

Soybean

Jim Orf, Seth Naeve, Phil Schaus and Art Killam



Minnesota Agricultural Experiment Station scientists annually conduct performance tests of appropriately adapted public and private soybean varieties. Companies are charged a fee for each variety they enter to partially cover the costs of conducting these tests. A stipulation of the testing program is that the company is marketing or intends to begin marketing the variety in the next growing season.

The 2008 growing season was drier and cooler than normal. The locations in the central zone were affected to a greater degree than locations in the northern and southern zones.

Tables 1 to 3 present data from the conventional public and private variety tests conducted at various locations within the northern, central and southern production zones. The map shows test locations and zone boundaries. All of these tests were planted between May 5 and June 10 at planting rates of 160,000 seeds/acre. Herbicides were used as necessary for good weed control. Row spacings were 30 inches at Becker and Jackson and 10 inches at other locations. Plot combines were used to harvest the plots.

Table 4 provides results of the very early (northern Minnesota) Minnesota variety tests.

Tables 4 to 7 provide results from specific tests of available Roundup Ready® varieties adapted to the far northern, northern, central and southern production zones.

Tables 8 and 9 provide results from performance tests of soybean cyst-nematode-resistant varieties in "infested" field sites near Lamberton, Rosemount and Gaylord in the southern zone; and Rosemount, Gaylord and Svea in the central zone. "Non-infested" field sites were located near Lamberton, Jackson and Waseca in the southern zone and Morris, Becker and Rosemount in the central zones. Planting techniques were the same as the other performance tests.

Tables 10 to 15 provide performance and characteristics data from special-use soybean variety tests. These tests were conducted to provide reliable data for growers who are interested in producing special-use soybeans, which are typically grown under contract.

Table 16 provides important variety characteristics of publicly developed varieties entered in the 2008 tests.

Tables 17 and 18 present SCN information provided by the Nematology laboratory at the University of Minnesota Southern Research and Outreach Center at Waseca. The data are from greenhouse evaluations of varieties from both the central and southern zone trials on 3 HG types (races) of soybean cyst nematode. The level of SCN reproduction from each variety is shown, as well as a resistance rating.

Field reproductive index data from the six trial sites also are shown. Comparisons are best made relative to the susceptible check variety within a column.

To better understand and use the data provided in these tables, please read the following additional information very carefully.

Seed Treatments

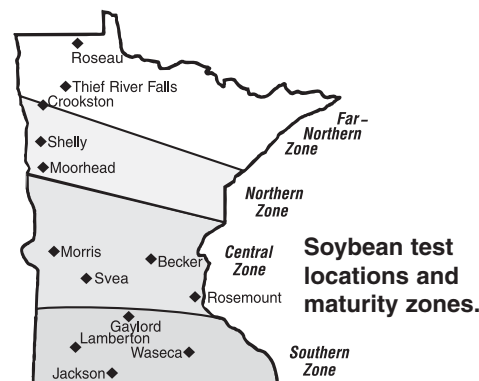
In 2008 entrants were allowed to enter treated seed. The type of seed treatment, as provided by the originator, is designated as follows:

CM = Cruiser Maxx, Go = Gauchó, SG = Soy-Gard, SK = SuperKote, TAG = Trilex/ Ale-gience/ Gauchó, TX = Trilex AL, TX6 = Trilex 6000, AX = ApronMax, MX = Maxim, MXL = Maxim XL, MXA = Maxim+Actellic = AXM = ApronMax+MaxinXL.

Research indicates that under some conditions seed treatments can affect the final yield. The exact situations are not always clear, but when comparing varieties note if a seed treatment was used on the seed being tested.

Relative Maturity and Calendar Dates of Maturity

Soybeans respond to changing day length, so the actual calendar date of maturity achievement is affected by latitude. Each variety has a narrow range of north-south adaptation. Soybean yield and quality are assured if a variety arrives at physiological maturity before a season-ending freeze occurs. This is determined visually by noting the actual date when 95 percent of the pods show their genetically programmed mature color. These dates for 2008 are provided in the tables. Harvest dates are typically 7 to 14 days later, depending upon drying conditions.



Soybean test locations and maturity zones.

Relative maturity ratings are also provided for each variety. These ratings consist of a number for the maturity group designation (000, 00, 0, 1, 2) followed by a decimal and another number, ranging from 0-9, which indicates a ranking within each maturity group. For example the variety MN0302 indicated as 0.3, making it an early group 0 variety, while MN0901, with a 0.9 rating, is the latest. These values for public varieties are developed after observing them for several years in many locations. Relative maturity ratings for private varieties in these tables were provided by their owners, and were developed in a similar manner.

Yield

Because maturity is a very important attribute, varieties are arranged in the tables in order of their actual 2008 calendar date of maturity and not yield performance.

Later-maturing varieties usually can be expected to have higher yields than earlier-maturing types. If you wish to correctly compare yields, do so only between varieties with similar calendar dates of maturity, usually within 3 to 5 days. More reliable comparisons can be made using variety yields from several consecutive years. All yield determinations were made from replicated tests harvested with a plot combine.

Yield information is presented as a percent of the mean of the test. The actual mean value is given at the bottom of each table. Values over 100 indicate the variety had a yield greater than the mean while those less than 100 have a yield less than the mean.

LSD values associated with data in these tables are measures of variability within the trials. The LSD values are given on the percent of mean data, not the actual yields. If a yield difference between two varieties within a single column exceeds this LSD value you can assume that the higher-yield-

ing variety was truly better yielding. A 20% level of significance is used in all these tables. This means that yield differences exceeding the stated LSD value are real 80% of the time.

Chlorosis

These ratings are based on how much of the leaf area was yellowing in tests conducted on high-lime (high pH) soils near Lake Lillian and Foxhome in 2008. Comparing chlorosis scores of varieties permits you to estimate how well they perform relative to each other. Actual chlorosis ratings can vary depending on the specific site and year of test. Specific scores and evaluation dates from the 2008 tests are provided at the web site www.soybeans.umn.edu/home.htm.

Some universities and companies use numerical scores rather than word descriptors to describe chlorosis tolerance. A comparison of these systems follows:

Numerical Score		Word Description
1-5 scale	1-9 scale	Rating
1 to 2	1 to 2.5	Tolerant (T)
2.1 to 3	2.6 to 5	Moderately Tolerant (MT)
3.1 to 4	5.1 to 7.5	Moderately Susceptible (MS)
4.1 to 5	7.5 to 9	Susceptible (S)

Phytophthora

Phytophthora root rot can cause significant yield reductions if susceptible varieties are planted in poorly drained, infested fields. There are several known races of this fungus, so it is important to know which are present in a particular field. Genes can be incorporated into varieties to provide resistance to specific races of this disease.

Genes for resistance to various races of Phytophthora root rot are listed in the table.

Some published information refers to Phytophthora "tolerance" or "field resistance," which is not race-specific

and should not be confused with the race-specific resistance indicated in the table. Reliable tests for tolerance have not yet been developed.

The data tables in this report indicate which Phytophthora gene or genes is/are present in each variety. A * is used where the claimed resistance was not verified by greenhouse evaluation. A # following the gene indicates greenhouse bioassay did not agree with originator's designation. The chart below columns one and two indicates which genes provide resistance to the various races.

Protein and Oil

Protein and oil values were determined from mature seed using near infrared reflectance analysis equipment. **The table values are for the 2008 season only. The protein and oil information is presented on a percent of the mean for each test. The actual mean values are given at the bottom of each table.** Values over 100 indicate the protein and/or oil contents of the variety are greater than the mean value while those less than 100 have protein and/or oil contents less than the mean. **Absolute values of protein and oil can vary from year to year.** The mean protein and oil values are expressed on a 13% moisture basis. The following formula is used to adjust the protein and oil values to another moisture basis.

$$\frac{100 - \text{desired moisture}}{87} \times \text{protein or oil value given in the table}$$

The value of a bushel of soybeans (APV) based on its oil and protein content can be calculated by:

$$APV = 60 [Po (X) + \frac{Pm}{.44}(Y)]$$

Where:

APV = approximate value of a bushel of soybeans

Po = soybean oil price (in \$ per pound)

Pm = price of 44% meal (in \$ per pound)*

X = oil content at 13% moisture (in decimals)

Y = protein content at 13% moisture (in decimals)

And:

$$\frac{* \text{ price of meal } \$/\text{ton}}{2,000} = \$/\text{pound}$$

The value of an acre of soybeans can be calculated by multiplying the APV by the yield in bushels per acre.

Genes for resistance to various races of Phytophthora root rot.

Gene Races	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Rps1,1a																											
Rps1b																											
Rps1c																											
Rps1k																											
Rps3																											
Rps4																											
Rps6																											

Soybean Cyst Nematode

Soybean Cyst Nematode (SCN) was first identified in Minnesota in 1978 and is now known to occur in many Minnesota counties where soybeans are grown. Both the area of infestation and numbers of nematodes per unit of soil appear to be increasing. Several races of this pest are known to occur in Minnesota. When SCN numbers are high, significant yield losses can occur. Rotations to non-host crops and planting of resistant varieties can assist in reducing nematode populations as well as reducing its impact on yield.

Yield performance results of susceptible (S), low resistant (LR), moderately resistant (MR) and resistant (R) varieties planted in infested and non-infested fields in central and southern Minnesota are provided in Tables 8 and 9. The ratings for SCN resistance in these tables were determined using molecular markers. In tables 17 and 18 ratings for SCN resistance were determined using results from greenhouse bioassays. The reproductive index is calculated as the number of nematodes at the end of the season divided by the number of nematodes at the beginning of the season in soil samples collected from the field plots.

For proper management of fields with SCN, it is recommended that varieties with an R rating be planted. If the SCN population numbers are relatively low (<3,000) a variety with an MR rating might be considered. LR- and S-rated varieties should not be considered for planting in fields where SCN is present.

Management information is available from the web site www.soybeans.umn.edu or from the Minnesota Soybean Research and Promotion Council, 360 Pierce Avenue, Suite 110, N. Mankato, MN 56003, 1-888-896-9678, www.mnsoybean.org

White Mold

White mold, also known as Sclerotinia stem rot, develops in infested fields when high relative humidity and moderate temperatures occur during soybean flowering. Planting less-susceptible varieties in wider row spacings or at lower populations is the most effective method of reducing the severity of white mold. Accurate ratings for soybean variety resistance to white mold are diffi-

cult to obtain because both infection and disease development depend on weather conditions. Because of this variability, a variety's performance can change significantly among locations and years depending on the interaction of plant development, precipitation, relative humidity and temperature. White mold severity also tends to be greater if lodging occurs. Growers concerned about variety performance in the presence of white mold should select varieties that show consistently less white mold during several years of testing.

Brown Stem Rot

Brown stem rot (BSR) is a fungal disease that can cause yield losses in certain situations. The disease occurs most frequently when soybeans follow soybeans but can occur where soybeans are planted every other year. Resistant varieties, or longer rotations, assist in the management of this disease.

MN0304, MN0902CN, MN1302, Freeborn, IA1006 and IA2008R, are available public varieties with resistance to BSR.

Private varieties claiming BSR resistance, but not verified by University of Minnesota lab or field tests, are: Pioneer 91Y20, Pioneer 92Y30, NK S01-C9, NK S06-W2, NK S08-C3, NK S10-K1, NK S12-P4, NK S20-P3, GCS 2820NRR, GCS 9822RR, SoDak Genetics SD1071RR, Northstar Genetics NS2223RR, Northstar Genetics NS 0814 (RR?), Northstar Genetics NS 0304 RR, Syngenta (NK) NK S01-C9, Stine 1832-4, Stine 2032-4, Syngenta NK S08-M8, Syngenta NK S13-K2, Syngenta NK S14-C5, Syngenta NK S22-C5, XR-2584 and Northstar Genetics NS0914NRR.

Some information refers to "tolerance" or "field resistance." Reliable tests for tolerance or field resistance have not yet been developed.

Special-Use Varieties

There continues to be increased interest in producing soybeans with special characteristics important to specialty food product manufacturers, such as tofu, natto, miso and soy milk. Soybean scientists previously developed some of these special-use varieties, which were general releases, but more recently vari-

eties have been released under exclusive or nonexclusive licenses to specific companies who then contract with growers for production. For further information contact MCIA at web site www.mncia@umn.edu and telephone number 612-625-7766.

