most Group I varieties attained the R7.0 stage by 1 September, and Group II varieties attained the R7.0 stage between 7 and 12 September at Aurora. Consequently, soybeans in all maturity groups suffered some drought and heat stress during all or part of their pod-filling period in August, especially the Group 0 varieties as indicated by their average yield of 33 bushels/acre compared with 37 bushels/acre for Group I entries and 38 bushels/acre for Group II entries (Tables 2, 3, and 4).

At Avon (closest weather station to Lima), it was the warmest growing season (May through September) over the last 30 years and second driest July on record. Fortunately, it was the 13<sup>th</sup> wettest August though September at Avon, so the June 6<sup>th</sup> planted soybean trials did not experience stress during the pod-filling period. At Watertown (closest weather station to Sackets Harbor), it was the 5<sup>th</sup> warmest June through September on record. Although it was the 7<sup>th</sup> warmest August through September period, it was also the 3<sup>rd</sup> wettest August

through September period so the June 3<sup>rd</sup> planted soybean trials did not experience stress during the pod-filling period. At the Lima site, Group 0/I varieties averaged 58 bushels/acre and Group II varieties averaged 59 bushels/acre (Tables 5 and 6). At the Sackets Harbor site, Group 0/I varieties yielded 56 bushels/acre and Group II varieties yielded 53 bushels/acre (Tables 7 and 8). A light frost occurred at the Sackets Harbor site on 6 October when some late Group II varieties were in the R6.0- 6.5 stage (leaves turning yellow), which probably reduced their yield and delayed dry-down.

### **Lodging and Harvest Moisture**

Lodging was not observed at the Aurora site (Tables 2, 3, and 4) because of the short stature of the varieties, associated with the drought. Lodging was minimal at Sackets Harbor with only slight lodging observed in a few Group II varieties (Tables 7 and 8). Some lodging was observed in both tests at the Lima site (Tables 5 and 6) with some varieties showing significant lodging in the Group II tests. Most varieties at Aurora and Lima and Group I varieties at Sackets Harbor were within a couple points of 13% moisture at harvest with average moistures of 13.7, 13.7 and 14.4% for Group 0, I, and II Maturity Groups at Aurora, respectively (Group II varieties harvested a day later). At Lima, Group I varieties averaged 12.7% moisture (harvested between 11:00 and 1:00) and Group II varieties averaged 13.7% (harvested between 1:00 and 3:00). At Sackets Harbor, Group I varieties averaged 13.0% moisture but Group II varieties

averaged 17.2% probably because the light frost delayed dry-down of some of the varieties that still had yellow leaves (R6.5 stage).

### Yield

The sole Group 0 entry in the Group I tests at Lima and Sackets Harbor sites generally yielded low because their pod-filling period coincided with dry and warm conditions more than the Group I or II entries. There was no significant yield difference between 0905R2 from Channel Bio and S09-06 at the Aurora site where both were entered (Table 2).

When averaged across the Aurora and Lima sites, S17-F3 from Syngenta yielded much above-average and the highest in the Group I test, followed closely by HS 19A02 and HS 19A11 from Growmark FS (Tables 3 and 5). **In addition, both HS 19A02 and HS 19A11 yielded much above-average at Sackets Harbor (Table 7) so these varieties had the highest average yield of all varieties entered at three sites.** The variety, 1805R2 from Channel Bio, also had much above-average yield when averaged across Aurora and Sackets Harbor. **Other varieties that yielded above-average across the three sites include H16-10R2 from Hubner Seed, AG1832 and AG1931 from Asgrow, 1719R2 from T.A. Seeds, HS 17A12 from Growmark FS, and RPM DB1711RR from Doeblers.** In addition, S19-A6 from Syngenta had above-average yield when averaged across the Aurora and Lima sites. Other varieties that performed much-above average at individual sites include SG1911 from

Seedway (highest yield at Lima), AG1831 from Asgrow (Lima), and AG1031 from Asgrow (highest yield at Sackets Harbor and above-average yield at Lima),

