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**2012 NEW YORK STATE SOYBEAN
VARIETY YIELD TESTS**

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NY SOYBEAN VARIETY YIELD TESTS IN 2012

Introduction

The annual testing of soybean varieties was conducted at three locations in New York in 2012. Roundup Ready varieties in Maturity Groups I and II were planted at the Aurora Research Farm in Cayuga Co., Neenan Brothers Farm at Lima in Livingston Co., and the Miner Institute at Chazy in Clinton 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 Chazy site in Northern NY averages about 2150 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 modest fee. The seed companies chose either two or three sites to test their varieties.

The April-May period was warm and dry in upstate NY, which allowed for timely planting at all sites. We planted Group I and Group II entries in separate tests at Aurora on 14 May, and Group I and Group II in separate tests at Lima on 24 May. At Chazy, Group I and II varieties were planted in the same test on 25 May. 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 incidence were 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 I test was harvested at Aurora on 13 September and

the Group II test on 25 September. The Group I and II tests were harvested at Lima on 4 October; whereas the Group I/II test was harvested at Chazy on 25 October. The Hege plot combine does not have weighing capability 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.

RESULTS AND DISCUSSION

Growing Conditions

May and June were warm months with ample rainfall (Table 1), which allowed soybeans to grow rapidly and fill-in quickly during the early vegetative period. Unfortunately, weather conditions turned exceedingly dry and warm from 20 June until 15 July at Aurora and Lima. The early Group I varieties at both sites attained the R3 stage by 15-20 July, which may have negatively impacted pod set in those varieties. Weather conditions were warm and moist until mid-August during pod and seed set for the late Group I and early Group II varieties at both sites. Weather conditions turned dry again, however, for the remainder of August, especially at the Aurora site, which coincided with seed-fill for the late Group II varieties. Consequently, the late Group II varieties generally did not yield as well as the early Group II varieties at both sites, probably because of more stress during the critical seed-fill period in late August for the Group II varieties at both sites. At the Chazy site, cooler temperatures and timely precipitation resulted in mostly stress-free conditions for soybeans in this northern location (Table 1). All Group I varieties attained the R7.0 stage (physiological maturity) by 1 September, and all Group II varieties attained the R7.0 stage by 7 September at Aurora. At Lima, the Group I

varieties attained the R7.0 stage by 7 September and all Group II varieties by 15 September.

Lodging and Harvest Moisture

Minimum lodging occurred in the Group I tests at Aurora and Lima (Tables 2 and 3). Some lodging was observed in the Group II tests at both sites (Tables 4 and 5), especially for some late Group II varieties at Lima. Despite very high yields and slightly greater plant height for the Group II varieties at Chazy, lodging did not occur (Table 6).

The dry and warm conditions from mid-August until mid-September was reflected in average moisture of less than 10% for the Group I test harvested on 13 September at Aurora (Table 2). Weather conditions turned wet at Aurora for the remainder of September preventing harvest of the Group II test until 25 September when moistures averaged less than 12% (Table 3). Likewise, conditions were wet at Lima from mid-September on, but we were able to sneak into harvest on 4 October, despite moistures approaching 20% for both the Group I and Group II varieties (Tables 4 and 5). The Group I varieties at Lima were harvested early in the afternoon (1:00-2:30) and Group II varieties were harvested later in the day (2:30-4:30) when moistures had dropped a couple of percentage points so there was no difference in moistures between Maturity Groups at this site. Likewise at the Chazy site, the Group I/II test was harvested in late October after a few killing frosts and a week of dry weather so average moisture was less than 13% for varieties for all varieties except one (Table 6).

When averaged across varieties, the Group I test averaged 52 bushels/acre compared with 59 bushels/acre for the Group II test at Aurora (Tables 2 and 4). At Lima, the Group I test averaged 49 bushels/acre compared with 58 bushels/acre for the Group II test (Tables 3 and 5). At the Chazy site where soybean yields are frequently high, the test

averaged 85 bushels/acre with the Group I varieties averaging 81 bushels/acre compared with 91 bushels/acre for Group II entries (Table 6). The difference in yield between Maturity Groups was more pronounced this year probably because the excessive droughty conditions from late June through mid-July probably hurt the Group I more than the Group II varieties at all sites.

