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**2007 NEW YORK STATE SOYBEAN
VARIETY YIELD TESTS**

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SOYBEAN VARIETY YIELD TESTS IN 2007

Introduction

The annual testing of soybean varieties was conducted at four locations in New York in 2007. Roundup Ready varieties in Maturity Groups I and II were planted at two locations in central/western New York, the Aurora Research Farm in Cayuga Co. and on the Henry Everman Farm just north of Dansville in Livingston Co. Roundup Ready varieties in Maturity Group I were tested at two locations in Northern New York, the Miner Institute at Chazy in Clinton Co. and on Ron Robbin's farm in Sackets Harbor in Jefferson Co. We also tested two Group II varieties at Sackets Harbor and Chazy. 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.

We planted Group I and Group II entries in separate tests at Aurora on 14 May and in separate tests at Dansville on 18 May. We planted separate Group I and II varieties in the same test at Sackets Harbor on 22 May and in the same test at Chazy on 23 May. We planted Group I and II varieties in the same tests at Sackets Harbor and Chazy because of the low number of Group II varieties submitted for these sites. Each individual plot at all sites consisted of ten 20-ft. rows spaced 7 inches apart. Each entry was planted at a seeding rate of 200,000 seeds/acre with four replications at Aurora, five replications at Dansville, six replications at Sackets Harbor and five replications at Chazy. 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. All varieties at Aurora were monitored for aphids on during July and the first half of August. Aphid numbers on some varieties were quite high in some replications but averaged less than 250/plant on all varieties at each date. The Dansville site received an application of Warrior in late 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 Hege small plot combine. Plant height and lodging scores (1.0 - 5.0 rating with 1.0= no lodging and 5.0=complete lodging) were taken at harvest. Group I and II tests were harvested on 21 September at the Aurora site. Group I and Group II tests were harvested on 16 October at the Dansville site. The Group I and II varieties were harvested on 17 October at Sackets Harbor and on 23 October at the Chazy site. 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, height, lodging, and seed moisture. All means were separated by Fisher's protected LSD (0.05) when significance occurred.

Aurora and Dansville

The 2007 growing season at both locations was warmer and much drier than normal (Table 1). At Aurora, only 7.91 inches of precipitation was recorded from 1 May through 7 September with all months averaging 1.0 to 2.5 inches below normal. Also, all months, except July, had above average GDD. The Aurora site received about 2.0 inches of precipitation on 8 September but the soybeans had attained the R6 (leaves beginning turn yellow) or beyond growth stage in both tests. At Dansville, only 8.13 inches of precipitation were recorded from 1 May through 7 September. Also, all months, except July, had above-average GDD. Despite the exceptionally dry growing season, I soybean yields averaged 64 bu/acre in the Group I and 68 bu/acre in the Group II tests on the deep soil in Dansville. In contrast, soybean yields averaged only 33 bu/acre in the Group I and 35 bu/acre in the Group II studies on the shallower soils at Aurora.

When averaged across sites, AG1802 from Asgrow, HS 122aRR from GROWMARK FS, SG1405 from Seedway, TS1880R from T.A. Seeds, AG1903 from Asgrow, and EX1207 from GROWMARK FS yielded above-average in the Group I tests (Tables 2 and 4). A strong site x variety interaction was observed, however in the Group

I tests. All these varieties had above-average yields at the high-yielding Dansville site but only AG1802 and TS1440R also had above-average yields at the low-yielding Aurora site. Obviously, both varieties have excellent yield stability to achieve above-average yields at both sites. The varieties, HS199 from Growmark FS and SG1727 from Seedway also had above-average yields at Dansville. At Aurora, HS 188RR from GROWMARK FS and EXP 1408 from Seedway had above-average yields at Aurora.

When average across sites, AG2002 from Asgrow, S24-J1, an NK brand, AG 2204 from Asgrow, 35C23, 34K22, and 31D20 from UAP, and AG2802 from Asgrow yielded above-average in the Group II tests (Tables 3 and 5). A strong site x variety interaction, however, was also observed in the Group II test. Only AG2002, AG2204, S24-J1, and 34K22 had above-average yields at both sites. The varieties, 35C23, SG2205 from Seedway, TS2560R from T.A. Seeds, and 33D27 from UAP also had above-average yields at Dansville. At Aurora, S21-N6, an NK brand, 31D20, and AG2403 from Asgrow also had above-average yields.

Chazy and Sackets Harbor

The 2007 growing season in Northern NY was more favorable for soybean growth at Chazy compared with Sackets Harbor (Table 1). Temperatures were ideal throughout most of the growing season at both sites. At Chazy, however, moisture conditions were almost perfect for soybean growth until late August when somewhat dry conditions set in. Nevertheless, soybean yields were excellent at Chazy. In contrast, the very dry conditions at Sackets Harbor in August and September resulted in low yields.