Brand Names Versus Variety Names

"Brand" names and "variety" names are different and are meant to be used for different purposes. Brand names refer to the seed source or the person labeling and selling the seed. Brand does not refer to the genetic makeup of the seed. Variety names refer to the genetic makeup of seed and may only refer to a specific genetic makeup.

Plant breeders are constantly improving varieties, but whenever the genetic makeup is changed a new variety is created and it must have a new variety name. The rate at which new varieties are being developed has dramatically increased in recent years. Branding is a useful way for companies to market their products without having to constantly redo the identification and promotional information they offer.

If a farmer wishes to spread risk by planting products with different genetic makeup, the variety name must be used to determine if two products are truly different. Relying on a brand name alone to make this determination may not result in different varieties being planted.

Test Plot Research

Test plot establishment and management were supervised by Darcy Weston, Gerald Decker, Rafael Echinique, Gerald Holz, Bob Bouvette, Derek Crompton, George Nelson, Steve Quiring, Mark Hanson, John Wiersma, Tom Hoverstad, Matt Bickell, Dave Nicolai and Howard Persons.

Contact addresses and brand names for varieties entered in 2008.

Advantage Seed Inc. (Advantage)	17307 State Highway 22, Good Thunder, MN 56037	507-278-4087	adv@myclearwave.net
AgSource (AgSource)	1800 L Ave, Nevada, IA 50201	515-382-8880	tom.curry@nutechseed.com
Albert Lea Seed House (Viking)	PO Box 127, 1414 W, Main St, Albert Lea, MN 56007	1-800-352-5247	Brian@alseed.com
Anderson Seeds	37825 County Road 63, St. Peter, MN 56082	507-246-5342	njandrsn@myclearwave.net
Crow's (Crow's)	612-E Dunlap St, PO Box 157, Kentland, IN 47951	515-314-1003	wayne.hoener@channelbio.com
Dairyland Seed Co., Inc (Dairyland)	PO Box 958, West Bend, WI 53095	1-800-236-0163	rsecrist@dairylandseed.com
Dyna-Gro (Dyna-Gro)	PO Box 99, Wall Lake, IA 51466	712-664-2444	joel.nelson@uap.com
G2 Genetics (G2 Genetics)	36131 Hwy 69, Forest City, IA 50436	641-581-3350	tom.thompson@nutechseed.com
Gold Country Seed (GCS)	16506 Hwy 15N, PO Box 604, Hutchinson, MN 55350	320-587-1050	dschwartz@goldcountry.seed
Hefty Seed Company (Hefty Seed)	15866 Hwy 5, I-29 Exit 203, Pembina, ND 58271	701-454-6226	byounggren@polarcomm.com
Hyland Seeds (Hyland Seeds)	1015 N. 51st Street, Suite E, Grand Forks, ND 58203	1-800-265-7403	rsnobelen@hylandseeds.com
Kaltenburg Seeds (Kaltenberg)	5506 State Road 19, PO Box 278, Waunakee, WI 53597	608-849-5021	abeechey@kaltenbergseeds.com
Kruger Seeds, Inc. (Kruger, KSC/Challenger)	PO Box A, Dike IA, 50624	1-800-772-2721	blair@krugerseed.com
Latham Seed Company (Latham)	131 180th St., Alexander IA 50420	1-800-798-3258	markg@lathamseeds.com
Legend Seeds Inc. (Legend)	PO Box 241, De Smet, SD 57231	605-854-3346	mknight@smunet.net
Midwest Seed Genetics (Midwest)	1617 E 10th, PO Box 518, Carroll IA 51401	515-314-1003	wayne.hoener@hannelbio.com
Monsanto (Asgrow)	800 N. Lindbergh Blvd., St. Louis, MO 63167	815-754-4809	diane.freeman@monsanto.com
Mustang Seeds (Mustang)	PO Box 466, Madison, SD 57042	605-256-6529	dalenelson@mustangseeds.com
North Star Genetics, Ltd	PO Box 40, Wanamingo, MN 55983	218-437-6638	glenn@rivands.com
NuTech Seed, LLC (NuTech)	36131 Hwy 69, Forest City, IA 50436	641-581-3350	tom.thompson@nutechseed.com
Peterson Farms Seed (PFS)	3104 164 th Ave SE, Harwood ND 58042	701-282-7476	ron@petersonfarmsseed.com
Pioneer Hi-Bred International, Inc (Pioneer)	151 Saint Andrews Court, Mankato, MN 56001	507-344-2014	alan.scott@pioneer.com
Prairie Brand Seed (PBR)	15 X Ave, Story City, IA 50248	515-733-2101	ben@prairiebrandseed.com
Proseed, Inc (Proseed)	705 E. Brewster, Harvey, ND 58341	701-347-4660	proseed@ndak.net
REA Hybrids (REA)	4745 6th Ave SE, PO Box 908, Aberdeen, SD 57402	701-412-6777	mike.reahybrids@yahoo.com
Richland Organics, Inc. (Richland Organics)	100N 10th St, Breckenridge, MN 56520	218-643-1797	andy@richlandorganics.com
Sodak Genetics (Sodak Genetics)	Box 2207A, 1200 N Campus Drive, Brookings, SD 57007	605-688-5418	jack.ingemansen@sdstate.edu
Seeds 2000	PO Box 200, Breckenridge, MN 56520	218-643-2410	kwail@seeds2000.net
Stine Seed Company (Stine)	22555 Laredo Trail, Adel, IA 50003	515-667-2605	pdeby@stineseed.com
SunOpta (Bravado, Valor, Ibis, Calibri)	4111 30th Ave. S, Moorhead, MN 56560	218-287-5510	gene.leach@sunopta.com
Syngenta Seeds (NK Brand)	31250 County 25, Peterson, MN 55962	507-875-2344	eric.stocker@syngenta.com
Thunder Seed Inc (Thunder)	3008 210th St. W, Hawley, MN 56549	218-483-4637	mpetermann7@yahoo.com
Trelay Seed Co. (Trelay)	11623 State Hwy 80, Livingston, WI 53544	608-943-6363	rogert@trelay.com
Winfield Solutions (Croplan Genetics)	PO Box 63281 MS5725, St. Paul, MN 55164	651-765-5718	jrcarlson@landolakes.com
Wensman Seed (Wensman Seed)	PO Box 190, Wadena, MN 56482	320-221-2662	joel.leafblad@wensmanseed.com
Ziller Seed Co., Inc. (Ziller)	76374 380th St, Bird Island, MN 55310	320-365-3674	jaziller@zillerseed.com

Table 1. Performance and characteristics of public and private soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
7005	Thunder	9-19	—	99	100	103	98	0.5	—	1.6	TX6
MN0071	Minnesota AES	9-19	88	91	90	99	104	00.7	S	2.3	—
Jim	No. Dakota AES	9-20	102	105	103	101	100	00.7	S	2.0	—
Cavalier	No. Dakota AES	9-20	—	—	89	99	103	00.7	Rps6	2.1	—
Bravado	Sunopta	9-23	101	101	111	92	104	0.4	S	1.9	TX6
MN0095	Minnesota AES	9-25	—	—	111	96	104	00.9	Rps1	1.6	—
Valor	Sunopta	9-25	—	—	110	103	95	0.5	Rps1k	1.9	TX6
Trail	No. Dakota AES	9-25	102	100	103	103	98	0.0	Rps1	1.8	—
MN0105	Minnesota AES	9-25	103	102	93	102	100	0.1	Rps1c	2.1	—
MN0107	Minnesota AES	9-26	—	—	101	102	96	0.1	Rps1k	2.1	—
MN0308CN	Minnesota AES	9-28	—	—	98	97	103	0.3	Rps1k	2.0	—
SO-0070	Sunopta	9-28	—	—	96	106	96	0.5	S	2.4	TX6
MN0208CN	Minnesota AES	9-29	—	—	103	103	100	0.2	Rps1	2.4	—
MN0604	Minnesota AES	9-29	—	103	101	96	102	0.6	—	2.2	—
MN0101	Minnesota AES	9-29	105	105	99	98	101	0.1	Rps1	1.6	—
MN0201	Minnesota AES	9-30	100	95	92	104	99	0.2	Rps1	2.1	—
Panther	Sunopta	10-2	—	—	94	109	92	0.7	S	2.1	TX6
MN0504	Minnesota AES	10-5	—	—	98	93	102	0.5	Rps1	2.9	—
MN0502	Minnesota AES	10-5	—	—	94	100	100	0.5	—	2.4	—
Mean		9-29	39.0 bu/a	37.4 bu/a	35.7 bu/a	33.8%	18.4%				
LSD 20%			4%	5%	6%						

Table 2. Performance and characteristics of public and private soybean varieties, central zone; Becker, Morris and Rosemount, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
MN0604	Minnesota AES	9-17	—	89	87	101	97	0.6	-	3.3	—
MN0302	Minnesota AES	9-17	91	90	84	101	99	0.3	Rps1k	3.0	—
MN0504	Minnesota AES	9-18	—	—	96	97	98	0.5	-	3.8	—
Sheyenne	No. Dakota AES	9-19	—	108	109	96	97	0.7	Rps1c	2.9	—
MN0701	Minnesota AES	9-19	—	95	94	102	94	0.7	Rps1	3.2	—
MN0502	Minnesota AES	9-19	—	—	78	106	94	0.5	-	3.7	—
Lambert	Minnesota AES	9-20	98	98	102	97	101	0.7	S	3.6	—
Surge	Minn. & S.D. AES	9-21	105	105	111	103	98	0.9	Rps1	3.3	—
MN0806CN	Minnesota AES	9-21	—	97	103	98	101	0.8	S	2.8	—
MN0907	Minnesota AES	9-22	—	—	101	99	100	0.9	-	3.9	—
SR-09	Sunopta	9-23	—	—	112	97	98	0.9	Rps1k	2.4	TX6
MN1401	Minnesota AES	9-23	98	104	107	100	96	1.4	Rps1	2.6	—
MN1506	Minnesota AES	9-23	—	—	102	98	99	1.5	Rps1k	3.1	—
MN1013	Minnesota AES	9-23	—	—	97	103	96	1.0	Rps1k	2.4	—
MN1302	Minnesota AES	9-24	101	102	106	93	102	1.3	Rps1k	3.1	—
SRN14	Sunopta	9-24	—	—	106	105	93	1.4	Rps1k	2.9	TX6
MN1009	Minnesota AES	9-24	98	104	95	100	97	1.0	Rps1k	3.5	—
MN1410	Minnesota AES	9-25	109	111	116	100	97	1.4	S	3.8	—
MN1609	Minnesota AES	9-25	—	—	105	98	96	1.6	-	3.1	—
Minori	Sunopta	9-27	99	99	102	104	94	1.4	Rps1k	3.4	TX6
Mean		9-21	44.0 bu/a	41.9 bu/a	38.8 bu/a	33.9%	19.0%				
LSD 20%			3%	4%	5%						

Table 3. Performance and characteristics of public and private soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
MN1506	Minnesota AES	9-19	—	—	95	100	102	1.5	Rps1k	2.9	—
MN1302	Minnesota AES	9-19	96	82	82	107	96	1.3	Rps1k	2.6	—
MN1609	Minnesota AES	9-20	—	—	88	100	99	1.6	—	3.1	—
O.1692	Viking	9-21	—	—	106	99	99	1.6	—	2.9	—
MN1410	Minnesota AES	9-21	105	95	101	101	102	1.4	S	3.3	—
MN1801	Minnesota AES	9-21	98	89	83	102	102	1.8	Rps1c	2.9	—
IA1007	Iowa AES	9-22	—	—	74	106	94	1.7	—	3.6	—
NT-154	Nutech	9-23	—	—	124	100	99	1.5	S	3.2	—
IA1022	Iowa AES	9-23	—	110	111	90	107	1.7	S	3.0	—
NT-176	Nutech	9-25	—	111	110	100	100	1.7	S	2.9	—
IA1008	Iowa AES	9-25	—	—	100	100	99	2.0	S	3.5	—
O.1898N	Viking	9-25	—	—	96	98	101	1.8	—	3.2	—
NT-212CN	Nutech	9-26	—	114	120	97	101	2.1	Rps1c	3.4	—
O.2265	Viking	9-27	—	—	109	97	100	2.2	—	3.2	—
Mean		9-22	45.7 bu/a	47.1 bu/a	42.7 bu/a	34.1%	18.8%				
LSD 20%			3%	4%	5%						