Aurora and Lima Group I Varieties - Yield

When averaged across the Aurora and Lima sites, **13A11** from GROWMARK FS, which had the highest numerical yield at Lima, had the highest average yield in the Group I test (Tables 2 and 3). Other outstanding varieties included **15A11**, also from GROWMARK FS, and **SG1513** from Seedway. Other high-yielding Group I varieties include **RPMDB1711** from Doebler's, **SG1911** from Seedway, and **5N180RR2** from Mycogen. In addition, **1805R2** from Channel, which was only entered at the Aurora site (as well as the Sackets Harbor site which has not been harvested because of wet soil conditions), had the highest numerical yield at Aurora. Most of the list high-yielding varieties had yields above-average at both locations, which indicates that these Group I varieties should perform well in central/western NY.

Aurora and Lima Group II Varieties-Yield

When averaged across the Aurora and Lima sites, **20A12** from GROWMARK FS, which had the highest numerical yield at both sites, had the highest average yield in the Group II test (Tables 4 and 5). Other outstanding varieties include **S20-Y2** from Syngenta, **31RY20** from Dyna-Gro, **21A12** from GROWMARK FS, and **TS2229R2** from T.A. Seeds. All of these varieties yielded much above-average at both sites indicating that these varieties should perform well in central/western NY. In addition, **S21-N6** from

Syngenta, a 7-year old variety, yielded 2 to 3 bushels/acre above average at both sites as did **SG2111** from Seedway.

Other high-yielding Group II varieties include **5N210RR2** from Mycogen and **2306R2** from Channel, which performed exceptionally well at Aurora. Also, **S28-K1** from Syngenta and **2305R2** from Channel, performed exceptionally well at Lima. Other varieties that yielded above-average include **SG2013** from Seedway, which performed well at Lima, and **RPMDB2612** from Doebler's, which performed well at Aurora.

Chazy Group I/II Varieties-Yield

Outstanding Group I varieties at this site include **SG1911** from Seedway, **17A12** from GROWMARK FS, and **1805R2** from Channel (Table 6). All of these late Group I varieties had yields that exceeded the average Group II yields for this test (91 bushels/acre). In addition, both **1805R2** and **SG1911** yielded much-above average at Aurora. Likewise, **13A11** from GROWMARK FS, which had the highest numerical yield at Lima, also yielded much-above average at this site. Other high-yielding Group I varieties at this site include **5N180RR2** from Mycogen, **S18RY33** from Dyna-Gro, **TS1719R2** from T.A. Seeds, **SG1711** from Seedway, and **S17-G8** from Syngenta.

The Group II variety, **21A12** from GROWMARK FS, which had the second highest numerical yield at Lima, had the highest numerical yield in the Group I/II test at this location. Another exceptionally high-yielding Group II variety at this site was **TS2229R2** from T.A. Seeds. Other above-average Group II varieties at this site include **S20-Y2** from Syngenta, **2105R2** from Channel, **SG2111** from Seedway, and **S21-N6** from Syngenta

CONCLUSION

Soybean, which exceeded 300,000 acres in New York in 2012, has a projected yield of 45 bushels/acre. If the current price remains above \$14/bushel, we expect soybean acreage in New York to once again increase in 2013. 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 2013 tests. We appreciate your support in 2012!

Table 1. Monthly precipitation and growing degree days (GDD) at Aurora, Lima (Avon weather data), and Chazy (Plattsburg weather data) testing sites during the 2012 growing season.

Month	Precipitation			GDD (86-50 F)		
	Aurora	Lima*	Chazy**	Aurora	Lima*	Chazy**
May	3.25	2.88	2.64	441	445	369
June	4.09	3.49	2.49	509	529	452
July	3.63	2.82	3.05	698	718	635
August	1.84	2.58	2.67	627	625	574
Sept.	5.05	3.41	5.26	413	414	329
Seasonal	17.86	15.18	16.11	2668	2732	2359

