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**2006 NEW YORK STATE SOYBEAN
VARIETY YIELD TESTS**

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SOYBEAN VARIETY YIELD TESTS IN 2006

Introduction

The annual testing of soybean varieties was conducted at four locations in New York in 2006. 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 eight Group II varieties at Sackets Harbor. 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 11 May and in separate tests at Dansville on 26 May. We planted separate Group I and II tests at Sackets Harbor on 15 May and a Group I test at Chazy on 25 May. 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 225,000 seeds/acre with four replications at Aurora, five replications at Dansville and six replications at Sackets Harbor and 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 20 July and 10 and 20 August but aphid numbers averaged less than 20/plant on all varieties at each date. All varieties at all sites were monitored for phenological development beginning in late August or early September. The date of the attainment of full maturity (R8.0) of each variety is provided in the tables.

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 varieties were harvested on 3 October and Group II varieties on 10 October at the Aurora site. Group I and Group II varieties were harvested on 16 October at the Dansville site. The Group I and II varieties were harvested on 4 November at Sackets Harbor and the Group I varieties were harvested on 6 November 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, and lodging. All means were separated by Fisher's protected LSD (0.05) when significance occurred.

Aurora and Dansville

The 2006 growing season from May through September was warmer and much wetter than normal at Aurora and Dansville (Table 1). May was a dry month (until the last few days at Aurora) but June through September was one of the wettest 4-month periods on record at both sites (Table 1). The excessive wetness in early July resulted in uneven growth at the Dansville site. Consequently, the tests were more precise at the Aurora site, which has a tile-drain line every 30 feet, compared with the Dansville site in 2006.

Group I varieties averaged 69 bu/acre and Group II varieties averaged 71bu/acre at Aurora (Tables 2 and 3). Group I varieties averaged 55 bu/acre and Group II varieties averaged 60 bu/acre at Dansville (Tables 4 and 5). This is the first time that the Aurora site had greater yields than the western NY site. Undoubtedly, the tile-drainage at the Aurora site contributed to its higher yields in the wet 2006 growing season.

When averaged across sites, EXP1727 and SG1919 from Seedway, AG1903 from Asgrow, TS1880R from T.A. Seeds, EX1906 and 199R from FS Seeds, and S19-R5, an NK Brand, yielded above-average in the Group I tests. All of these varieties,

except S19-R5, yielded above-average at both sites. S19-R5 had the highest numerical yield at Aurora but the fourth lowest numerical yield at Dansville. The low yield of S19-R5 at Dansville could have been associated with the unevenness of growth due to drainage issues, which reduced the precision of the experiment (CV=13.6%). In contrast, the Aurora site had even growth and excellent precision (CV=5.2%).

When average across sites, AG2802, AG2106, and AG2204 from Asgrow, S21-N6 and S24-K4, NK brands, 217RR from FS Seeds, and DKB24-52 from DeKalb yielded above-average in the Group II tests. Despite the excellent precision at the Aurora site (CV=6.4%), 16 of the 20 tested varieties yielded the same. At the Dansville site where there was less precision in the study (CV=11.4%), only AG2204, AG2106, 92M91 (check variety), AG2802, 217RR, DKB24-52, S21-N6, and DKB27-53 from Dekalb yielded the highest. S24-K4, an NK brand, EXP2227 from Seedway, and EX2006 from FS Seeds were in the top five for numerical yield at Aurora but yielded less at Dansville.

Chazy and Sackets Harbor

The 2006 growing season was also warmer than normal at Chazy and Sackets Harbor from May through September (Table 1). Unlike Aurora and Dansville, however, both sites, which were wet in June, turned dry in July and August. Nevertheless, Group I varieties yielded 55 bu/acre at Sackets Harbor and 70 bu/acre at Chazy (Tables 6 and 7). Group II varieties had an average yield of 64 bu/acre at Sackets Harbor (Table 8).

When averaged across sites, S19-R5, an NK brand, TS1880R from T.A. Seeds, 199RR from FS Seeds, AG1903 from Asgrow, and Respond from Hyland yielded above-average in the Group I tests. SG1919 from Seedway had the highest numerical yield at Sackets Harbor but had the second lowest numerical yield at Chazy. The precision of the test at Sackets Harbor was very good (CV=7.6%) and acceptable at Chazy (CV=9.4%) so it is not clear why SG1919 performed differently across sites.