Table 4. Performance and characteristics of conventional and Roundup Ready public and private soybean varieties, far northern zone; Crookston, Roseau and Thief River Falls, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
RR80-04	Proseed	9-18	—	—	103	103	100	0.04	—	2.3	CM
NS0022RR	North Star Genetics	9-18	—	—	94	104	98	0.3	—	2.9	MX
H0059R	Hefty Seed	9-19	—	—	105	99	105	0.05	—	2.6	—
K-004RR	Kruger	9-19	—	—	103	102	101	0.4	S	2.6	—
NS0021RR	North Star Genetics	9-20	—	—	110	105	100	0.9	Rps1k	2.4	MX
NS0011RR	North Star Genetics	9-20	—	—	104	103	105	0.3	—	2.1	MX
7005	Thunder	9-21	—	—	91	103	99	0.5	S	2.3	TX6
S00-H7	NK	9-21	—	—	84	100	99	0.01	Rps1c	2.4	—

Table 4 (continued). Performance and characteristics of conventional and Roundup Ready public and private soybean varieties, far northern zone; Crookston, Roseau and Thief River Falls, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
30B04	Dyna-Gro	9-22	102	102	104	99	104	0.4	Rps1k	2.1	—
6004	PFS	9-22	—	—	103	102	105	0.4	Rps1k	2.8	TX
AG00501	Asgrow	9-22	—	—	101	97	105	0.05	Rps1k	1.9	CM
MN0071	Minnesota AES	9-22	88	85	82	98	103	00.7	Rps1	2.4	—
27005RR	Thunder	9-23	—	100	104	99	99	0.5	—	2.8	TX6
PB-00578RR	Prairie Brand	9-23	—	—	100	100	104	0.05	S	2.6	CM
H0099R	Hefty Seed	9-23	—	—	99	101	102	0.09	Rps1k	2.3	—
AG00901	Asgrow	9-23	—	99	99	98	99	0.09	S	2.3	CM
S01-C9	NK	9-23	—	—	98	104	98	0.1	Rps1k	2.6	—
NT-0090RR	Nutech	9-24	—	113	115	102	102	0.09	—	2.2	—
W20074RR	Wensman Seed	9-24	110	109	115	96	105	0.07	Rps1k	2.5	CM
H0086R	Hefty Seed	9-24	—	—	107	100	105	0.08	Rps1k	2.8	—
K-007RR	Kruger	9-24	—	—	107	100	102	0.07	S	2.6	—
MN0105	Minnesota AES	9-24	—	101	103	105	95	0.1	Rps1c	3.1	—
PB-00645RR	Prairie Brand	9-24	108	106	101	99	100	0.08	S	2.8	CM
Trail	No. Dakota AES	9-24	103	100	101	104	97	0.0	Rps1	2.4	—
PB-00918RR	Prairie Brand	9-25	—	—	110	100	105	0.09	Rps1k	2.4	CM
7008	PFS	9-25	—	—	109	100	102	0.8	Rps1k	2.8	TX
K-009+RR	Kruger	9-25	108	106	108	101	103	0.09	S	2.8	—
26009RR	Thunder	9-25	105	102	104	101	100	0.9	—	2.7	TX6
Bravado	Sunopta	9-25	107	107	99	96	101	0.4	S	2.4	TX6
9008RR	GCS	9-25	—	—	96	98	97	0.08	—	2.6	TAG
PB-00965RR	Prairie Brand	9-26	—	—	114	102	103	0.09	S	2.8	CM
HS02R28	Hyland Seeds	9-26	—	—	106	98	95	0.2	—	2.5	—
Valor	Sunopta	9-26	—	—	105	104	96	0.5	Rps1k	2.3	TX6
RR50-07	Proseed	9-26	—	—	104	100	102	0.07	Rps1k	2.9	CM
M-0096ERR	Mustang	9-26	—	106	104	102	101	0.09	S	2.8	TX
29009RR	Thunder	9-26	—	—	104	100	102	0.9	Rps1k	2.1	TX6
MN0095	Minnesota AES	9-26	—	102	103	98	99	00.9	Rps1	1.9	—
PB-0107RR	PBR	9-26	—	102	98	100	99	0.1	—	2.8	CM
W 20096RR	Wensman Seed	9-26	—	—	98	100	105	0.09	Rps1k	2.6	CM
RR Russell	Hyland Seeds	9-26	—	—	78	99	105	0.6	—	2.9	—
30M09	Dyna-Gro	9-27	102	104	108	101	105	0.9	—	2.6	—
6015	Nutech	9-27	—	—	105	101	102	0.1	—	2.8	—
32J01	Dyna-Gro	9-27	—	103	101	96	99	0.1	—	2.6	—
901	PFS	9-27	—	100	95	99	101	0.1	—	2.8	TX
1001	PFS	9-27	—	—	93	102	99	0.1	Rps1k	2.1	TX
RR Ramsey	Hyland Seeds	9-27	94	89	92	102	101	0.5	—	2.9	—
MN0107	Minnesota AES	9-27	—	—	89	104	91	0.1	Rps1k	2.8	—
6022	Nutech	9-29	—	—	104	100	99	0.1	—	3.0	—
H 0079R	Hefty Seed	9-29	—	—	90	97	101	0.07	—	3.3	—
Colibri	Sunopta	9-29	78	71	64	95	97	0.3	S	2.8	TX6
T-020RR	Mustang	9-30	—	—	110	99	99	0.2	S	3.3	TX
PB-0218RR	PBR	9-30	—	—	106	100	96	0.2	—	3.1	CM
Ibis	Sunopta	10-1	—	—	108	102	102	0.2	Rps1	2.9	TX6
90Y20	Pioneer Brand	10-1	—	—	107	100	101	0.2	Rps1k	2.1	CM
MN0101	Minnesota AES	10-1	105	103	102	100	99	0.1	Rps1	2.4	—
MN0106RR	Minnesota AES	10-1	—	93	93	102	95	0.1	Rps1	2.6	—
K-028RR	Kruger	10-2	—	—	107	100	99	0.2	Rps1k	3.3	—
DSR-0101/RR	Dairyland	10-3	—	—	97	97	98	0.1	—	2.8	—
0901RR	GCS	10-4	—	—	99	95	102	0.1	—	3.1	TAG
6006	Nutech	10-4	—	—	95	98	97	0	—	2.9	—
2901RR	Thunder	10-6	—	—	89	98	97	0.1	—	2.6	TX6
S 00-W3	NK	10-6	—	—	70	97	99	0	Rps1	3.6	—
PB-0356RR	PBR	10-7	—	109	105	99	99	0.4	Rps1	2.3	CM
NS0024	North Star Genetics	10-12	—	—	96	101	92	0.4	—	2.2	MX
Mean		9-26	41.1 bu/a	38.0 bu/a	34.7 bu/a	33.8%	17.4%				
LSD 20%			3%	4%	5%						

Table 5. Performance and characteristics of Roundup Ready soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
K-004RR	Kruger	9-18	—	—	98	105	101	0.04	S	2.8	—
LS0036RR	Legend	9-20	—	—	100	103	102	0.6	Rps1k	2.7	—
NS0021RR	North Star Genetics	9-21	—	—	99	103	103	0.09	Rps1k	2.9	MX
RG7008RR	Rough Rider Genetics	9-23	—	85	87	105	100	—	Rps1k	3.0	—
S01-C9	NK	9-23	—	—	85	106	102	0.1	Rps1k	2.7	—
K-009+RR	Kruger	9-24	96	106	105	104	104	0.09	S	3.1	—
HS 02R28	Hyland Seeds	9-24	—	—	89	101	95	0.2	—	2.9	—
K-007RR	Kruger	9-25	—	—	106	106	98	0.07	S	2.8	—
0081RR	Seeds 2000	9-25	—	101	104	97	104	0.8	Rps1k	3.4	CM
W20074RR	Wensman Seed	9-25	—	99	98	98	103	0.07	Rps1k	3.0	CM
PB-0107RR	Prairie Brand	9-26	—	104	101	96	103	0.1	S	3.3	—
W20096RR	Wensman Seed	9-26	—	—	98	102	101	0.09	Rps1k	2.8	CM
PB-0218RR	PBR	9-26	—	—	96	99	100	0.2	S	3.6	CM
6022	Nutech	9-26	—	—	95	101	101	0.1	S	3.8	—
RG600RR	Rough Rider Genetics	9-26	—	94	95	102	102	—	—	3.6	—
RG200RR	Rough Rider Genetics	9-26	—	—	88	108	95	—	Rps1	3.5	—
RR Ridgeway	Hyland Seeds	9-27	89	95	102	98	99	0.2	—	3.2	—
LS0087RR	Legend	9-27	—	—	91	100	103	0.1	Rps1k	3.4	—
PB-00965RR	Prairie Brand	9-28	99	107	112	102	103	0.09	S	3.0	—
6015	Nutech	9-28	—	—	90	99	102	0.1	—	3.3	—
90Y20	Pioneer Brand	9-30	—	—	104	99	99	0.2	Rps1k	3.2	CM
W2025RR	Wensman Seed	9-30	—	—	103	101	101	0.2	Rps1k#	3.8	CM
K-028RR	Kruger	9-30	—	—	99	102	99	0.2	Rps1k	3.2	—
PB-0498RR	Prairie Brand	10-1	—	—	116	100	98	0.5	Rps1k	3.0	—
6858	REA	10-1	—	—	109	102	99	0.5	Rps1k	3.1	—
RR80-50	Proseed	10-1	—	—	106	101	101	0.3	Rps1k	3.1	CM
PB-0216RR	PBR	10-1	100	108	105	96	101	0.2	Rps1k	3.3	CM
PB-0554RR	Prairie Brand	10-1	102	103	104	97	100	0.5	S	3.5	—
MN0106RR	Minnesota AES	10-1	—	—	90	107	91	0.1	Rps1	3.8	—
S06-W2	NK	10-2	—	—	110	99	95	0.6	—	3.4	—
AG0401	Asgrow	10-3	—	—	105	102	95	0.4	Rps1	2.5	CM
RR70-30	Proseed	10-3	—	—	102	102	96	0.3	—	3.7	CM
NS0304RR	North Star Genetics	10-3	—	—	100	102	97	0.3	—	3.4	MX
NS0093RR	North Star Genetics	10-3	—	—	94	98	99	0.1	—	3.7	MX
2901RR	Thunder	10-3	—	—	91	97	100	0.1	S	3.7	TX6
M-047RR	Mustang	10-4	102	104	106	98	101	0.3	Rps1	3.3	TX
0901RR	GCS	10-4	—	101	103	97	101	0.1	S	3.9	TAG
M-036RR	Mustang	10-4	93	90	88	97	100	0.3	Rps1	3.3	TX
AG0604	Asgrow	10-5	104	111	117	99	100	0.6	Rps1k	3.3	CM
DSR-0401/RR	Dairyland	10-5	106	110	113	103	98	0.4	—	3.4	—
W2030RR	Wensman Seed	10-5	106	107	108	98	103	0.3	Rps1	2.6	CM
PB-0356RR	PBR	10-5	101	102	104	96	102	0.4	Rps1	3.4	CM
RR60-40	Proseed	10-5	—	—	104	98	99	0.3	Rps1	2.9	CM
2703RR	GCS	10-5	—	—	102	100	99	0.3	Rps1	2.9	TAG
2703RR	Thunder	10-5	103	96	102	99	98	0.3	S	3.8	TX6
NS0413RR	North Star Genetics	10-5	—	—	100	97	99	0.4	Rps1	3.0	MX
704	PFS	10-5	—	—	87	97	98	0.4	—	3.4	—
DSR-0602/RR	Dairyland	10-6	—	—	115	99	101	0.6	Rps1c	3.3	—
DSR-0701/RR	Dairyland	10-6	104	106	115	103	99	0.7	Rps1k	3.6	—
6750	REA	10-6	—	—	104	97	102	0.5	Rps1	3.0	—
NT-0330RR	Nutech	10-6	100	98	101	97	102	0.3	Rps1	3.0	—
PB-0636RR	PBR	10-6	—	99	101	95	101	0.6	S	3.3	CM
MN0309RR	Minnesota AES	10-6	—	—	84	103	101	0.3	Rps1k	3.8	—
703RR	Thunder	10-7	100	101	105	97	101	0.3	Rps1	2.9	TX6
806	PFS	10-7	—	—	92	95	100	0.6	—	3.1	—
905	PFS	10-7	—	—	87	100	98	0.5	S	3.1	—
NT-0636	Nutech	10-8	—	—	109	96	99	0.6	—	3.6	—
MN0401RR	Minnesota AES	10-8	88	89	87	97	103	0.4	S	3.3	—
MN0503RR	Minnesota AES	10-8	—	84	87	105	97	0.5	Rps1k	3.4	—
DSR-0903/RR	Dairyland	10-9	—	—	101	102	99	0.9	Rps1c	3.6	—
Mean		10-1	45.1 bu/a	40.3 bu/a	36.0 bu/a	31.9%	18.8%				
LSD 20%			3%	3%	6%						

Greenhouse test results do not agree with originator's designation.

