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2009 NEW YORK STATE SOYBEAN VARIETY YIELD TESTS

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SOYBEAN VARIETY YIELD TESTS IN 2009

Introduction

The annual testing of soybean varieties was conducted at four locations in New York in 2009. Roundup Ready varieties in Maturity Groups I and II were planted at three locations, including the the Aurora Research Farm in Cayuga Co., the Henry Everman Farm just north of Dansville in Livingston Co., and the Ron Robbin's farm in Sackets Harbor in Jefferson Co. The Aurora and Dansville sites, which are in central/western NY, average about 2450 growing degree days (GDD, 86-50^{o} system) from May through September; whereas the Sackets Harbor site in Northern NY averages about 2200 GDD. Also, mostly Group I varieties were tested at the Miner Institute at Chazy in Clinton Co. in Northern NY, which also averages 2200 GDD during the growing season. 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 at which sites they wanted their varieties to be tested.

We planted Group I and Group II entries in separate tests at Aurora on 11 May, in separate tests at Dansville on 15 May, and in separate tests at Sackets Harbor on 21 May. We planted mostly Group I entries at Chazy on 29 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 (Almaco) at a seeding rate 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 WeatherMax about 5 weeks after planting for weed control at all sites. Aphid numbers and white mold was low throughout the year except at the Dansville site where the grower sprayed for both pests in July. All varieties at all sites were monitored for phenological development beginning in early September.

Yields were determined by harvesting an 18-foot section of the seven center rows of each plot at all sites with a small plot combine (Hege). 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 and Group II tests were harvested at Aurora on 25 September, at Dansville on 8 October, and at Sackets Harbor on 12 October. The test at the Chazy site was harvested on 3 November. All soybeans were cleaned with a small clipper seed cleaner and tested for 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.

Aurora and Dansville

Exceptionally cool conditions in June and July characterized the 2009 growing season at both locations with close to 50-75 GDD below normal in both months at each site, which contributed to total GDD from May through September of about 100 GDD below normal (Table 1). Aurora was somewhat dry from 1 July through mid-August and warm in August (40 GDD above normal), which probably reduced yields somewhat, especially for the Group I varieties. In contrast, the Dansville site received timely rains during July and August, which resulted in relatively high yields for both maturity groups. Group I soybeans averaged 41 bu/acre and Group II varieties averaged 50 bu/acre at the Aurora site. At the Dansville site, Group I varieties averaged 55 bu/acre and Group II averaged 60 bu/acre.

Group I varieties attained the R 8.0 growth stage (full maturity) mostly between 10 and 15 September at the Aurora site with a few notable exceptions. AG0808, a Group 0 variety from Asgrow, attained the R 8.0 stage on 5 September, despite the exceptionally cool growing season. Also, TS1209R from T.A. Seeds, AG1403 from Asgrow, S09-N6, an NK brand Group 0 variety, AG1102 from Asgrow, HS 11R46 from Hyland Seeds, and SG1405 from Seedway, all attained the R 8.0 stage before 10 September. At Dansville, Group I varieties attained the R 8.0 stage between 15 and 20

September, except for S09-N6, HS 11R46, TS1209R, HS 122aRR from GROWMARKFS, and SG1405, which attained the R 8.0 stage before 14 September.

When averaged across sites, SG1717 from Seedway, HS 199RR from GROWMARK FS, TS1440R from T.A. Seeds, S19-A6, an NK brand, and TS1780R from T.A. Seeds had above-average yields in the Group l tests (Tables 2 and 3). In addition, AG0808, once again yielded above-average at Aurora as did AG1102. Neither of these varieties, however, was entered at the Dansville site. Also, S13-A4, an NK Brand, yielded above-average at Aurora. At Dansville, HS 122aRR, an early Group I variety, yielded above-average.

Most Group II soybean varieties attained the R 8.0 growth stage by 20 September at Aurora except for 37T26 from Dyna-Gro, AG2204 and AG2606 from Asgrow, TS2890R from T.A. Seeds, S25-R3, an NK brand, and HS 2766 from GROWMARK FS. These varieties did attain the R 8.0 stage by 23 September. At Dansville, all Group II varieties had attained the R 8.0 stage by 1 October.