When averaged across sites, AG1802 from Asgrow, EXP1408 from Seedway, TS1880R from T.A. Seeds, EXP1428 from Seedway, HS 122aRR from GROWMARK FS, and EX1701 from GROWMARK FS yielded above-average in the Group I tests (Tables 6 and 7). These varieties thus exhibited excellent yield stability across the high-

yielding Chazy and the droughty Sackets Harbor sites. The variety, AG1802, yielded exceptionally high at Chazy as did EXP1408, TS1880R, HS 217RR, and SG1727. At Sackets Harbor, TS1440R and TS1880R yielded exceptionally well in the dry conditions.

The Group II varieties, HS 217RR and AG2002 yielded above-average at Chazy and Sackets Harbor (Tables 6 and 7). The variety, HS 217RR, in particular, showed excellent yield stability in the high and low-yielding tests in northern NY.

Conclusion

Soybean acreage increased to about 220,000 in New York in 2007. With the current price above \$11/ bushel for the January contract in Chicago, we expect soybean acreage to increase further 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 consider entering more varieties for the 2008 tests. Thank-you for your support in 2007.

Table 1. Monthly precipitation and growing degree days (GDD) at Aurora, Dansville, Chazy, and Sackets Harbor during the 2006 growing season.

Month	Precipitation				GDD (86-50 F)			
	Aurora	Dansville	Chazy*	Sackets Harbor**	Aurora	Dansville	Chazy*	Sackets Harbor**
May	0.94	0.72	2.42	1.44	386	398	318	325
June	2.33	1.55	3.80	1.35	577	579	541	558
July	2.77	3.87	2.58	3.58	593	605	555	597
August	1.87	1.99	2.90	1.04	649	653	568	587
Sept.	3.83	2.51	2.12	1.39	466	474	437	433
Seasonal	11.74	19.64	13.82	8.80	2671	2709	2419	2500

* July-September data is from Peru

** Sackets Harbor data is from Watertown

Table 2. Yield, height, lodging score, and seed moisture of Group I Roundup Ready soybean varieties harvested at Aurora, NY on September 21, 2007.

VARIETY	BRAND	YIELD	HEIGHT	LODGING	MOISTURE
		<u>bu/acre</u>	<u>in</u>	<u>score(1-5)</u>	<u>%</u>
Ag1802	Asgrow	40	26	1.05	11.5
TS1440R	T.A. Seeds	36	27	1.00	11.8
HS 188 RR	GROWMARK FS	35	24	1.00	11.5
EXP1408	Seedway	33	25	1.00	11.9
EX 1207	GROWMARK FS	33	23	1.00	11.0
S19-R5	NK	33	25	1.00	11.2
EX1707	GROWMARK FS	32	26	1.00	11.2
SG1727	Seedway	32	24	1.00	11.5
EXP1428	Seedway	32	21	1.00	11.2
TS1880R	T.A. Seeds	31	23	1.00	11.6
HS 122aRR	GROWMARK FS	31	24	1.00	11.3
EXP1708	Seedway	31	27	1.00	11.9
AG1903	Asgrow	31	25	1.00	11.7
SG1405	Seedway	30	25	1.00	11.1
HS 199RR	GROWMARK FS	29	22	1.00	12.4
Avg.		33	25	1.00	11.5
LSD 0.05		6	4	0.04	1.6

Table 3. Yield, height, lodging score, and seed moisture of Group II Roundup Ready soybean varieties harvested at Aurora, NY on September 21, 2007.

VARIETY	BRAND	YIELD	HEIGHT	LODGING	MOISTURE
		<u>D</u>			
		<u>bu/a</u> <u>cre</u>	<u>in</u>	<u>score (1-5)</u>	<u>%</u>
S21-N6	NK	41	25	1.00	11.3
AG2002	Asgrow	39	28	1.00	10.9
AG2802	Asgrow	39	31	1.05	15.8
S24-J1	NK	38	26	1.00	12.6
31D20	UAP	38	26	1.00	11.2
AG2403	Asgrow	38	24	1.00	14.2
AG2204	Asgrow	37	24	1.00	11.9
34K22	UAP	36	25	1.00	12.6
33D27	UAP	35	29	1.00	18.2
AG2606	Asgrow	35	25	1.00	16.1
35C23	UAP	35	27	1.00	13.1
92M02	Check	31	25	1.00	11.6
SG2205	Seedway	31	21	1.00	12.1
HS 217RR	GROWMARK FS	31	22	1.00	12.1
TS2560R	T.A. Seeds	29	24	1.00	18.3
Avg.		35	25	1.00	13.6
LSD 0.05		5	2	0.04	1.9

Table 4. Yield, height, lodging score, and seed moisture of Group I Roundup Ready soybean varieties harvested at Dansville, NY on October 16, 2007.