Table 6. Performance and characteristics of Roundup Ready soybean varieties, central zone; Becker, Morris and Rosemount, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
K-079RR	KSC/Challenger	9-19	—	—	96	106	99	0.7	Rps1k	3.0	—
2806RR	GCS	9-19	—	98	94	99	101	0.6	—	2.6	TAG
W2060RR	Wensman Seed	9-19	—	—	90	102	98	0.6	S	3.2	CM
K-058RR	KSC/Challenger	9-20	—	—	102	102	98	0.5	Rps1k	1.9	—
GR0603	Midwest Seed	9-20	—	—	102	100	101	0.6	—	3.0	—
2906RR	Thunder	9-20	—	—	97	101	99	0.6	S	3.7	TX6
AG0808	Asgrow	9-20	—	—	91	96	102	0.8	Rps1k	2.4	CM
0905RR	GCS	9-20	—	—	91	101	100	0.5	Rps1k	3.0	TAG
90M60	Pioneer Brand	9-20	—	—	91	103	98	0.6	Rps1c	2.5	CM
SD1071RR	Sodak Genetics	9-20	—	—	89	102	101	0.7	—	3.0	—
SD1093RR	Sodak Genetics	9-21	—	—	98	103	101	0.9	—	2.9	—
K-042RR	Kruger	9-21	106	103	96	100	104	0.4	Rps1	2.3	—
G2-7095	G2 Genetics	9-21	—	—	93	103	102	0.9	Rps1k	3.9	—
S08-C3	NK	9-21	—	—	93	98	100	0.8	Rps1c	3.4	—
C0915R	Crows	9-21	—	—	91	98	99	0.9	S	2.3	—
RR Richwood	Hyland Seeds	9-21	102	95	90	99	99	0.9	—	2.5	—
SD1111RR	Sodak Genetics	9-21	97	92	90	98	105	1.1	S	3.9	—
DSR-1055/RR	Dairyland	9-21	—	—	87	95	104	1.0	—	3.3	—
MN0503RR	Minnesota AES	9-21	—	82	85	106	98	0.5	Rps1	2.8	—
RR Rockport	Hyland Seeds	9-21	87	85	82	99	103	0.6	—	2.6	—
K-091RR	Kruger	9-22	—	105	106	101	96	0.9	S	2.8	—
W2108RR	Wensman Seed	9-22	108	106	105	102	98	1.0	S	3.8	CM
AG0803	Asgrow	9-22	—	—	102	97	103	0.8	Rps1k	3.1	CM
S10-K1	NK	9-22	—	—	102	105	95	1.0	Rps1	3.3	—
RR80-90	Proseed	9-22	—	—	101	104	101	0.9	—	3.3	CM
RR61-00	Proseed	9-22	—	—	99	102	98	1.0	Rps1c	3.1	CM
2908RR	Thunder	9-22	—	—	96	96	100	0.8	Rps1k	3.1	TX6
0908NRR	GCS	9-22	—	—	93	98	99	0.8	—	2.4	TAG
MN1107RR	Minnesota AES	9-22	—	91	85	103	99	1.1	Rps1	2.6	—
2090RR	Seeds 2000	9-23	—	—	109	106	96	0.9	—	3.4	CM
W2090RR	Wensman Seed	9-23	107	107	107	102	99	0.9	S	3.6	CM
NT-0990	Nutech	9-23	—	—	106	102	99	0.9	—	3.1	—
2910RR	Thunder	9-23	—	—	103	102	101	1.0	S	3.3	TX6
S12-P4	NK	9-23	—	—	102	104	97	1.2	Rps1c	3.8	—
LS 0906RR	Legend	9-23	—	—	101	100	102	0.9	Rps1c	2.8	—
NS0853RR	North Star Genetics	9-23	—	—	101	102	101	0.9	—	4.0	MX
2120RR	Seeds 2000	9-23	—	104	100	101	97	1.2	Rps1k	3.3	CM
PB-0936RR	Prairie Brand	9-23	108	103	99	101	100	0.9	S	3.1	—
G2-7148	G2 Genetics	9-23	—	—	98	104	98	1.4	—	3.7	—
K-072+RR	Kruger	9-23	—	103	97	101	100	0.8	Rps1	3.4	—
RR80-80	Proseed	9-23	—	—	97	97	102	0.8	Rps1k	3.1	CM
W2126RR	Wensman Seed	9-23	—	—	96	100	102	1.2	S	2.9	CM
DST10-000/RR	Dairyland	9-23	—	—	93	100	99	1.0	—	3.3	—
AG1102	Asgrow	9-23	—	97	92	98	99	1.1	Rps1k	2.9	CM
91Y20	Pioneer Brand	9-23	—	—	92	101	99	1.2	Rps1k	3.3	CM
NT-0886	Nutech	9-24	—	—	114	102	98	0.8	—	3.3	—
AG1403	Asgrow	9-24	—	110	111	97	98	1.4	S	2.6	CM
2135RR	Trelay	9-24	—	—	109	99	99	1.3	Rps1k	3.5	CM
G2-7151	G2 Genetics	9-24	—	—	108	98	97	1.5	Rps1k+6	3.0	—
M-168RR	Mustang	9-24	—	107	105	98	105	1.6	S	3.3	TX
BT7131NR	Ziller	9-24	—	104	104	101	102	1.3	Rps1k	3.6	—
NS1311NRR	North Star Genetics	9-24	—	—	100	98	100	1.3	—	3.3	MX
PB-1182XRR	PBR	9-24	—	—	96	102	98	1.2	S	2.6	CM
PB-0738RR	PBR	9-24	—	—	95	97	98	0.8	S	3.1	CM
RR60-95	Proseed	9-24	—	—	95	97	101	0.9	Rps1c	2.8	CM
C1415R	Crows	9-24	—	—	94	97	104	1.2	Rps1k	3.7	—
M-089RR	Mustang	9-24	—	—	94	98	98	0.8	Rps1k	3.6	TX
NS1212RR	North Star Genetics	9-24	—	—	90	100	98	1.2	Rps1k	3.7	MX
1015	PFS	9-25	—	—	115	98	103	1.5	Rps1k	3.8	—
NS1423NRR	North Star Genetics	9-25	—	—	114	98	104	0.8	Rps1k	3.4	MX

Table 6 (continued). Performance and characteristics of Roundup Ready soybean varieties, central zone; Becker, Morris and Rosemount, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
LS1436RRN	Legend	9-25	—	—	113	104	99	1.4	Rps1k	3.4	—
PB-1557NRR	Prairie Brand	9-25	—	109	111	97	103	1.5	S	3.0	—
AG1506	Asgrow	9-25	—	—	109	98	104	1.5	Rps1k	3.9	—
7154	Nutech	9-25	—	—	109	97	102	1.5	—	3.5	—
PB-1578NRR	Prairie Brand	9-25	—	—	109	95	104	1.5	S	3.8	—
K-142RR	KSC/Challenger	9-25	—	105	108	101	103	1.4	Rps1k	2.7	—
K-129RR	KSC/Challenger	9-25	—	—	107	102	99	1.2	S	2.7	—
PB-1607RR	Prairie Brand	9-25	—	108	107	99	98	1.6	S	3.1	—
S14-N1	NK	9-25	—	—	106	98	103	1.4	Rps1k	3.3	—
1013	PFS	9-25	—	—	103	102	99	1.3	—	3.4	—
M-139RR	Mustang	9-25	—	—	102	103	99	1.3	S	3.0	TX
AG-7155	Agsource	9-25	—	—	101	95	104	1.5	Rps1k	3.6	—
6134	Nutech	9-25	—	—	101	102	99	1.3	—	2.8	—
AG-6145	Agsource	9-25	—	—	100	100	101	1.4	—	4.2	—
1913RR	GCS	9-25	—	—	100	101	98	1.3	—	2.5	TAG
K-147RR/SCN	Kruger	9-25	—	101	100	100	101	1.2	Rps1k	2.7	—
GR1431	Midwest Seed	9-25	—	—	100	99	103	1.2	Rps1k	3.3	—
PB-1358RR	PBR	9-25	—	—	100	103	98	1.3	S	2.7	CM
DSR-1601/RR	Dairyland	9-25	—	—	96	98	101	1.6	Rps1k	3.9	—
PB-1188XRR	Sansgaard	9-25	—	—	96	100	99	1.5	Rps1k	3.6	—
2165RR	Trelay	9-26	—	—	115	95	103	1.6	Rps1k#	3.7	CM
EXP.47615NR	Ziller	9-26	—	—	112	97	102	1.5	Rps1k	3.9	—
PB-1885NRR	PBR	9-26	—	—	110	96	102	1.5	S	3.3	CM
1915NRR	GCS	9-26	—	—	105	95	104	1.5	Rps1k#	3.6	TAG
AG1406	Asgrow	9-26	—	—	102	102	101	1.4	S	3.4	CM
Mean		9-23	47.9 bu/a	48.2 bu/a	44.1 bu/a	33.2%	19.3%				
LSD 20%			3%	3%	5%						

Greenhouse test results do not agree with originator's designation.