* Lima data is from Avon weather station

** Chazy data is from Plattsburg/Dannemora

Table 2. Yield, seed moisture, height, and lodging score of Group I Roundup Ready soybean varieties harvested at Aurora, NY on 13 September, 2012.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	HEIGHT	LODGING
		bu/acre	%	cm	1-5 scale
SeedWay	SG1513	56.1	10.1	74	1.0
Mycogen	5N180RR2	55.5	10.1	66	1.0
SeedWay	SG1911	55.1	10.0	68	1.0
GROWMARK FS	13A11	54.8	10.0	74	1.0
Syngenta	S17-G8	53.4	10.0	66	1.0
Doebler's	RPMD1212	53.0	9.7	62	1.0
GROWMARK FS	15A11	52.7	10.3	73	1.0
Syngenta	S10-G7	50.5	9.9	69	1.0
Doebler's	RPMD1711	50.5	9.8	75	1.0
DynaGro	S18RY33	50.2	9.9	66	1.0
TA Seeds	TS1719R2	49.9	10.2	68	1.0
Channel	0906R2	48.1	9.7	63	1.0
GROWMARK FS	17A12	47.3	10.1	65	1.0
TA Seeds	TS1139R2	46.3	10.0	66	1.0
AVG.		52	9.98	68.8	1.0
LSD 0.05		6.8	0.38	71	NS

Table 3. Yield, seed moisture, height, and lodging score of Group I Roundup Ready soybean varieties harvested at Lima, NY on 4 October, 2012.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	HEIGHT	LODGING
		bu/acre	%	cm	1-5 scale
GROWMARK FS	13A11	55.7	19.6	85	1.1
GROWMARK FS	15A11	54.9	19.9	80	1.1
Doebler's	RPMD1711	54.7	20.2	88	1.2
SeedWay	SG1711	50.9	20.0	74	1.0
SeedWay	SG1513	50.8	19.6	81	1.1
DynaGro	S18RY33	49.8	19.8	80	1.1
SeedWay	SG1911	49.6	21.2	76	1.1
Mycogen	5N180RR2	49.1	20.7	79	1.1
TA Seeds	TS1139R2	48.4	19.6	77	1.1
Syngenta	S17-G8	47.7	19.6	82	1.0
SeedWay	SG1311	46.9	19.0	77	1.0
GROWMARK FS	17A12	46.6	19.2	64	1.0
Syngenta	S10-G7	46.6	19.0	75	1.1
Doebler's	RPMD1212	44.8	17.9	70	1.0
TA Seeds	TS1719R2	42.2	19.8	65	1.0
AVG.		49.3	19.66	76.8	1.05
LSD 0.05		6.4	1.24	8.3	NS

Table 4. Yield, seed moisture, height, and lodging score of Group II Roundup Ready soybean varieties harvested at Aurora, NY on 25 September, 2012.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	HEIGHT	LODGING
		bu/ac	%	cm	1-5 scale
GROWMARK FS	20A12	64.3	11.1	87	1.2
Mycogen	5N210RR2	64.0	11.5	92	1.3
Syngenta	S20-Y2	63.3	11.3	82	1.1
DynaGro	31RY20	62.2	11.3	88	1.2
TA Seeds	TS2229R2	61.9	11.4	83	1.2
Channel	2306R2	61.5	12.1	97	1.3
GROWMARK FS	24A12	61.4	12.7	96	1.4
SeedWay	SG2410	60.2	12.2	97	1.3
Syngenta	S21-N6	60.2	11.4	85	1.2
GROWMARK FS	21A12	59.7	11.2	83	1.2
Doebler's	RPMDB2612	59.5	11.6	94	1.2
SeedWay	SG2111	59.4	11.3	87	1.1
GROWMARK FS	28A12	58.9	12.4	89	1.2
Channel	2505R2	58.7	12.0	90	1.4
SeedWay	SG2013	58.7	11.1	81	1.1
Channel	2105R2	58.6	11.1	92	1.1
Doebler's	RPMDB2812	58.4	12.0	88	1.3
TA Seeds	TS2890R	57.5	12.2	90	1.2
TA Seeds	TS2529R2	57.3	13.4	101	1.3
Syngenta	S28-K1	57.2	12.2	93	1.2
DynaGro	S27RY03	56.6	11.6	81	1.2
Channel	2705R2	56.3	13.2	99	1.4
Channel	2305R2	55.0	11.2	82	1.2
DynaGro	S24RY73	55.0	11.3	89	1.4
DynaGro	38B21	54.8	11.3	79	1.1
Syngenta	S24-K2	54.1	12.0	83	1.4
Doebler's	RPMDB2212	53.3	11.0	82	1.1
AVG.		58.8	11.73	88.4	1.23
LSD 0.05		5	1.0	NS	5