S24-K6, S24-K4, and S21-N6, NK brands, were in the highest yielding group in the Group II test at Sackets Harbor. TS2560R also had above-average yield in this test. Although the Group II varieties averaged 9 bu/acre higher in yield than the Group I varieties at Sackets Harbor, we only recommend Group II varieties in this region of Northern NY because of the shorter growing season throughout most of the Northern NY region.

Conclusion

Soybean acreage increased to about 200,000 in New York and soybean yields averaged 45 bu/acre in 2005, a new state record. We invite all seed companies to enter their varieties at a modest fee in our New York soybean variety testing program. Soybean acreage continues to increase in New York and we wish to provide the ever-increasing number of NY soybean growers the best information on variety selection.

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* | Watertown | Aurora | Dansville | Chazy* | Watertown |
| May | 3.94 | 1.46 | 4.91 | 2.31 | 308 | 331 | 326 | 311 |
| June | 6.25 | 3.95 | 4.92 | 4.48 | 516 | 505 | 488 | 454 |
| July | 5.42 | 6.83 | 2.58 | 1.58 | 733 | 690 | 721 | 676 |
| August | 3.57 | 5.52 | 2.90 | 1.18 | 605 | 578 | 560 | 562 |
| Sept. | 4.86 | 4.43 | 0.94 | 4.90 | 353 | 350 | 297 | 306 |
| Seasonal | 24.04 | 22.29 | 16.25 | 19.35 | 2515 | 2454 | 2392 | 2309 |

* September data is from Plattsburg

Table 2. Yield, height, lodging score, and date of full maturity Group I Roundup Ready soybean varieties at Aurora, NY in 2006.

| VARIETY | BRAND | YIELD | HEIGHT | LODGING | MATURITY |
|----------|------------|----------------|-----------|--------------|-------------|
| | | <u>bu/acre</u> | <u>in</u> | <u>score</u> | <u>date</u> |
| S19-R5 | NK | 77 | 37 | 1.50 | 9/14 |
| EX1906 | FS Seeds | 75 | 37 | 1.50 | 9/18 |
| SG1919 | Seedway | 74 | 39 | 1.38 | 9/18 |
| EXP1727 | Seedway | 73 | 38 | 1.25 | 9/16 |
| 199RR | FS Seeds | 72 | 35 | 1.50 | 9/20 |
| AG1903 | Asgrow | 71 | 39 | 1.50 | 9/17 |
| TS1880R | T.A. Seeds | 70 | 33 | 1.25 | 9/16 |
| Razor | Hyland | 68 | 35 | 1.63 | 9/10 |
| Respond | Hyland | 68 | 39 | 1.50 | 9/17 |
| TS1440R | T.A. Seeds | 64 | 36 | 1.63 | 9/11 |
| 122aRR | FS Seeds | 60 | 36 | 1.75 | 9/8 |
| React | Hyland | 57 | 33 | 1.75 | 9/3 |
| Avg. | | 69 | 36 | 1.51 | |
| LSD 0.05 | | 5 | 2 | 0.44 | |

| Table 3. Yield, height, lodging score, and date of full maturity of Group II Roundup Ready soybean varieties at Aurora, NY in 2006. | | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-----------|--------------|-------------|
| VARIETY | BRAND | YIELD | HEIGHT | LODGING | MATURITY |
| | | <u>bu/acre</u> | <u>in</u> | <u>score</u> | <u>date</u> |
| AG2802 | Asgrow | 76 | 50 | 2.15 | 9/30 |
| S24-K4 | NK | 76 | 44 | 1.85 | 9/21 |
| EXP2227 | Seedway | 75 | 39 | 1.30 | 9/23 |
| S21-N6 | NK | 73 | 37 | 1.30 | 9/17 |
| EX2006 | FS Seeds | 73 | 41 | 1.38 | 9/20 |
| TS2560R | T.A. Seeds | 72 | 44 | 1.83 | 9/27 |
| AG2106 | Asgrow | 72 | 38 | 1.33 | 9/19 |
| 92M91 | Check | 72 | 44 | 1.53 | 9/28 |
| EX2206 | FS Seeds | 72 | 39 | 1.25 | 9/22 |
| SG2205 | Seedway | 72 | 34 | 1.05 | 9/19 |
| DKB24-52 | DeKalb | 71 | 43 | 1.65 | 9/25 |
| EXP2027 | Seedway | 71 | 43 | 1.60 | 9/24 |
| S24-K6 | NK | 71 | 42 | 1.60 | 9/24 |
| EX2506 | FS Seeds | 70 | 50 | 1.75 | 9/25 |
| 217RR | FS Seeds | 70 | 38 | 1.65 | 9/19 |
| TS2250R | T.A. Seeds | 70 | 42 | 1.65 | 9/23 |
| Renwick | Hyland | 69 | 41 | 1.60 | 9/24 |
| DKB27-53 | DeKalb | 68 | 46 | 2.13 | 9/27 |
| AG2204 | Asgrow | 68 | 39 | 1.93 | 9/21 |
| Rodney | Hyland | 67 | 41 | 1.28 | 9/23 |
| Avg. | | 71 | 42 | 1.57 | |
| LSD 0.05 | | 7 | 3 | 0.39 | |