Table 7. Performance and characteristics of Roundup Ready soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
NS1423NRR	North Star Genetics	9-20	—	—	97	102	102	1.4	Rps1k	2.6	MX
K-142RR	Kruger	9-21	—	—	97	102	100	1.4	Rps1k	2.6	—
7186	G2 Genetics	9-21	—	—	95	98	102	1.8	Rps1k	2.8	—
2165	Trelay	9-22	—	—	104	97	103	1.6	Rps1k	2.8	CM
S17-B5	NK	9-22	—	—	102	98	97	1.7	Rps1c	3.3	—
1915NRR	GCS	9-22	—	—	99	97	102	1.5	Rps1k	3.4	TAG
2166	Trelay	9-22	—	95	99	100	97	1.6	Rps1k	2.6	CM
C1617R	Crows	9-22	—	—	97	98	102	1.6	Rps1k	2.8	—
K-163RR	KSC/Challenger	9-22	—	—	95	100	101	1.6	Rps1k	2.6	—
S18-Y3	NK	9-22	—	—	95	104	95	1.8	Rps1k	3.6	—
SD1161RR/SCN	Sodak Genetics	9-22	—	94	95	103	96	1.6	Rps1	2.9	—
MN1504RR	Minnesota AES	9-22	88	84	92	103	100	1.5	Rps1k	2.7	—
PB-1838NRR	PBR	9-22	—	—	90	100	100	1.8	Rps1k	2.9	CM
MN1803RR	Minnesota AES	9-22	93	82	80	104	99	1.8	Rps1	3.3	—
PB-1089XNRR	Sansgaard	9-23	—	—	108	99	102	1.9	Rps1c	2.3	—
181CNR	Anderson Seeds	9-23	—	—	102	98	102	1.7	Rps1k	2.7	—
AG1802	Asgrow	9-23	—	—	102	98	102	1.8	Rps1k	2.9	CM
K-167RR/SCN	Kruger	9-23	—	—	102	98	103	1.6	Rps1k	2.8	—
153CNR	Anderson Seeds	9-23	—	—	98	99	101	1.5	Rps1k	2.6	—
AG1906	Asgrow	9-23	—	—	95	100	100	1.9	Rps1k	3.8	CM
91Y90	Pioneer Brand	9-23	—	—	95	102	98	1.9	—	3.1	CM
C1816R	Crows	9-23	—	—	94	102	97	1.8	Rps1k	3.9	—
AG1703	Asgrow	9-24	—	—	107	98	102	1.7	Rps1k#	2.8	CM
PB-2058NRR	Prairie Brand	9-24	—	—	104	100	101	2.0	Rps1k	2.8	—

Table 7 (continued). Performance and characteristics of Roundup Ready soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2006-2008	2007-2008	2008	Protein	Oil				
7211	G2 Genetics	9-24	—	102	103	102	94	2.1	Rps1k	2.8	—
NT-1717RRR/SCN	Nutech	9-24	—	—	102	97	105	1.7	—	2.9	—
M-207RR	Mustang	9-24	105	104	101	99	98	2.0	S	2.6	TX
1918RR	GCS	9-24	—	—	95	104	97	1.8	Rps1k	3.5	TAG
GR1632	Midwest Seed Genetics	9-24	—	—	95	98	103	1.6	Rps1k	3.1	—
191CNR	Anderson Seeds	9-24	—	—	94	100	102	1.9	Rps1k	2.8	—
2195	Trelay	9-24	—	—	91	101	98	1.9	—	2.6	CM
AG6193	Agsource	9-25	—	—	105	103	99	1.9	—	2.8	—
1908CNRR	Viking	9-25	—	—	105	100	102	1.9	Rps1k	2.4	—
NT-1808 RR	Nutech	9-25	—	—	104	100	99	1.8	Rps1c	2.5	—
PB-2297NRR	Sansgaard	9-25	—	103	102	100	102	2.2	Rps1k	2.7	—
2198NRR	Viking	9-25	—	—	102	99	101	2.1	—	2.7	—
2820NRR	GCS	9-25	—	—	101	98	105	2.0	—	3.5	TAG
PB-2007NRR	Sansgaard	9-25	—	103	100	98	100	2.0	Rps1c	2.4	—
BT7208NR	Ziller	9-25	—	—	99	97	106	2.0	Rps1c	2.9	—
2090RR	Viking	9-25	—	—	98	102	99	2.0	S	2.4	—
PB-2183NRR	Prairie Brand	9-25	104	98	97	100	102	2.0	Rps1k	2.9	—
M-199RR	Mustang	9-25	—	—	96	99	99	1.9	S	2.9	TX
201CNR	Anderson Seeds	9-25	—	—	93	99	104	2.0	Rps1c#	2.6	—
PB-2207NRR	Sansgaard	9-26	—	107	109	97	102	2.2	Rps1k	3.0	—
K-201RR/SCN	Kruger	9-26	—	107	108	102	102	2.0	Rps1c	2.8	—
C2216R	Crows	9-26	—	—	104	96	101	2.2	Rps1k	3.2	—
7201	Nutech	9-26	—	—	103	98	103	2.0	—	3.1	—
PB-2117NRR	PBR	9-26	—	107	102	100	101	2.1	S	2.8	CM
L1983R	Latham	9-26	—	—	98	97	103	1.9	Rps1c	2.5	—
LS2024RRN	Legend	9-26	—	—	98	99	102	2.0	Rps1k	3.7	—
PB-2056NRR	PBR	9-26	110	103	98	101	102	2.0	Rps1c	2.8	CM
BT7217NR	Ziller	9-26	—	—	97	98	102	2.1	S	3.0	—
AG6212	Agsource	9-26	—	—	95	100	100	2.1	—	3.7	—
K-189RR/SCN	KSC/Challenger	9-26	—	—	91	102	98	1.8	Rps1k#	3.4	—
2203	Trelay	9-27	—	—	107	96	103	2.0	Rps1k#	3.0	CM
E2083R	Latham	9-27	—	—	106	100	102	2.0	Rps1k	2.8	—
K-204RR/SCN	Kruger	9-27	—	107	105	97	103	2.0	Rps1k	3.3	—
S21-N6	NK	9-27	—	—	105	97	102	2.1	Rps1k	4.1	—
AG2108	Asgrow	9-27	—	103	103	101	96	2.1	S	2.9	CM
PB-1958NRR	PBR	9-27	—	—	103	100	99	1.9	Rps1c	3.9	CM
PB-2347NRR	Prairie Brand	9-27	—	—	102	100	96	2.2	Rps1k	2.8	—
S20-P3	NK	9-27	—	—	101	103	99	2.0	Rps3a*	3.4	—
AG2002	Asgrow	9-27	—	—	100	104	97	2.0	Rps1c	2.9	CM
PB-2196NRR	Prairie Brand	9-27	—	—	99	102	98	2.1	Rps1k	2.8	—
M-219RR	Mustang	9-27	—	—	97	104	98	2.1	S	3.3	TX
LS2298RRN	Legend	9-28	—	—	103	100	101	2.2	Rps1k	3.0	—
92Y30	Pioneer Brand	9-28	—	—	103	99	99	2.3	Rps1k	2.6	CM
GR2131	Midwest Seed Genetics	9-28	—	—	99	95	103	2.1	Rps1k	2.8	—
L2085R	Latham	9-28	—	—	98	102	98	2.0	Rps1c	3.3	—
2274RR	Viking	9-28	—	—	97	100	97	2.2	—	3.1	—
7222	Nutech	9-29	—	—	109	97	102	2.2	Rps1k	3.0	—
K-228RR/SCN	KSC/Challenger	9-29	—	—	108	95	103	2.2	Rps1k	3.8	—
AG6224	Agsource	9-29	—	—	107	104	96	2.2	—	3.3	—
GR2233	Midwest Seed Genetics	9-29	—	—	106	97	101	2.2	Rps1k	2.9	—
7226	G2 Genetics	9-29	—	—	104	102	99	2.2	Rps1k	2.9	—
L2285R	Latham	9-29	—	—	103	98	101	2.2	Rps1k	2.7	—
KB2309RR	Kaltenberg	9-29	—	—	92	102	97	2.3	Rps1k	3.3	MXA
NS2223RR	North Star Genetics	9-29	—	—	91	99	97	2.2	Rps1k#	2.9	MX
DSR-2200/RR	Dairyland	9-30	—	102	106	104	95	2.2	—	3.3	—
DSR-2300/RR	Dairyland	9-30	—	—	105	101	98	2.3	Rps1k	2.6	—
K-239RR	KSC/Challenger	9-30	—	—	99	102	98	2.3	S	2.9	—
KB249RR	Kaltenberg	9-30	—	—	98	106	96	2.4	—	4.2	MXA
DST25-002/RR	Dairyland	10-1	—	—	110	106	94	2.5	—	2.8	—
9822RR	GCS	10-1	—	—	102	103	98	2.2	—	3.0	TAG
Mean		9-25	51.0 bu/a	50.8 bu/a	49.6 bu/a	33.0%	19.1%				
LSD 20%			3%	4%	5%						

Greenhouse test results do not agree with originator's designation.

* Originator provided Rps gene information; not evaluated by U of Minnesota.

Table 8. Performance and characteristics of soybean varieties, central zone, at soybean-cyst-nematode-infested (Gaylord, Rosemount and Svea) and non-infested (Becker, Morris and Rosemount) sites, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean						Percent of Mean		Maturity Rating	Phytoph- thora Gene	Chlorosis Score	SCN Rating	Seed Treat
			Infested Sites			Non-Infested Sites			Protein	Oil					
			06-08	07-08	2008	06-08	07-08	2008							
MN0308CN	Minnesota AES	9-14	73	72	65	70	65	54	103	102	0.3	S	2.4	R	—
Sheyenne	No. Dakota AES	9-15	—	86	81	—	102	91	98	102	0.7	Rps1c	2.1	S	—
MN0208CN	Minnesota AES	9-15	—	—	74	—	—	74	107	100	0.2	Rps1	2.8	R	—
MN1106CN	Minnesota AES	9-16	—	—	85	—	—	80	102	101	1.1	—	3.2	R	—
MN0506RRCN	Minnesota AES	9-16	—	—	75	—	—	75	107	99	0.5	—	2.5	R	—
90M80	Pioneer Brand	9-17	—	100	96	—	93	87	93	104	0.8	Rps1c	3.1	R	CM
MN0902CN	Minnesota AES	9-17	91	95	93	91	87	88	104	96	0.9	S	2.9	R	—
S08-M8	NK	9-17	103	98	92	102	102	106	99	98	0.8	—	3.6	R	—
0562-4	Stine	9-17	—	—	89	—	—	102	103	103	0.6	—	3.0	R	—
MN1011CN	Minnesota AES	9-17	92	97	89	95	95	93	101	93	1.0	Rps1	2.6	R	—
MN0606CN	Minnesota AES	9-17	86	89	87	92	92	91	101	99	0.6	S	3.2	R	—
MN0602	Minnesota AES	9-17	75	71	74	90	88	86	103	97	0.6	S	2.4	S	—
AG0803	Asgrow	9-18	105	104	97	103	100	100	101	100	0.8	Rps1k	2.9	R	CM
HX07RS01	Hyland Seeds	9-18	—	—	94	—	—	97	101	103	0.7	—	2.9	R	—
70-60	Proseed	9-19	—	—	96	—	—	95	103	102	0.6	Rps1k	3.0	R	CM
S14-C5	NK	9-19	—	—	95	—	—	102	104	94	1.4	Rps1k	3.1	R	—
MN0806CN	Minnesota AES	9-19	—	95	92	—	92	89	100	103	0.8	S	2.7	R	—
MN0908CN	Minnesota AES	9-19	—	—	92	—	—	97	101	99	0.9	S	3.2	R	—
S13-K2	NK	9-20	—	118	112	—	107	103	99	98	1.3	Rps1k	3.1	R	—
7151	G2 Genetics	9-21	—	—	99	—	—	104	102	99	1.5	Rps1k	2.7	R	—
RC1320	Croplan Genetics	9-22	—	—	101	—	—	94	99	99	1.3	Rps1k#	3.0	R	—
K-147RR/SCN	Kruger	9-22	—	103	101	—	108	113	101	99	1.2	Rps1k	3.0	R	—
MN1410	Minnesota AES	9-22	54	92	99	107	109	107	103	98	1.4	S	3.4	S	—
1832-4	Stine	9-22	—	—	97	—	—	102	98	102	1.8	Rps1k#	3.1	R	—
PB-1557NRR	Prairie Brand	9-23	—	118	117	—	112	109	97	102	1.5	Rps1k	3.2	R	—
7154	Nutech Seed	9-23	—	—	116	—	—	115	97	99	1.5	Rps1k	3.3	R	—
7186	G2 Genetics	9-23	—	—	110	—	—	108	97	100	1.8	Rps1k	3.4	R	—
PB-1085XNRR	PBR	9-23	—	—	99	—	—	102	99	99	1.5	S	3.6	R	CM
M-159NRR	Mustang	9-24	—	—	118	—	—	119	97	101	1.5	Rps1k6	3.2	R	TX
PB-1885NRR	Prairie Brand	9-24	114	118	115	118	114	118	96	100	1.8	Rps1k	3.5	R	—
AG1506	Asgrow	9-24	—	—	113	—	—	117	100	99	1.5	Rps1k	3.6	R	CM
PB-1578NRR	Prairie Brand	9-24	—	—	113	—	—	116	96	101	1.5	Rps1k	3.2	R	—
PB-1838NRR	Prairie Brand	9-24	—	—	113	—	—	106	101	99	1.8	Rps1k	3.6	R	—
7155	Nutech Seed	9-24	—	—	112	—	—	117	97	101	1.5	Rps1	3.5	R	—
181CNR	Anderson Seeds	9-24	—	—	108	—	—	105	98	101	1.7	Rps1k	3.6	R	—
K-189R/SCN	KSC/Challenger	9-24	—	—	106	—	—	83	102	97	1.8	Rps1k	3.9	R	—
NS1423RR	North Star Genetics	9-24	—	—	100	—	—	101	101	101	1.4	Rps1k	2.8	R	AXM
AG1802	Asgrow	9-25	—	—	104	—	—	116	99	100	1.8	Rps1k	3.1	R	CM
M-177NRR	Mustang	9-26	115	119	117	118	114	112	96	102	1.7	Rps1k6	3.4	R	TX
RC1700	Croplan Genetics	9-26	—	—	110	—	—	75	98	102	1.7	Rps1k	3.3	R	—
L1738R	Latham	9-27	—	—	117	—	—	98	104	96	1.7	S	3.8	R	—
NT-7193+RR/SCN	Nutech Seed	9-27	—	—	99	—	—	116	99	101	1.9	Rps1k	2.9	R	—
NT-1808RR/SCN	Nutech Seed	9-28	110	112	117	113	107	112	101	98	1.8	Rps1c	3.0	R	—
K-167RR/SCN	Kruger	9-28	—	112	111	—	113	111	98	101	1.6	Rps1k	3.6	R	—
91Y70	Pioneer Brand	9-29	—	—	110	—	—	113	97	103	1.7	S	3.1	R	CM
Mean		9-21	36.8 bu/a	40.4 bu/a	45.4 bu/a	46.1 bu/a	45.6 bu/a	41.7 bu/a	33.6%	19.4%					
LS20%			4%	4%	6%	3%	3%	5%							

Greenhouse test results do not agree with originator's designation.