VARIETY	BRAND	YIELD	HEIGHT	LODGING	MOISTURE
		<u>bu/acre</u>	<u>in</u>	<u>score (1-5)</u>	<u>%</u>
HS 122aRR	GROWMARK FS	74	46	3.56	14.7
SG1405	Seedway	74	47	3.74	14.6
AG1903	Asgrow	68	42	2.44	14.5
HS 199RR	GROWMARK FS	68	42	2.22	14.9
TS1440R	T.A. Seeds	66	43	3.92	14.5
EX1207	GROWMARK FS	65	41	1.88	15.2
AG1802	Asgrow	65	41	2.26	15.2
SG1727	Seedway	65	42	3.20	15.2
EX1707	GROWMARK FS	63	42	2.76	13.0
HS 188RR	GROWMARK FS	62	40	2.80	15.1
EXP1428	Seedway	61	38	1.78	15.1
EXP1408	Seedway	59	42	3.14	14.9
S19-R5	NK	57	42	2.34	14.7
EXP1708	Seedway	55	42	2.62	14.6
Avg.		64	42	2.76	14.7
LSD 0.05		10	2	0.97	0.7

Table 5. Yield, height, lodging score, and seed moisture of Group II Roundup Ready soybean varieties harvested at Dansville, NY on October 16, 2007.

VARIETY	BRAND	YIELD	HEIGHT	LODGING	MOISTURE
		<u>bu/acre</u>	<u>in</u>	<u>score (1-5)</u>	<u>%</u>
35C23	UAP	74	42	2.18	14.8
AG2002	Asgrow	74	43	1.86	14.4
AG2204	Asgrow	72	44	1.70	15.1
S24-J1	NK	72	44	2.92	16.5
SG2205	Seedway	72	40	1.72	15.1
34K22	UAP	71	43	1.72	14.8
TS2506R	T.A. Seeds	71	42	1.88	15.5
33D27	UAP	69	48	3.56	17.0
AG2802	Asgrow	68	48	3.40	16.9
HS 217RR	GROWMARK FS	68	40	2.12	14.6
31D20	UAP	67	43	3.08	13.8
TS1880R	T.A. Seeds	65	41	2.04	15.4
AG2606	Asgrow	65	49	3.42	15.0
AG2403	Asgrow	63	39	1.52	14.3
92M02	Check	62	44	1.68	14.5
S21-N6	NK	61	42	2.44	14.3
Avg.		68	44	2.32	15.2
LSD 0.05		10	3	0.9	1.1

Table 6. Yield, height, lodging score, and seed moisture of Group I and Group II Roundup Ready soybean varieties harvested at Chazy, NY on November 13, 2007.

VARIETY	BRAND	YIELD	HEIGHT	LODGING	MOISTURE
		<u>bu/acre</u>	<u>in</u>	<u>score (1-5)</u>	<u>%</u>
AG1802	Asgrow	80	40	1.00	14.9
EXP1408	Seedway	76	39	1.00	12.9
TS1880R	T.A. Seeds	75	36	1.00	13.2
HS 217RR	GROWMARK FS	75	38	1.83	13.0
SG1727	Seedway	75	40	2.50	13.2
EX1707	GROWMARK FS	74	43	2.50	13.2
TS1440R	T.A. Seeds	74	41	1.83	12.8
EXP1428	Seedway	72	39	1.00	13.0
EX1207	GROWMARK FS	71	40	1.83	13.5
AG2002	Asgrow	70	45	1.00	13.5
HS 122aRR	GROWMARK FS	70	45	1.00	13.2
HS 199RR	GROWMARK FS	69	39	1.00	13.4
EXP1708	Seedway	68	44	1.00	13.8
HS 188RR	GROWMARK FS	65	38	1.00	13.2
SG1405	Seedway	64	46	2.50	14.4
Avg.		72	41	1.0	13.4
LSD 0.05		9	2	NS	1.7

Table 7. Yield, height, lodging score, and seed moisture of Group I and II Roundup Ready soybean varieties harvested at Sackets Harbor, NY on October 17, 2007.

VARIETY	BRAND	YIELD	HEIGHT	LODGING	MOISTURE
		<u>bu/acre</u>	<u>in</u>	<u>score (1-5)</u>	<u>%</u>
S19-R5	NK	35	29	1.17	12.6
AG2002	Asgrow	35	29	1.03	13.4
HS 217RR	GROWMARK FS	33	26	1.07	13.1
T1440R	T.A. Seeds	33	28	1.12	13.1
TS1880R	T.A. Seeds	32	26	1.02	13.1
EXP1408	Seedway	31	26	1.18	13.5
AG1802	Asgrow	31	27	1.17	13.6
EXP1708	Seedway	31	29	1.10	12.7
EX1707	GROWMARK FS	31	28	1.07	12.9
SG1405	Seedway	29	32	1.05	12.2
HS 122aRR	GROWMARK FS	29	32	1.12	12.7
EX1207	GROWMARK FS	28	26	1.10	12.6
HS 199RR	GROWMARK FS	27	26	1.08	12.8
EXP1428	Seedway	26	25	1.08	13.1
HS 188RR	GROWMARK FS	17	26	1.12	12.1
SG1727	Seedway	17	26	1.07	12.4
Avg.		29	28	1.0	12.9
LSD 0.05		3	2	NS	0.6