| Table 4. Yield, height, lodging, score, and date of full maturity of Group I Roundup Ready soybean varieties at Dansville, NY in 2006. | | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-----------|--------------|-------------|
| VARIETY | BRAND | YIELD | HEIGHT | LODGING | MATURITY |
| | | <u>bu/acre</u> | <u>in</u> | <u>score</u> | <u>date</u> |
| EXP1727 | Seedway | 65 | 41 | 1.1 | 9/23 |
| AG1903 | Asgrow | 64 | 37 | 1.1 | 9/24 |
| TS1880R | T.A. Seeds | 61 | 37 | 1.0 | 9/24 |
| SG1919 | Seedway | 61 | 39 | 1.1 | 9/25 |
| 91M60 | Check | 59 | 37 | 1.1 | 9/22 |
| 199RR | FS Seeds | 57 | 36 | 1.0 | 9/26 |
| EX1906 | FS Seeds | 56 | 39 | 1.1 | 9/25 |
| S19-R5 | NK | 52 | 37 | 1.1 | 9/22 |
| 122aRR | FS Seeds | 52 | 40 | 1.2 | 9/18 |
| Respond | Hyland | 49 | 39 | 1.0 | 9/22 |
| Razor | Hyland | 48 | 39 | 1.1 | 9/15 |
| React | Hyland | 40 | 33 | 1.0 | 9/12 |
| Avg. | | 55 | 38 | 1.1 | |
| LSD 0.05 | | 8 | 3 | 0.1 | |

Table 5. Yield, height, lodging score, and date of full maturity of Group II Roundup Ready soybean varieties at Dansville, NY in 2006.

| VARIETY | BRAND | YIELD | HEIGHT | LODGING | MATURITY |
|----------|------------|----------------|-----------|--------------|-------------|
| | | <u>bu/acre</u> | <u>in</u> | <u>score</u> | <u>date</u> |
| AG2204 | Asgrow | 70 | 40 | 1.1 | 9/27 |
| AG2106 | Asgrow | 68 | 40 | 1.1 | 9/26 |
| 92M91 | Check | 66 | 46 | 1.2 | 10/02 |
| AG2802 | Asgrow | 65 | 52 | 1.4 | 10/04 |
| 217RR | FS Seeds | 65 | 36 | 1.0 | 9/25 |
| DKB24-52 | DeKalb | 63 | 43 | 1.2 | 9/29 |
| S21-N6 | NK | 63 | 38 | 1.1 | 9/23 |
| DKB27-53 | DeKalb | 63 | 48 | 1.3 | 10/01 |
| SG2205 | Seedway | 60 | 36 | 1.0 | 9/25 |
| EX2506 | FS Seeds | 59 | 48 | 1.2 | 9/30 |
| S24-K4 | NK | 59 | 44 | 1.3 | 9/26 |
| TS2560R | T.A. Seeds | 59 | 42 | 1.1 | 10/01 |
| AG2403 | Check | 59 | 36 | 1.0 | 9/30 |
| S24-K6 | NK | 58 | 42 | 1.1 | 10/01 |
| Rodney | Hyland | 58 | 42 | 1.1 | 9/28 |
| EXP2227 | Seedway | 55 | 41 | 1.1 | 9/24 |
| EX2006 | FS Seeds | 54 | 42 | 1.2 | 9/25 |
| TS2250R | T.A. Seed | 54 | 44 | 1.2 | 9/28 |
| EXP2027 | Seedway | 53 | 44 | 1.2 | 9/25 |
| EX2206 | FS Seeds | 53 | 41 | 1.1 | 9/27 |
| Renwick | Hyland | 49 | 46 | 1.3 | 9/30 |
| Avg. | | 60 | 42 | 1.2 | |
| LSD 0.05 | | 8 | 3 | 0.1 | |