Table 9. Performance and characteristics of soybean varieties, southern zone, at soybean-cyst-nematode-infested (Gaylord, Lamberton and Rosemount) and non-infested (Jackson, Lamberton and Waseca) sites, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean						Percent of Mean		Maturity Rating	Phytoph- thora Gene	Chlorosis Score	SCN Rating	Seed Treat
			Infested Sites			Non-Infested Sites			Protein	Oil					
			06-08	07-08	2008	06-08	07-08	2008							
MN1011CN	Minnesota AES	9-23	88	84	79	84	84	82	101	97	1.0	Rps1	2.4	R	—
MN1106CN	Minnesota AES	9-24	—	—	87	—	—	80	104	101	1.1	—	3.0	R	—
MN1410	Minnesota AES	9-26	89	87	82	101	99	105	105	98	1.4	S	2.6	S	—
7186	G2 Genetics	9-27	—	—	100	—	—	98	100	102	1.8	Rps1k	2.8	MR	—
MN0908CN	Minnesota AES	9-27	—	—	87	—	—	80	103	99	0.9	—	3.3	R	—
RC1320	Croplan Genetics	9-28	—	—	105	—	—	98	96	103	1.3	Rps1k	3.3	R	—
181CNR	Anderson Seeds	9-29	109	106	106	105	102	104	97	102	1.7	Rps1k	3.0	R	—
IA1022	Iowa AES	9-29	—	99	103	—	93	91	94	105	2.0	S	3.1	R	—
153CNR	Anderson Seeds	9-29	—	—	100	—	—	105	97	103	1.5	Rps1k	3.6	R	—
MN1701CN	Minnesota AES	9-29	101	93	98	98	94	95	101	99	1.7	—	2.8	R	—
91Y91	Pioneer Brand	9-29	—	—	93	—	—	99	104	96	1.9	Rps1k	2.6	MR	CM
RC1700	Croplan Genetics	9-29	—	—	91	—	—	93	96	103	1.7	Rps1k	3.6	R	—
K-167RR/SCN	KSC/Challenger	9-29	—	—	90	—	—	98	98	103	1.6	Rps1k	2.8	R	—
1832-4	Stine	9-29	—	95	89	—	97	96	99	102	1.8	Rps1k	2.6	R	—
Freeborn	Minnesota AES	9-29	88	85	87	88	88	97	107	94	1.6	S	2.7	R	—
K-189R/SCN	KSC/Challenger	9-29	—	—	86	—	—	82	103	99	1.8	Rps1k	3.1	R	—
193NRR	Viking	9-29	—	—	82	—	—	88	101	97	1.9	—	3.6	R	—
2032-4	Stine	9-29	—	—	80	—	—	106	101	102	2.0	Rps1k	2.2	R	—
AG2110	Asgrow	9-30	—	—	121	—	—	95	101	99	2.1	Rps1	2.8	MR	CM
AG1802	Asgrow	9-30	—	111	112	—	106	110	99	102	1.8	Rps1k	3.8	R	CM
L1738R	Latham	9-30	—	—	112	—	—	101	104	94	1.7	S	3.8	R	—
M-194NRR	Mustang	9-30	107	105	108	104	102	100	98	102	1.9	Rps1k	2.8	R	TX
2014NRR	North Star Genetics	9-30	—	—	106	—	—	99	98	103	2.0	Rps1k	3.2	R	AXM
7211	G2 Genetics	9-30	—	—	104	—	—	99	101	96	2.1	Rps1k	3.4	MR	—
K-170RR/SCN	Kruger	9-30	—	100	104	—	105	106	104	96	1.7	S	3.3	R	—
191CNR	Anderson Seeds	9-30	107	99	102	103	99	102	99	103	1.9	Rps1k	3.2	R	—
PB-1885NRR	Prairie Brand	9-30	107	103	99	108	106	110	99	104	1.8	Rps1k	2.8	R	—
AG2107	Asgrow	9-30	103	99	98	105	103	109	100	103	2.1	Rpsk+7	3.2	R	CM
92Y20	Pioneer Brand	9-30	—	—	96	—	—	106	100	101	2.2	Rps1k#	2.8	MR	CM
1932-4	Stine	9-30	—	100	94	—	103	104	105	101	2.0	—	2.5	R	—
IA2068	Iowa AES	9-30	98	95	93	96	91	96	95	101	2.1	—	3.3	R	—
7201	Nutech	10-1	—	—	115	—	—	109	98	103	2.0	Rps1c	2.8	R	—
201CNR	Anderson Seeds	10-1	—	102	108	—	98	100	95	103	2.0	Rps1c	3.3	R	—
8820RR	GCS	10-1	—	—	108	—	—	107	96	102	2.0	—	3.3	R	TAG
RC2068	Croplan Genetics	10-1	—	—	105	—	—	99	98	99	2.0	Rps1k	4.2	R	—
K-204RR/SCN	Kruger	10-1	—	109	105	—	103	101	96	102	2.0	Rps1k	3.6	R	—
K-201RR/SCN	Kruger	10-1	—	102	104	—	99	102	101	101	2.0	Rps1c	2.8	R	—
NT-7193+RR/SCN	Nutech	10-1	—	—	104	—	—	107	101	101	1.9	Rps1k	2.7	R	—
PB-2007NRR	Prairie Brand	10-1	—	107	104	—	103	107	98	102	2.0	Rps1c	2.8	R	—
RC2100	Croplan Genetics	10-1	—	—	103	—	—	105	97	102	2.1	Rps1k	3.8	R	—
S23-N7	NK	10-1	—	—	103	—	—	103	100	96	2.3	S	2.9	R	—
M-209NRR	Mustang	10-1	—	—	101	—	—	103	99	100	2.0	S	2.8	R	TX
GR2233	Midwest Seed	10-1	—	—	99	—	—	98	97	101	2.2	Rps1k	3.3	R	—
AG1906	Asgrow	10-1	—	—	98	—	—	97	102	100	1.9	Rps1k#	3.7	R	CM
S22-C5	NK	10-1	—	—	95	—	—	94	104	94	2.2	Rps1c*	2.3	MR	—
K-249RR/SCN	KSC/Challenger	10-1	—	—	91	—	—	101	104	95	2.4	S	3.9	R	—
2062-4	Stine	10-1	—	97	91	—	105	106	97	103	2.0	Rps1k	2.8	R	—
M-217NRR	Mustang	10-1	99	96	89	103	104	107	99	101	2.1	Rps1k	3.6	R	TX
PB-2347NRR	Prairie Brand	10-1	—	—	79	—	—	103	102	97	2.2	Rps1k	2.6	R	—
AG2002	Asgrow	10-2	—	108	122	—	98	102	101	99	2.0	Rps1c	2.9	R	CM
7226	G2 Genetics	10-2	—	—	121	—	—	99	99	100	2.2	Rps1k	3.3	MR	—
PB-2117NRR	PBR	10-2	—	107	113	—	102	107	101	97	2.1	S	3.5	R	CM
AG2108	Asgrow	10-2	—	106	112	—	102	105	99	102	2.1	S	3.4	R	CM
7216	Nutech	10-2	—	—	110	—	—	102	99	99	2.1	—	3.0	R	—
2106CR	Advantage	10-2	—	—	106	—	—	104	97	103	2.2	Rps1k	3.7	R	—
PB-2207NRR	PBR	10-2	—	105	106	—	107	113	96	104	2.2	Rps1k	3.2	R	CM

Greenhouse test results do not agree with originator's designation.

* Originator provided Rps gene information; not evaluated by U of Minnesota.

Table 9 (continued). Performance and characteristics of soybean varieties, southern zone, at soybean-cyst-nematode-infested (Gaylord, Lamberton and Rosemount) and non-infested (Jackson, Lamberton and Waseca) sites, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean						Percent of Mean		Maturity Rating	Phytoph- thora Gene	Chlorosis Score	SCN Rating	Seed Treat
			Infested Sites			Non-Infested Sites			Protein	Oil					
			06-08	07-08	2008	06-08	07-08	2008							
2160CR	Advantage	10-2	—	—	100	—	—	103	99	101	2.2	Rps1	3.7	R	—
K-228RR/SCN	KSC/Challenger	10-2	—	—	100	—	—	96	95	102	2.2	Rps1k	3.5	R	—
7222	Nutech	10-2	—	99	99	—	106	106	96	101	2.2	Rps1k	3.3	R	—
S19-L7	NK	10-2	104	99	92	104	104	106	101	99	—	—	3.0	R	—
92Y30	Pioneer Brand	10-3	—	—	109	—	—	102	101	98	2.3	Rps1k	2.8	R	CM
PB-2058NRR	Prairie Brand	10-3	—	—	102	—	—	100	100	99	2.0	Rps1k	2.6	R	—
PB-1958NRR	PBR	10-3	—	—	99	—	—	99	103	100	1.9	Rps1c	3.4	R	CM
XR-2584	NK	10-4	—	—	111	—	—	101	102	96	2.4	—	3.4	R	—
M-190NRR	Mustang	10-4	—	—	110	—	—	102	100	99	1.9	Rps1c	4.0	R	TX
K-248RR/SCN	Kruger	10-4	—	104	99	—	96	94	102	101	2.4	S	3.7	R	—
E1958R	Latham	10-4	—	—	99	—	—	96	101	98	1.9	Rps1c	3.8	R	—
Mean		9-30	39.7 bu/a	39.7 bu/a	38.0 bu/a	51.7 bu/a	50.5 bu/a	46.7 bu/a	33.8%	18.8%					
LSD 20%			3%	3%	5%	2%	3%	4%							