**When averaged across three sites, AG 2232 and AG2031 from Asgrow had much above-average and the highest yield in the Group II tests (Tables 4, 6, and 8).** When averaged across two sites (Aurora and Lima), S21-N6 and S20-Y2 from Syngenta had much above-average yield. **Other Group II varieties that yielded above-average at three sites include AG2430 from Asgrow, SG2410 from Seedway, H20-12R2 from Hubner Seed, and SG2111 from Seedway.**

Also, 34Y27 from Dyna-Gro and 2400R2 from Channel Bio had above-average yield across two sites (Aurora and Lima). Other varieties that had much-above average yield at individual sites include AG2431 (highest yield at Aurora), 2229R2 from T.A. Seeds (much-above average at Lima and Sackets Harbor), V25N9RR from Dyna-Gro (above-average at Aurora and Lima), HS 27A14 from Growmark FS ((Aurora), 2800R2 from Channel Bio (Lima), S24-M4 from Syngenta (Lima), V278RR from Dyna-Gro (Lima), 2599R2 from T.A. Seeds (Lima), SG2018 from Seedway (much above-average at Sackets Harbor), and 38RY23 from Dyna-Gro (much above-average at Sackets Harbor).

## **CONCLUSION**

Soybean acreage was similar in New York in 2011 as in 2010 with about 280,000 harvested acres with a projected yield of 43 bushels/acre compared with 48 bushels/acre in 2011, the state record. Given that only 14% of the crop was planted in May (and only 43% of the corn crop), the acreage and yield are quite impressive in the challenging 2011 growing season. If the current price remains above \$11/ bushel, we expect soybean acreage in New York to increase next year. We invite all seed companies to enter their varieties at a modest fee in our New York soybean variety testing program. We wish to provide the ever-increasing number of NY soybean growers the best information on variety selection for New York growing conditions so we ask the seed companies to continue entering their best varieties and their promising new varieties for the 2012 tests. We appreciate your support in 2011!

Table 1. Monthly precipitation and growing degree days (GDD) at Aurora, Lima (Avon weather data), and Sackets Harbor (Watertown weather data) testing sites during the 2011 growing season.

Month	Precipitation			GDD (86-50 F)		
	Aurora	Lima*	Sackets Harbor**	Aurora	Lima*	Sackets Harbor**
May	3.56	-	-	334	-	-
June	2.78	3.28	2.85	508	549	467
July	0.85	0.74	1.77	702	711	676
August	4.82	4.64	6.38	583	607	594
Sept.	5.87	2.77	4.98	441	444	396
<b>Seasonal</b>	<b>17.88</b>	<b>11.43</b>	<b>15.98</b>	<b>2568</b>	<b>2311</b>	<b>2133</b>

\* Lima data is from Avon weather station  
 \*\* Sackets Harbor data is from Watertown

Table 2. Yield, seed moisture, lodging score, and height of Group 0 Roundup Ready soybean varieties harvested at Aurora, NY on 26 September, 2011.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		<u>bu/ac</u>	<u>%</u>	<u>1-5 rating</u>	<u>cm</u>
Channel Bio	0905R2	34.6	13.0	1.0	73
Syngenta	S09-N6	32.1	14.2	1.0	60
<b>Avg.</b>		<b>33</b>	<b>13.7</b>	<b>1.0</b>	<b>67</b>
<b>LSD 0.05</b>		<b>NS</b>	<b>1.0</b>	<b>NS</b>	<b>4</b>