When averaged across sites, AG2002 from Asgrow, HS 2766, AG2606, V25N9RR from Dyna-Gro, S24-J1, an NK Brand, HS 20R80 from GROWMARK FS, S21-N6 and S20-P3, NK brands, and TS2490R from T.A. Seeds had above-average yields in the Group II tests (Tables 4 and 5). Also, TS2190R from T.A. Seeds, SG2409R2 from Seedway, and AG2430 from Asgrow had above-average yields at Aurora. At Dansville, TS2890R, 38G23 from Dyna-Gro, and AG2204 had above-average yields.

Chazy and Sackets Harbor

The 2009 growing season in Northern NY was similar to that in central/western NY for temperatures but somewhat different for precipitation patterns (Table 1). Both sites were exceedingly cool in June and July, which contributed to total GDD from 1 May

through September of about 150 less than normal at both sites. Unlike central NY, however, both sites were exceptionally dry in August and September. The Chazy site was spared a September frost, but a light frost occurred at Sackets Harbor on 20 September, which singed the upper leaves of the Group II varieties. Nevertheless, the Group II varieties had an average yield of 48 bu/acre compared with 44 bu/acre for Group I varieties at Sackets Harbor, whereas the mostly Group I varieties had an average yield of 57 bu/acre at Chazy.

Most Group I varieties attained the R 8.0 stage by September 20 at the Sackets Harbor site before the light frost. At Chazy, not all the varieties attained the R 8.0 stage before a frost in early October. The varieties, which had attained the R 8.0 stage at Chazy by 28 September, included AG0808 (19 September), AG1102, AG1403, HS 122aRR, TS1209R, HS 11R46, SG1405, and SG1727.

When averaged across sites, SG1405, TS1209R, SG1727, AG0808, TS1780R, TS1440R, and HS 122aRR had above-average yields in the Group l tests (Tables 6 and 7). At Chazy, AG1403 and AG1102 also had above-average yields.

At Sackets Harbor, SG2409R2 from Seedway, TS2190R from T.A. Seeds, HS 24A90 from GROWMARK FS, and AG2202 from Asgrow had above-average yields in the Group II tests (Table 8). Although these Group II varieties received a light frost before attaining the R 8.0 stage, the highest yielding three varieties yielded above the highest yielding variety in the Group I maturity group, all of which attained the R 8.0 stage before the light frost. The Group II varieties at Chazy, except for HS 20R80, yielded below the average of the test.

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Conclusion

Soybean acreage increased to over 250,000 in New York in 2009. If the current price remains above $9/ bushel, we expect soybean acreage in New York to increase

once again 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 2010 tests. We appreciate your support in 2009.

Table 1. Monthly precipitation and growing degree days (GDD) at Aurora, Dansville, Chazy, and Sackets Harbor during the 2009 growing season.

	Precipitation				GDD (86-50 F)			
Month	**Aurora**	**Dansville**	**Chazy***	**Sackets Harbor****	**Aurora**	**Dansville**	**Chazy***	**Sackets Harbor****
May	3.77	2.76	3.17	4.98	330	366	255	253
June	4.75	4.11	2.49	1.24	454	465	416	394
July	2.43	3.40	3.81	3.46	555	551	522	522
August	3.64	3.35	2.30	1.89	642	634	580	588
Sept.	2.61	0.69	2.20	1.92	364	394	293	345
Seasonal	**17.20**	**14.31**	**13.97**	**13.49**	**2345**	**2410**	**2066**	**2102**

* GDD data is from Plattsburg
** Sackets Harbor data is from Watertown

Table 2. Yield, seed moisture, lodging score, and height of Group I Roundup Ready soybean varieties harvested at Aurora, NY on 25 September, 2009.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		bu/ac	%	1-5 rating	cm
Seedway	SG1727	47	14.20	1.0	79
Asgrow	AG1102	46	14.20	1.0	76
Asgrow	AG0808	44	13.23	1.0	85
T.A. Seeds	TS1440R	43	14.10	1.0	79
NK BRAND	S13-A4	43	13.83	1.0	76
NK BRAND	S19-A6	42	14.60	1.0	78
T.A. Seeds	TS1780R	42	13.80	1.0	82
T.A. Seeds	TS1209R	41	13.88	1.0	72
Mycogen	5B193RR	41	14.40	1.0	75
GROWMARK FS	HS199RR	40	14.58	1.0	78
Hyland Seeds	HS 11R46	40	13.83	1.0	76
GROWMARK FS	HS122aRR	39	13.88	1.0	80
NK BRAND	S09-N6	39	13.53	1.0	72
Seedway	SG1405	38	13.43	1.0	77
Asgrow	AG1403	38	14.00	1.0	66
Avg.		**41**	**13.97**	**1.0**	**77**
LSD 0.05		**6**	**0.5**	**NS**	**4**