Table 10. Characteristics of special-use soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2008.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.
MN0071	Minnesota AES	00.7	General Purpose	Brown	S	2.3	3,243
MN0096SP	Minnesota AES	00.9	Higher Protein	Yellow	S	2.1	2,967
Trail	No. Dakota AES	0.0	General Purpose	Yellow	Rps1	1.8	3,110
MN0107	Minnesota AES	0.1	General Purpose	Yellow	Rps1k	2.1	3,027
MN0082SP	Minnesota AES	00.8	Small Seed	Yellow	Rps1	1.9	7,567
MN0094SP	Minnesota AES	00.9	Large Seed, Higher Protein	Black	Rps1	2.3	2,204
MN0308CN	Minnesota AES	0.3	General Purpose	Yellow	Rps1k	2.0	3,948
MN0208CN	Minnesota AES	0.2	General Purpose	Yellow	Rps1	2.4	3,914
MN0104SP	Minnesota AES	0.1	Large Seed, Higher Protein	Black	Rps1	2.8	2,522
MN0201	Minnesota AES	0.2	General Purpose	Yellow	Rps1	2.1	3,519
MN0103SP	Minnesota AES	0.1	Small Seed	Yellow	Rps1	2.1	6,486
MN0306SP	Minnesota AES	0.3	Large Seed	Black	Rps1	3.1	2,686
MN0093SP	Minnesota AES	00.9	Small Seed	Grey	Rps1	2.1	5,675
MN0207SP	Minnesota AES	0.2	Small Seed	Yellow	Rps1	2.0	7,443
MK0205	Richland Organics	0.2	Small Seed	Yellow	Rps1	2.1	5,821
MK0649	Richland Organics	0.3	Small Seed	Yellow	Rps1c	1.8	6,486
MN0307SP	Minnesota AES	0.3	Large Seed	Yellow	Rps1c	1.9	2,624
MN0402SP	Minnesota AES	0.4	Small Seed	Yellow	Rps1	2.1	5,974
MN0605SP	Minnesota AES	0.6	Higher Protein	Buff	Rps1c	1.8	3,068
MN0303SP	Minnesota AES	0.3	Small Seed	Yellow	Rps1	2.6	6,219
MK0508	Richland Organics	0.3	Small Seed	Yellow	S	2.1	5,675
MN0403SP	Minnesota AES	0.4	Small Seed	Yellow	Rps1	1.9	6,879

Table 11. Performance of special-use soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2006-2008	2007-2008	2008	Protein	Oil
MN0071	Minnesota AES	9-19	95	103	96	98	106
MN0096SP	Minnesota AES	9-23	—	108	94	116	92
Trail	No. Dakota AES	9-25	112	115	110	102	101
MN0107	Minnesota AES	9-26	—	—	108	101	98
MN0082SP	Minnesota AES	9-27	100	96	105	95	101
MN0094SP	Minnesota AES	9-27	—	102	97	104	96
MN0308CN	Minnesota AES	9-28	—	—	105	96	106
MN0208CN	Minnesota AES	9-29	—	—	111	102	102
MN0104SP	Minnesota AES	9-29	—	118	109	102	98
MN0201	Minnesota AES	9-30	108	106	99	103	101
MN0103SP	Minnesota AES	9-30	93	87	92	94	104
MN0306SP	Minnesota AES	9-30	94	91	79	99	103
MN0093SP	Minnesota AES	10-1	—	108	114	94	104
MN0207SP	Minnesota AES	10-1	—	96	96	92	102
MK0205	Richland Organics	10-2	101	95	99	100	101
MK0649	Richland Organics	10-3	100	99	102	98	101
MN0307SP	Minnesota AES	10-3	—	112	97	98	104
MN0402SP	Minnesota AES	10-4	—	90	97	97	99
MN0605SP	Minnesota AES	10-5	—	105	97	114	90
MN0303SP	Minnesota AES	10-5	99	93	96	96	101
MK0508	Richland Organics	10-6	—	—	110	96	97
MN0403SP	Minnesota AES	10-6	—	78	90	100	97
Mean		9-30	36.1 bu/a	33.3 bu/a	33.3 bu/a	34.0%	18.0%
LSD 20%			4%	4%	6%		

Table 12. Characteristics of special-use soybean varieties, central zone; Becker, Morris and Rosemount, 2008.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.
MN0501SP	Minnesota AES	0.5	Small Seed	Yellow	Rps1	2.9	4,243
MN0603SP	Minnesota AES	0.6	Small Seed	Yellow	Rps1	3.4	6,580
MK9532	Richland Organics	0.9	Small Seed	Yellow	S	3.9	4,586
Toyopro	Minnesota AES	0.8	Higher Protein	Yellow	S	3.8	3,363
MN1012SP	Minnesota AES	1.0	Small Seed	Yellow	Rps1	4.2	6,306
Sheyenne	No. Dakota AES	0.7	General Purpose	Yellow	Rps1c	2.9	3,047
MN1004SP	Minnesota AES	1.0	Low Sat., Low Linolenic Acid	Black	Rps1	3.9	2,820
MK0508	Richland Organics	0.3	Small Seed	Yellow	S	2.7	5,470
SB133	Minnesota AES	0.6	Small Seed	Yellow	—	2.6	4,779
Lambert	Minnesota AES	0.7	General Purpose	Buff	S	3.6	3,110
MN0605SP	Minnesota AES	0.6	Higher Protein	Buff	Rps1c	3.2	2,910
MN1103SP	Minnesota AES	1.1	Low Linolenic Acid	Black	Rps1	3.4	2,609
MN0805SP	Minnesota AES	0.8	Small Seed	Yellow	Rps6	3.5	5,675
MN0102SP	Minnesota AES	0.1	Small Seed	Yellow	S	2.6	4,830
MN0803SP	Minnesota AES	0.8	Higher Protein	Yellow	Rps1	2.9	4,882
Surge	Minn. & S.D. AES	0.9	General Purpose	Imperfect Black	Rps1	3.3	2,441
MN0804SP	Minnesota AES	0.8	Higher Protein	Yellow	Rps1	4.1	2,785
MN0806CN	Minnesota AES	0.8	General Purpose	Yellow	S	2.8	3,492
MN0903SP	Minnesota AES	0.9	Large Seed, Higher Protein	Yellow	Rps1	3.5	2,671
SB623	Minnesota AES	0.9	Large Seed, Higher Protein	Yellow	—	2.1	1,549
MK1016	Richland Organics	1.0	Large Seed	Yellow	S	4.0	1,720
MN1203SP	Minnesota AES	1.2	Small Seed	Yellow	—	3.7	4,882
MN1401BL	Minnesota AES	1.4	Black Seed Coat	Black	Rps1	3.3	2,377
MN0907	Minnesota AES	0.9	General Purpose	Yellow	—	3.9	2,855
ProSoy	No. Dakota AES	0.4	Higher Protein	Buff	Rps1	3.2	2,640
MN1101SP	Minnesota AES	1.1	Large Seed, Higher Protein	Yellow	Rps1	3.9	2,259
MN1410	Minnesota AES	1.4	General Purpose	Buff	S	3.8	2,768
SB313	Minnesota AES	1.3	Higher Protein, Black Seed Coat	Black	—	3.3	1,713
MN0807SP	Minnesota AES	0.8	Higher Protein	Yellow	S	2.7	2,768
MN1503SP	Minnesota AES	1.5	Higher Protein	Yellow	Rps1	2.8	2,402

Table 13. Performance of special-use soybean varieties, central zone; Becker, Morris and Rosemount, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2006-2008	2007-2008	2008	Protein	Oil
MN0501SP	Minnesota AES	9-17	75	66	70	97	106
MN0603SP	Minnesota AES	9-17	78	77	69	97	99
MK9532	Richland Organics	9-18	96	92	94	91	107
Toyopro	Minnesota AES	9-18	96	96	94	109	94
MN1012SP	Minnesota AES	9-18	—	—	85	95	99
Sheyenne	No. Dakota AES	9-19	—	128	125	93	105
MN1004SP	Minnesota AES	9-19	85	84	89	100	98
MK0508	Richland Organics	9-19	—	—	87	95	102
SB133	Minnesota AES	9-19	—	—	76	96	107
Lambert	Minnesota AES	9-20	115	114	118	93	108
MN0605SP	Minnesota AES	9-20	—	—	114	112	90
MN1103SP	Minnesota AES	9-20	108	110	107	99	103
MN0805SP	Minnesota AES	9-20	89	89	83	108	91
MN0102SP	Minnesota AES	9-20	—	—	79	102	95
MN0803SP	Minnesota AES	9-20	87	83	79	101	98
Surge	Minn. & S.D. AES	9-21	124	123	128	99	106
MN0804SP	Minnesota AES	9-21	—	117	120	105	94
MN0806CN	Minnesota AES	9-21	—	—	118	94	109
MN0903SP	Minnesota AES	9-21	100	105	107	104	99
SB623	Minnesota AES	9-21	—	—	100	105	93
MK1016	Richland Organics	9-21	—	80	86	98	98
MN1203SP	Minnesota AES	9-21	96	92	82	90	101
MN1401BL	Minnesota AES	9-22	—	—	122	102	105
MN0907	Minnesota AES	9-22	—	—	116	95	108
ProSoy	No. Dakota AES	9-22	—	—	110	103	99
MN1101SP	Minnesota AES	9-24	110	113	110	104	96
MN1410	Minnesota AES	9-25	125	123	134	96	104
SB313	Minnesota AES	9-25	—	—	104	107	96
MN0807SP	Minnesota AES	9-25	—	—	79	113	88
MN1503SP	Minnesota AES	9-26	113	113	114	101	98
Mean		9-21	37.8 bu/a	36.8 bu/a	33.6 bu/a	35.3%	18.1%
LSD 20%			4%	5%	6%		

Table 14. Characteristics of special-use soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2008.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.
MN1004SP	Minnesota AES	1.0	Low Sat, Low Linolenic Acid	Black	Rps1	3.6	3,388
MN1401BL	Minnesota AES	1.4	Black Seed Coat	Black	Rps1	3.0	2,967
MN1101SP	Minnesota AES	1.1	Large Seed, Higher Protein	Yellow	Rps1	3.5	2,752
MN1411SP	Minnesota AES	1.4	Large Seed	Yellow	Rps1c	3.8	2,640
MN1309SP	Minnesota AES	1.3	Higher Protein	Black	—	3.3	2,967
MN1310SP	Minnesota AES	1.3	Low Saturates	Imperfect Black	—	3.4	3,603
MN1302	Minnesota AES	1.3	General Purpose	Buff	Rps1k	2.6	2,508
MN1412SP	Minnesota AES	1.4	Higher Protein	Black	Rps1c	3.8	3,632
IA1021	Iowa AES	1.6	General Purpose	Yellow	—	3.3	3,027
MN1104SP	Minnesota AES	1.1	Higher Protein	Yellow	—	2.6	2,609
MN1308SP	Minnesota AES	1.3	Large Seed	Buff	Rps1c	3.4	2,441
MN1502SP	Minnesota AES	1.5	Large Seed, Higher Protein	Yellow	Rps1	3.5	2,702
MN1410	Minnesota AES	1.4	General Purpose	Buff	S	3.3	3,243
MN1508SP	Minnesota AES	1.5	Large Seed, Higher Protein	Buff	Rps1	2.9	2,873
MN1505SP	Minnesota AES	1.5	Large Seed, Higher Protein	Yellow	Rps1	3.1	2,735
MN1607SP	Minnesota AES	1.6	Large Seed, Higher Protein	Yellow	Rps1	2.9	2,565
MN1503SP	Minnesota AES	1.5	Large Seed, Higher Protein	Yellow	Rps1	3.3	2,655
IA1022	Iowa AES	1.7	General Purpose	Yellow	S	3.0	3,175
IA1020	Iowa AES	1.8	Low Saturates	Brown	—	2.9	3,982
MN1702SP	Minnesota AES	1.7	1% Linolenic Acid	Black	—	3.2	3,388

Table 14 (continued). Characteristics of special-use soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2008.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.
MN1806SP	Minnesota AES	1.8	Higher Protein	Yellow	Rps1	3.4	2,248
IA2067	Iowa AES	2.4	Large Seed, Higher Protein	Yellow	—	3.4	2,225
IA2073	Iowa AES	2.4	1% Linolenic Acid	Black	—	3.4	3,547
IA1010	Iowa AES	1.9	Large Seed	Yellow	—	3.9	1,831
MN1805SP	Minnesota AES	1.8	Large Seed, Higher Protein	Yellow	Rps1	3.8	2,248
MN2001SP	Minnesota AES	2.0	Large Seed, Higher Protein	Yellow	Rps1	3.1	2,293
Vinton 81	Iowa AES	2.0	Large Seed, Higher Protein	Yellow	Rps1c	3.3	2,415
K-220RR/SCN/LINO	KSC/Challenger	2.4	<3% Linolenic Acid	Imperfect Black	Rps1c	2.8	2,802
K-245RR/SCN/LINO	KSC/Challenger	2.4	<3% Linolenic Acid	Buff	Rps1c	4.3	3,175
IA3024	Iowa AES	2.6	1% Linolenic Acid	Imperfect Black	S	3.4	3,027