Table 3. Yield, seed moisture, lodging score, and height of Group I Roundup Ready soybean varieties harvested at Aurora, NY on 26 September, 2011.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		<u>bu/ac</u>	<u>%</u>	<u>1-5 rating</u>	<u>cm</u>
Syngenta	S17-F3	46.1	13.8	1.0	68
Growmark FS	HS 19A02	44.9	14.9	1.0	63
Growmark FS	HS 19A11	41.8	13.1	1.0	54
Asgrow	AG1832	41.2	14.6	1.0	66
Syngenta	S19-A6	40.8	14.6	1.0	61
T.A. Seeds	1719R2	40.8	13.8	1.0	61
Growmark FS	HS 17A12	39.5	14.4	1.0	59
Asgrow	AG1931	39.1	13.7	1.0	67
Channel Bio	1805R2	39.0	13.5	1.0	64
Hubner Seed	H16-10R2	38.5	14.3	1.0	61
Doebler's	RPM DB1711RR	38.1	13.6	1.0	62
Asgrow	AG1831	35.7	14.2	1.0	62
Dyna-Gro	34RY17	35.3	13.7	1.0	58
Seedway	SG1911	34.6	12.6	1.0	48
Growmark FS	HS13A11	33.6	12.7	1.0	53
Syngenta	S17-G8	33.3	13.7	1.0	54
Asgrow	AG1631	33.3	13.7	1.0	59
Asgrow	AG1431	32.8	13.7	1.0	62
Seedway	SG1311	32.5	12.1	1.0	56
T.A. Seeds	1209R	32.2	14.1	1.0	57
Seedway	SG1711	30.0	12.8	1.0	55
Asgrow	AG1031	29.8	14.1	1.0	60
<b>AVG.</b>		<b>37</b>	<b>13.7</b>	<b>1.0</b>	<b>61</b>
<b>LSD 0.05</b>		<b>7</b>	<b>1.1</b>	<b>NS</b>	<b>5</b>

Table 4. Yield, seed moisture, lodging score, and height of Group II Roundup Ready soybean varieties harvested at Aurora, NY on 27 September, 2011.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		<u>bu/ac</u>	<u>%</u>	<u>1-5 rating</u>	<u>cm</u>
Asgrow	AG2431	43.4	13.3	1.0	60
Syngenta	S21-N6	41.4	13.0	1.0	60
Seedway	SG2410	41.0	14.7	1.0	55
Dyna-Gro	V25N9RR	40.7	12.5	1.0	63
Asgrow	AG2430	40.5	13.7	1.0	60
Dyna-Gro	34RY27	40.4	16.2	1.0	62
Growmark FS	HS 27A14	40.3	14.3	1.0	65
Asgrow	AG2232	39.2	12.4	1.0	62
Growmark FS	HS 21A12	38.8	13.1	1.0	61
Syngenta	S20-Y2	38.7	12.3	1.0	61
Dyna-Gro	38RY23	38.3	13.7	1.0	56
Asgrow	AG2330	38.3	15.4	1.0	62
Channel Bio	2300R2	37.3	13.5	1.0	62
Doebler's	RPMDB2511RR	37.1	14.7	1.0	52
Seedway	SG2018	37.1	14.2	1.0	55
T.A. Seeds	2890R	36.7	19.3	1.0	64
Channel Bio	2400R2	36.3	14.5	1.0	63
Channel Bio	2200R2	35.9	13.1	1.0	56
Hubner Seed	H20-12R2	35.9	12.1	1.0	59
Channel Bio	2305R2	35.8	12.8	1.0	57
Asgrow	AG2031	35.4	12.2	1.0	58
Channel Bio	2800R2	35.3	18.1	1.0	70
Seedway	SG2111	35.3	15.1	1.0	59
Syngenta	S24-M4	34.9	13.4	1.0	50
T.A. Seeds	2599R2	34.3	16.0	1.0	67
Asgrow	AG2532	34.3	13.9	1.0	55
T.A. Seeds	2229R2	33.7	12.9	1.0	55
Channel Bio	2903R2	32.8	19.1	1.0	57
Dyna-Gro	V278RR	32.8	17.9	1.0	62
<b>AVG.</b>		<b>38</b>	<b>14.4</b>	<b>1.0</b>	<b>59</b>
<b>LSD 0.05</b>		<b>5</b>	<b>1.0</b>	<b>NS</b>	<b>5</b>

Table 5. Yield, seed moisture, lodging score, and height of Group I Roundup Ready soybean varieties harvested at Lima, NY on 12 October, 2011.