Table 5. Yield, seed moisture, height, and lodging score of Group II Roundup Ready soybean varieties harvested at Lima, NY on 4 October, 2012.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	HEIGHT	LODGING
		bu/acre	%	cm	1-5 scale
GROWMARK FS	20A12	64.4	18.4	85	1.0
GROWMARK FS	21A12	63.7	19.5	81	1.0
Channel	2305R2	63.5	20.3	89	1.2
Syngenta	S28-K1	62.5	22.5	103	1.6
Doebler's	RPMDB2212	62.3	18.4	97	1.2
DynaGro	31RY20	62.2	18.4	88	1.2
Syngenta	S20-Y2	61.5	18.6	89	1.1
SeedWay	SG2013	60.9	18.1	87	1.2
SeedWay	SG2111	60.5	19.4	80	1.0
Syngenta	S21-N6	60.5	19.3	95	1.3
TA Seeds	TS2229R2	59.7	20.3	89	1.1
Doebler's	RPMDB2612	57.7	22.1	95	1.4
Mycogen	5N210RR2	57.5	19.5	87	1.1
DynaGro	38B21	57.3	19.3	91	1.1
TA Seeds	TS2529R2	57.1	21.8	104	2.1
GROWMARK FS	28A12	56.4	21.9	100	2.1
SeedWay	SG2410	55.9	20.2	100	1.3
Channel	2306R2	55.4	19.8	87	1.0
TA Seeds	TS2890R	55.1	21.5	97	1.3
GROWMARK FS	24A12	54.4	20.4	91	1.2
DynaGro	S24RY73	54.0	20.3	90	1.1
Channel	2705R2	52.4	23.8	100	1.6
Doebler's	RPMDB2812	51.8	23.7	92	1.3
Channel	2505R2	50.2	20.5	85	1.2
DynaGro	S27RY03	50.0	21.4	88	1.7
Syngenta	S24-K2	49.7	19.8	87	1.4
AVG.		57.6	19.66	76.8	1.05
LSD 0.05		6.4	1.24	8.3	NS

Table 6. Yield, seed moisture, height, and lodging score of Group I/II Roundup Ready soybean varieties harvested at Chazy, NY on 25 October, 2012.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	HEIGHT	LODGING
		bu/ac	%	cm	1-5 scale
GROWMARK FS	21A12	98.3	12.6	90	1.0
TA Seeds	TS2229R2	96.3	12.4	98	1.0
SeedWay	SG1911	93.4	12.4	88	1.0
GROWMARK FS	17A12	93.4	12.3	85	1.0
Channel	1805R2	92.6	12.2	94	1.0
Syngenta	S20-Y2	92.5	12.3	98	1.0
GROWMARK FS	20A12	91.9	12.2	92	1.0
Channel	2105R2	91.7	12.7	105	1.0
SeedWay	SG2111	91.6	12.7	87	1.0
Syngenta	S21-N6	91.3	12.9	95	1.0
SeedWay	SG2013	90.0	12.3	83	1.0
Mycogen	5N210RR2	89.6	12.6	91	1.0
DynaGro	31RY20	89.3	12.3	96	1.0
GROWMARK FS	13A11	89.2	12.1	82	1.0
DynaGro	38B21	88.5	12.6	97	1.0
Mycogen	5N180RR2	85.4	12.2	76	1.0
DynaGro	S18RY33	84.9	12.3	74	1.0
TA Seeds	TS1719R2	83.9	12.2	74	1.0
SeedWay	SG1711	83.0	12.3	87	1.0
Syngenta	S17-G8	81.7	12.3	75	1.0
SeedWay	SG1311	80.7	12.0	85	1.0
GROWMARK FS	15A11	80.4	12.3	89	1.0
SeedWay	SG1513	80.2	12.1	91	1.0
Doebler's	RPMDB2212	75.3	13.4	98	1.0
Syngenta	S10-G7	74.2	12.7	78	1.0
TA Seeds	TS1139R2	73.5	12.5	78	1.0
Channel	0906R2	73.3	12.2	71	1.0
AVG.		85.1	12.37	86.1	1.0
LSD 0.05		9.5	0.45	6.2	NS