Table 3. Yield, seed moisture, lodging score, and height of Group I Roundup Ready soybean varieties harvested at Dansville, NY on 8 October, 2009.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		bu/ac	%	1-5 rating	cm
GROWMARK FS	HS 199RR	63	13.78	1.00	86
Seedway	SG1727	60	13.15	1.00	82
T.A. Seeds	TS1440R	59	13.75	1.00	93
NK BRAND	S19-A6	59	13.40	1.00	84
GROWMARK FS	HS 122aRR	57	13.38	1.00	90
T.A. Seeds	TS1780R	55	13.70	1.00	91
Seedway	SG1405	53	13.50	1.38	87
T.A. Seeds	TS1209R	53	15.25	1.00	69
Mycogen	5B193RR	53	13.95	1.00	74
Hyland Seeds	HS 11R46	53	13.85	1.00	85
NK BRAND	S09-N6	52	13.83	1.00	78
NK BRAND	S13-A4	49	14.20	1.00	79
Hyland Seeds	HS 23R55	49	13.40	1.00	85
Avg.		**55**	**13.78**	**1.03**	**83**
LSD 0.05		**7**	**1.0**	**0.3**	**8**

Table 4. Yield, seed moisture, lodging score, and height of Group II Roundup Ready soybean varieties harvested at Aurora, NY on 25 September, 2009.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		bu/ac	%	1-5 rating	cm
GROWMARK FS	HS 20R80	57	13.75	1.0	84
NK BRAND	S24-J1	57	13.90	1.0	80
Asgrow	AG2002	56	14.28	1.0	91
T.A. Seeds	TS2190R	53	13.60	1.0	84
Seedway	SG2409R2	53	13.90	1.0	88
GROWMARK FS	HS 2766	53	13.45	1.0	106
Asgrow	AG2430	53	15.80	1.0	86
NK BRAND	S21-N6	52	14.68	1.0	79
NK BRAND	S20-P3	52	14.05	1.0	87
Dyna-Gro.	V25N9RR	51	13.40	1.0	84
T.A. Seeds	TS2490R	50	13.75	1.0	80
Seedway	SG2205	50	13.85	1.0	80
Asgrow	AG2406	50	13.60	1.0	88
GROWMARK FS	HS 24A90	49	13.28	1.0	85
Asgrow	AG2606	49	15.93	1.0	90
Hyland Seeds	HS 23R55	48	16.58	1.0	81
Seedway	SG2018	48	13.55	1.0	79
GROWMARK FS	HS 217RR	47	13.43	1.0	70
NK BRAND	S25-R3	47	13.95	1.0	78
Asgrow	AG2204	47	16.65	1.0	72
Dyna-Gro.	V20N8RR	46	17.00	1.0	76
T.A. Seeds	TS2890R	45	23.28	1.0	92.
Dyna-Gro.	37T26	43	22.53	1.0	94
Dyna-Gro.	38G23	43	18.00	1.0	82
Mycogen	5N222RR	40	15.43	1.0	71
Avg.		**50**	**17.0**	**1.0**	**84**
LSD 0.05		**7**	**1.9**	**NS**	**6**

Table 5. Yield, seed moisture, lodging score, and height of Group II Roundup Ready soybean varieties harvested at Dansville, NY on 8 October, 2009.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		bu/ac	%	1-5 rating	cm
GROWMARK FS	HS 2766	70	17.76	1.82	121
Asgrow	AG2606	69	14.22	1.14	100
Asgrow	AG2002	67	13.40	1.00	91.
Dyna-Gro	V25N9RR	66	12.96	1.00	94
T.A. Seeds	TS2890R	64	15.34	1.00	93
T.A. Seeds	TS2490R	64	13.42	1.00	88
Dyna-Gro	38G23	62	13.72	1.00	92
Asgrow	AG2204	62	13.72	1.00	86
NK BRAND	S21-N6	62	13.96	1.00	91
NK BRAND	S20-P3	61	14.52	1.46	100
Seedway	SG2205	60	13.42	1.00	83
Dyna-Gro	V20N8RR	60	12.86	1.00	89
GROWMARK FS	HS 217RR	60	12.74	1.00	84.
GROWMARK FS	HS 24A90	59	14.34	1.00	92
NK BRAND	S24-J1	59	13.12	1.00	92
Seedway	SG2409R2	58	13.66	1.00	92
Asgrow	AG2430	58	14.62	1.00	95
GROWMARK FS	HS 20R80	58	14.02	1.16	93
Dyna-Gro	37T26	57	18.46	1.56	106
Asgrow	AG2406	57	14.30	1.00	93
T.A. Seeds	TS2190R	56	13.36	1.60	91
Seedway	SG2018	56	12.86	1.00	95
NK Brand	S25-R3	55	14.16	1.00	91
Mycogen	5N222RR	54	13.34	1.00	77
Hyland Seeds	HS 23R55	54	13.40	1.00	85
Avg.		**60**	**14.0**	**1.12**	**93**
LSD 0.05		**7**	**1.1**	**0.5**	**6**