<b>COMPANY/BRAND</b>	<b>VARIETY</b>	<b>YIELD</b>	<b>MOISTURE</b>	<b>LODGING</b>	<b>HEIGHT</b>
		<u>bu/ac</u>	<u>%</u>	<u>1-5 rating</u>	<u>cm</u>
Seedway	SG1911	62.3	12.5	1.4	87
Growmark FS	HS 19A11	61.9	13.0	1.3	88
Asgrow	AG1931	61.4	13.0	1.4	88
Seedway	SG1311	61.0	12.5	1.4	88
Asgrow	AG1831	61.0	13.1	1.6	95
Seedway	SG1711	60.1	12.5	1.3	78
Hubner Seed	H16-10R2	59.7	12.2	1.4	84
T.A. Seeds	1719R2	59.7	12.8	1.2	80
Asgrow	AG1031	58.8	12.5	1.4	90
Asgrow	AG1431	58.3	12.3	1.4	82
Growmark FS	HS 19A02	58.3	12.9	1.4	83
Asgrow	AG1631	58.3	12.4	1.3	86
Growmark FS	HS 13A11	58.2	12.4	1.4	89
Syngenta	S17-F3	58.0	13.6	1.5	84
Asgrow	AG1832	57.1	13.8	1.7	95
Doebler's	RPMDB1711RR	56.4	12.4	1.5	83
Growmark FS	HS 17A12	55.8	12.6	1.2	79
Syngenta	S19-A6	55.0	14.0	1.5	94
Hubner Seed	H15-10R2	54.6	12.2	1.4	90
T.A. Seeds	1209R	53.2	13.1	1.3	78
Dyna-Gro	34RY17	51.3	13.2	1.3	81
Syngenta	S17-G8	50.7	12.5	1.4	82
Syngenta	S09-N6	50.4	12.4	1.3	80
<b>AVG.</b>		<b>58</b>	<b>12.7</b>	<b>1.4</b>	<b>85</b>
<b>LSD 0.05</b>		<b>6</b>	<b>0.8</b>	<b>0.2</b>	<b>6</b>

Table 6. Yield, seed moisture, lodging score, and height of Group II Roundup Ready soybean varieties harvested at Lima, NY on 12 October, 2011.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		<u>bu/ac</u>	<u>%</u>	<u>1-5 rating</u>	<u>cm</u>
Asgrow	AG2232	63.7	13.3	1.7	101
Syngenta	S20-Y2	63.4	12.3	1.5	90
Channel Bio	2400R2	63.1	13.2	1.3	89
Channel Bio	2800R2	62.3	12.9	1.8	96
Seedway	SG2111	62.3	12.6	1.3	85
Syngenta	S24-M4	62.1	13.1	1.3	86
T.A.Seeds	2229R2	61.9	12.6	1.4	88
Growmark FS	HS 21A12	61.9	13.3	1.7	97
Asgrow	AG2430	61.1	12.6	1.3	89
Dyna-Gro	V25N9RR	60.8	12.7	1.6	100
Dyna-Gro	V278RR	60.7	14.2	1.8	103
Syngenta	S21-N6	60.7	14.8	1.6	92
Asgrow	AG2031	60.5	11.8	1.2	86
T.A. Seeds	2599R2	60.2	15.5	2.4	101
Hubner Seed	H20-12R2	60.1	12.3	1.3	86
Seedway	SG2410	59.6	14.9	1.7	107
Asgrow	AG2431	59.0	13.1	1.3	81
Channel Bio	2305R2	59.0	13.1	1.5	85
Asgrow	AG2532	58.9	16.7	1.9	97
Dyna-Gro	34RY27	58.5	15.8	1.7	98
Asgrow	AG2330	58.2	15.4	2.4	90
Seedway	SG2018	57.1	12.2	1.2	82
Channel Bio	2300R2	56.9	12.3	1.3	87
Doebler's	RPMDB2511RR	55.3	13.7	1.5	88
Dyna-Gro	38RY23	55.0	12.9	1.4	91
T.A. Seeds	2890R	53.4	14.7	1.4	93
Growmark FS	HS 27A14	52.5	15.7	2.4	93
Channel Bio	2903R2	52.3	15.5	2.4	95
<b>AVG.</b>		<b>59</b>	<b>13.7</b>	<b>1.7</b>	<b>92</b>
<b>LSD 0.05</b>		<b>6</b>	<b>1.1</b>	<b>0.5</b>	<b>12</b>