Table 6. Yield, height, lodging score, and date of full maturity of Group I Roundup Ready soybean varieties at Chazy, NY in 2006.

| VARIETY | BRAND | YIELD | HEIGHT | LODGING | MATURITY |
|----------|------------|----------------|-----------|--------------|-------------|
| | | <u>bu/acre</u> | <u>in</u> | <u>score</u> | <u>date</u> |
| S19-R5 | NK | 78 | 37 | 1.0 | 9/22 |
| TS1880R | T.A. Seeds | 78 | 34 | 1.0 | 10/01 |
| 91M60 | Check | 74 | 34 | 1.0 | 9/22 |
| 199RR | FS Seeds | 72 | 34 | 1.0 | 9/29 |
| AG1903 | Asgrow | 71 | 35 | 1.0 | 9/27 |
| Respond | Hyland | 70 | 36 | 1.0 | 10/01 |
| TS1440R | T.A. Seeds | 69 | 35 | 1.0 | 9/20 |
| React | Hyland | 69 | 35 | 1.0 | 9/15 |
| 122aRR | FS Seeds | 68 | 38 | 1.0 | 9/22 |
| S19-V2 | Check | 67 | 33 | 1.0 | 9/29 |
| Razor | Hyland | 67 | 35 | 1.0 | 9/18 |
| SG1919 | Seedway | 67 | 35 | 1.0 | 10/02 |
| SG1405 | Seedway | 63 | 35 | 1.0 | 9/20 |
| Avg. | | 70 | 35 | 1.0 | |
| LSD 0.05 | | 7 | 3 | NS | |

| Table 7. Yield, height, lodging score, and date of full maturity of Group I Roundup Ready soybean varieties at Sackets Harbor, NY in 2006. | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-----------|--------------|-------------|
| VARIETY | BRAND | YIELD | HEIGHT | LODGING | MATURITY |
| | | <u>bu/acre</u> | <u>in</u> | <u>score</u> | <u>date</u> |
| SG1919 | Seedway | 60 | 22 | 1.0 | 9/30 |
| 199RR | FS Seeds | 59 | 21 | 1.0 | 9/28 |
| TS1880R | T.A. Seeds | 57 | 21 | 1.0 | 9/28 |
| S19-R5 | NK | 57 | 23 | 1.0 | 9/27 |
| Respond | Hyland | 57 | 23 | 1.0 | 9/30 |
| 91M60 | Check | 56 | 22 | 1.0 | 9/23 |
| Razor | Hyland | 56 | 25 | 1.0 | 9/17 |
| AG1903 | Asgrow | 55 | 21 | 1.0 | 9/27 |
| TS1440R | T.A. Seeds | 52 | 22 | 1.0 | 9/24 |
| SG1405 | Seedway | 51 | 20 | 1.0 | 9/23 |
| 122aRR | FS Seeds | 51 | 21 | 1.0 | 9/24 |
| React | Hyland | 43 | 20 | 1.0 | 9/15 |
| Avg. | | 54 | 21 | 1.0 | |
| LSD 0.05 | | 5 | 3 | NS | |

| Table 8. Yield, height, lodging score, and date of full maturity of Group II Roundup Ready soybean varieties at Sackets Harbor, NY in 2006. | | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------|----------------|-----------|--------------|-------------|
| VARIETY | BRAND | YIELD | HEIGHT | LODGING | MATURITY |
| | | <u>bu/acre</u> | <u>in</u> | <u>score</u> | <u>date</u> |
| S24-K6 | NK | 72 | 24 | 1.0 | 9/30 |
| S24-K4 | NK | 68 | 24 | 1.0 | 10/01 |
| S21-N6 | NK | 67 | 24 | 1.0 | 9/25 |
| T2560R | T.A. Seeds | 65 | 21 | 1.0 | 10/03 |
| Rodney | Hyland | 60 | 21 | 1.0 | 9/30 |
| T2250R | T.A. Seeds | 60 | 24 | 1.0 | 9/30 |
| Renwick | Hyland | 59 | 26 | 1.0 | 9/30 |
| 217RR | FS Seeds | 58 | 21 | 1.0 | 9/26 |
| Avg. | | 64 | 23 | 1.0 | |
| LSD 0.05 | | 5 | 4 | NS | |