Table 6. Yield, seed moisture, lodging score, and height of Group I Roundup Ready soybean varieties harvested at Sackets Harbor, NY on 12 October, 2009.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		bu/ac	%	1-5 rating	cm
Seedway	SG1405	49	14.20	1.00	64
T.A. Seeds	TS1780R	48	14.23	1.00	63
T.A. Seeds	TS1440R	47	14.75	1.00	61
T.A. Seeds	TS1209R	46	14.65	1.00	57
Seedway	SG1727	45	14.15	1.00	58
GROWMARK FS	HS 122aRR	45	14.13	1.00	60
Asgrow	AG1102	43	13.68	1.00	58
Asgrow	AG0808	42	14.15	1.00	57
Asgrow	AG1403	40	14.55	1.00	53
Hyland Seeds	HS 11R46	38	14.68	1.00	55
GROWMARK FS	HS 199RR	38	14.43	1.00	57
Avg.		**44**	**14.3**	**1.00**	**58**
LSD 0.05		**5**	**0.4**	**NS**	**5**

Table 7. Yield, seed moisture, lodging score, and height of Group I Roundup Ready soybean varieties harvested at Chazy, NY on 3 November, 2009.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		bu/ac	%	1-5 rating	cm
Asgrow	AG0808	62	14.98	1.0	90
Seedway	SG1727	61	15.00	1.0	76
T.A. Seeds	TS1209R	60	15.48	1.0	75
Asgrow	AG1403	59	15.05	1.0	72
Asgrow	AG1102	58	15.70	1.0	74
GROWMARK FS	HS 20R80	58	17.18	1.0	82
GROWMARK FS	HS 122aRR	58	15.20	1.0	83
Hyland Seeds	HS 11R46	58	16.18	1.0	84
Seedway	SG1405	57	14.95	1.0	88
GROWMARK FS	HS 199RR	57	18.43	1.0	79
Asgrow	AG2002	57	18.28	1.0	92
T.A. Seeds	TS1440R	56	14.85	1.0	82
T.A. Seeds	TS1780R	55	16.95	1.0	83
GROWMARK FS	HS 217RR	51	17.55	1.0	72
Avg.		**57**	**16.12**	**1.0**	**81**
LSD 0.05		**8**	**1.1**	**NS**	**5**

Table 8. Yield, seed moisture, lodging score, and height of Group II Roundup Ready soybean varieties harvested at Sackets Harbor, NY on October 12, 2009.

COMPANY/BRAND	VARIETY	YIELD	MOISTURE	LODGING	HEIGHT
		bu/acre	%	1-5 rating	cm.
Seedway	SG2409R2	54	14.30	1.0	67
T.A. Seeds	TS2190R	49	14.43	1.0	60
GROWMARK FS	HS 24A90	49	14.53	1.0	60
Asgrow	AG2204	49	14.30	1.0	61
Hyland Seeds	HS 23R55	48	14.03	1.00	58
T.A. Seeds	TS2890R	48	15.08	1.0	68
Asgrow	AG2002	48	14.33	1.0	66
Asgrow	AG2430	48	14.58	1.0	62
T.A. Seeds	TS2490R	48	14.83	1.0	64
Seedway	SG2205	48	14.45	1.0	63
Seedway	SG2018	48	14.35	1.0	60
GROWMARK FS	HS 20R80	48	14.65	1.0	66
GROWMARK FS	HS 217RR	46	14.05	1.0	61
Dyna-Gro	V20N8RR	46	14.60	1.0	61
Dyna-Gro	38G23	43	14.18	1.0	60
Avg.		**48**	**14.47**	**2.7**	**62**
LSD 0.05		**5**	**0.9**	**0.3**	**6**