Table 7. Yield, seed moisture, lodging score, and height of Group I Roundup Ready soybean varieties harvested at Sackets Harbor, NY on 13 October, 2011.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		<u>bu/ac</u>	<u>%</u>	<u>1-5 rating</u>	<u>cm</u>
Asgrow	AG1031	62.3	12.7	1.0	69
Growmark FS	HS 19A02	60.3	12.8	1.0	72
Channel Bio	1805R2	60.2	13.2	1.0	65
Doebler's	RPM DB1711RR	60.0	12.4	1.0	68
Growmark FS	HS 19A11	59.3	13.1	1.0	62
Hubner Seed	H16-10R2	59.1	13.0	1.0	65
Asgrow	AG1832	56.7	13.2	1.1	72
Asgrow	AG1631	56.2	12.8	1.1	66
Growmark FS	HS 17A12	55.9	13.3	1.0	69
Asgrow	AG1431	55.2	12.5	1.0	69
Seedway	SG1711	54.9	13.0	1.0	67
Seedway	SG1911	54.5	12.9	1.0	65
Asgrow	AG1831	54.5	14.6	1.0	78
Dyna-Gro	34RY17	54.4	13.4	1.0	65
TA Seeds	1719R2	53.8	13.0	1.0	62
Channel Bio	0905R2	53.6	11.9	1.0	70
Asgrow	AG1931	53.4	13.6	1.0	77
Growmark FS	HS 13A11	52.8	12.6	1.0	60
Seedway	SG1311	52.2	12.3	1.0	62
TA Seeds	1209R	46.6	13.4	1.0	53
<b>AVG.</b>		<b>56</b>	<b>13.0</b>	<b>1.0</b>	<b>67</b>
<b>LSD 0.05</b>		<b>5</b>	<b>0.61</b>	<b>NS</b>	<b>6</b>

Table 8. Yield, seed moisture, lodging score, and height of Group II Roundup Ready soybean varieties harvested at Sackets Harbor, NY on 13 October, 2011.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		<u>bu/ac</u>	<u>%</u>	<u>1-5 rating</u>	<u>cm</u>
Asgrow	AG2031	64.0	14.1	1.1	80
Asgrow	AG2232	62.2	17.2	1.1	86
TA Seeds	2229R2	58.5	15.2	1.0	68
Hubner Seed	H20-12R2	58.4	13.7	1.0	70
Seedway	SG2018	58.3	13.7	1.0	81
Seedway	SG2111	57.5	14.0	1.0	73
Dyna-Gro	38RY23	56.5	16.0	1.1	75
Asgrow	AG2430	56.2	15.2	1.0	78
Growmark FS	HS 21A12	54.3	15.7	1.0	71
Seedway	SG2410	54.1	19.0	1.2	87
Growmark FS	HS 27A14	53.9	18.7	1.3	86
Channel Bio	2200R2	53.7	15.5	1.1	70
Asgrow	AG2330	53.4	18.6	1.1	76
TA Seeds	2599R2	51.0	19.4	1.4	90
Dyna-Gro	V25N9RR	49.5	19.5	1.1	78
Asgrow	AG2431	43.2	19.7	1.1	72
Doebler's	RPMDB2511RR	42.6	18.9	1.1	70
TA Seeds	2890R	41.1	19.9	1.2	86
Asgrow	AG2532	41.0	19.5	1.1	79
<b>AVG.</b>		<b>53</b>	<b>17.2</b>	<b>1.09</b>	<b>78</b>
<b>LSD 0.05</b>		<b>5</b>	<b>0.80</b>	<b>0.21</b>	<b>7</b>