Table 15. Performance of special-use soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2006-2008.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2006-2008	2007-2008	2008	Protein	Oil
MN1004SP	Minnesota AES	9-15	88	84	85	100	99
MN1401BL	Minnesota AES	9-18	—	—	104	101	104
MN1101SP	Minnesota AES	9-18	95	95	88	106	98
MN1411SP	Minnesota AES	9-18	—	—	83	102	98
MN1309SP	Minnesota AES	9-19	—	—	99	101	103
MN1310SP	Minnesota AES	9-19	—	—	96	100	100
MN1302	Minnesota AES	9-19	107	101	96	102	100
MN1412SP	Minnesota AES	9-19	—	—	78	116	83
IA1021	Iowa AES	9-20	113	111	115	97	98
MN1104SP	Minnesota AES	9-20	—	—	104	99	103
MN1308SP	Minnesota AES	9-20	—	—	99	102	101
MN1502SP	Minnesota AES	9-20	93	92	89	99	103
MN1410	Minnesota AES	9-21	120	121	119	96	106
MN1508SP	Minnesota AES	9-21	—	—	99	102	101
MN1505SP	Minnesota AES	9-21	108	104	97	103	102
MN1607SP	Minnesota AES	9-21	100	99	95	100	101
MN1503SP	Minnesota AES	9-22	100	102	96	100	102
IA1022	Iowa AES	9-23	—	—	130	86	112
IA1020	Iowa AES	9-23	—	—	117	94	99
MN1702SP	Minnesota AES	9-23	—	—	93	98	101
MN1806SP	Minnesota AES	9-23	—	—	89	106	96
IA2067	Iowa AES	9-24	104	104	90	105	97
IA2073	Iowa AES	9-25	113	109	114	94	100
IA1010	Iowa AES	9-26	96	96	109	98	95
MN1805SP	Minnesota AES	9-26	101	97	100	107	96
MN2001SP	Minnesota AES	9-26	89	87	82	104	96
Vinton 81	Iowa AES	9-26	74	68	78	103	97
K-220RR/SCN/LINO	KSC/Challenger	9-27	—	115	116	97	102
K-245RR/SCN/LINO	KSC/Challenger	9-29	—	116	119	95	103
IA3024	Iowa AES	10-1	—	—	118	90	106
Mean		9-22	42.2 bu/a	40.4 bu/a	36.1 bu/a	36.0%	18.1%
LSD 20%			4%	5%	6%		

Table 16. Characteristics of publicly developed soybean varieties entered in 2008 tests.

Variety or Brand	Originator	Maturity Rating	Phytophthora Gene	BSR Reaction	SCN Reaction	Chlorosis Score
Cavalier	No. Dakota AES	00.7	Rps6	—	—	2.1
Jim	No. Dakota AES	00.7	S	S	S	2.0
MN0071	Minnesota AES	00.7	Rps1	S	S	2.3
MN0095	Minnesota AES	0.0	Rps1	S	S	1.6
Traill	No. Dakota AES	0.0	S	S	S	1.8
MN0101	Minnesota AES	0.1	Rps1	—	S	1.6
MN0105	Minnesota AES	0.1	Rps1c	—	S	2.1
MN0106RR	Minnesota AES	0.1	Rps1	—	S	2.6
MN0107	Minnesota AES	0.1	Rps1k	—	—	2.1
MN0201	Minnesota AES	0.2	Rps1	—	S	2.1
MN0208CN	Minnesota AES	0.2	Rps1	—	R	2.4
MN0302	Minnesota AES	0.3	Rps1k	S	S	3.0
MN0308CN	Minnesota AES	0.3	Rps1k	—	R	2.0
MN0309RR	Minnesota AES	0.3	Rps1k	—	—	3.8
MN0401RR	Minnesota AES	0.4	Rps1	—	S	3.3
MN0502	Minnesota AES	0.5	-	—	—	2.4
MN0503RR	Minnesota AES	0.5	S	—	S	3.4
MN0504	Minnesota AES	0.5	Rps1	—	—	2.9
MN0506RRCN	Minnesota AES	0.5	-	—	R	2.5
MN0602	Minnesota AES	0.6	-	—	S	2.4
MN0604	Minnesota AES	0.6	Rps6	—	S	3.3
MN0606CN	Minnesota AES	0.6	-	—	R	3.2
Lambert	Minnesota AES	0.7	Rps1	S	S	3.6
MN0701	Minnesota AES	0.7	Rps1	—	S	3.2
Sheyenne	No. Dakota AES	0.7	Rps1c	—	S	2.9
MN0806CN	Minnesota AES	0.8	S	—	R	2.8
MN0902CN	Minnesota AES	0.9	S	R	R	2.9
MN0907	Minnesota AES	0.9	-	—	—	3.9
MN0908CN	Minnesota AES	0.9	S	—	R	3.2
Surge	Minn. & S.D. AES	0.9	Rsp1	S	S	3.3
MN1009	Minnesota AES	1.0	Rps1k	—	S	3.5
MN1011CN	Minnesota AES	1.0	Rps1	—	R	2.6
MN1013	Minnesota AES	1.0	Rps1k	—	—	2.4
MN1106CN	Minnesota AES	1.1	—	—	R	3.2
MN1107RR	Minnesota AES	1.1	Rps1	—	S	2.6
MN1302	Minnesota AES	1.3	Rps1k	—	S	3.1
MN1401	Minnesota AES	1.4	Rps1	—	S	2.6
MN1410	Minnesota AES	1.4	S	R	S	3.8
MN1504RR	Minnesota AES	1.5	Rps1k	—	S	2.7
MN1506	Minnesota AES	1.5	Rps1k	—	—	3.1
Freeborn	Minnesota AES	1.6	Rps1	R	R	2.7
IA1021	Iowa AES	1.6	S	—	—	3.3
MN1609	Minnesota AES	1.6	-	—	—	3.1
IA1007	Iowa AES	1.7	-	—	—	3.6
MN1701CN	Minnesota AES	1.7	-	—	R	2.8
MN1801	Minnesota AES	1.8	Rps1c	S	S	2.9
MN1803RR	Minnesota AES	1.8	Rps1	—	S	3.3
IA1008	Iowa AES	2.0	S	—	R	3.5
IA1022	Iowa AES	2.0	S	S	R	3.1
IA2068	Iowa AES	2.1	S	S	R	3.3

Table 17. Greenhouse bioassay and field plot test of soybean varieties in central zone in Minnesota for resistance to soybean cyst nematode.

Variety or Brand	Originator	Maturity Rating	SCN Resistance Source ¹	Greenhouse Test						Field Reproductive Index		
				HG Type 0 (race 3)		HG Type 2 (race 1)		HG Type 1.3 (race 14)		Svea (Pi = 303)	Rosemount (Pi = 13800)	Gaylord (Pi = 909)
				FI	Res. ²	FI	Res. ²	FI	Res. ²	Pf/Pi	Pf/Pi	Pf/Pi
181CNR	Anderson Seeds	1.7	PI88788	34.1	LR	63.1	S	34.2	LR	0.37	0.23	1.22
AG0803	Asgrow	0.8	PI88788	46.2	LR	77.1	S	27.7	MR	2.15	0.32	1.94
AG1506	Asgrow	1.5	N	49.2	LR	71.2	S	38.2	LR	0.33	0.31	1.14
AG1802	Asgrow	1.8	PI88788	46.4	LR	80.5	S	32.9	LR	1.49	0.08	0.10
RC1320	Croplan Genetics	1.3	N	IS	IS	IS	IS	IS	IS	1.69	0.09	—
RC1700	Croplan Genetics	1.7	N	IS	IS	IS	IS	IS	IS	0.70	0.12	0.34
7151	G2 Genetics	1.5	PI88788	30.0	MR	46.2	LR	9.2	R	9.53	0.29	1.64
7186	G2 Genetics	1.8	N	1.0	R	9.5	R	97.4	S	0.95	0.24	0.21
HX07RS01	Hyland Seeds	0.7	N	41.7	LR	63.0	S	30.4	LR	1.36	0.18	0.15
K-147RR/SCN	Kruger	1.2	N	54.4	LR	77.1	S	56.1	LR	3.75	0.38	0.43
K-167RR/SCN	Kruger	1.6	N	46.6	LR	84.8	S	27.1	MR	1.73	0.26	0.59
K-189R/SCN	KSC/Challenger	1.8	N	49.6	LR	57.4	LR	31.3	LR	3.88	0.32	0.41
L1738R	Latham	1.7	PI88788	43.8	LR	57.2	LR	60.1	S	1.49	0.26	0.63
M-159NRR	Mustang	1.5	N	37.8	LR	63.1	S	38.2	LR	2.31	0.50	1.02
M-177NRR	Mustang	1.7	PI88788	41.7	LR	71.2	S	34.7	LR	1.11	0.28	1.00
S08-M8	NK	0.8	PI88788	43.5	LR	69.1	S	87.6	S	10.56	0.53	0.67
S13-K2	NK	1.3	PI88788	61.0	S	71.0	S	17.2	MR	3.84	0.29	0.01
S14-C5	NK	1.4	N	28.0	MR	52.0	LR	14.2	MR	3.84	0.33	2.61
NS1423RR	North Star Genetics	0.4	N	38.0	LR	53.4	LR	49.0	LR	5.12	0.47	0.50
7154	Nutech Seed	1.5	N	41.0	LR	82.2	S	31.0	LR	0.37	0.56	0.61
7155	Nutech Seed	1.5	N	65.0	S	84.3	S	31.6	LR	2.48	0.38	0.63
NT-1808RR/SCN	Nutech Seed	1.8	PI88788	74.8	S	65.3	S	31.4	LR	1.65	0.53	0.40
NT-7193+RR/SCN	Nutech Seed	1.9	PI88788	67.7	S	76.8	S	30.6	LR	0.74	0.51	0.78
PB-1085XNRR	PBR	1.5	N	117.6	S	91.4	S	39.5	LR	10.07	0.67	0.63
90M80	Pioneer Brand	0.8	Peking	54.3	LR	50.4	LR	74.8	S	11.80	0.26	1.68
91Y70	Pioneer Brand	1.7	PI88788	58.2	LR	61.4	S	27.9	MR	3.88	0.58	0.84
PB-1557NRR	Prairie Brand	1.5	PI88788	77.9	S	81.4	S	37.4	LR	1.32	0.41	1.35
PB-1578NRR	Prairie Brand	1.5	N	68.2	S	77.5	S	34.8	LR	1.24	0.39	2.21
PB-1838NRR	Prairie Brand	1.8	N	73.3	S	63.7	S	23.6	MR	1.57	0.43	0.70
PB-1885NRR	Prairie Brand	1.8	PI88788	68.8	S	70.5	S	33.6	LR	2.35	0.43	0.15
70-60	Proseed	0.6	N	40.1	LR	72.7	S	23.8	MR	1.16	0.63	1.93
0562-4	Stine	0.6	N	65.7	S	76.6	S	22.6	MR	2.64	0.54	0.29
1832-4	Stine	1.8	N	IS	IS	IS	IS	IS	IS	3.59	0.60	—
MN0308CN	Minnesota AES	0.3	PI88788	54.4	LR	72.4	S	5.9	R	1.44	0.69	0.92
MN0602	Minnesota AES	0.6	S	152.7	S	97.6	S	104.9	S	53.30	1.09	8.37
MN0606CN	Minnesota AES	0.6	PI88788	19.6	MR	45.4	LR	9.3	R	1.32	0.53	1.55
MN0806CN	Minnesota AES	0.8	PI88788	20.7	MR	52.6	LR	4.8	R	0.91	0.56	1.22
MN0902CN	Minnesota AES	0.9	PI88788	18.0	MR	53.0	LR	6.0	R	0.33	0.56	0.19
MN1011CN	Minnesota AES	1.0	PI88788	42.8	LR	90.7	S	10.7	MR	1.61	0.54	1.16
MN1106CN	Minnesota AES	1.1	209/437	47.8	LR	87.5	S	29.4	MR	1.07	0.66	0.11
MN1410	Minnesota AES	1.4	S	99.5	S	100.0	S	116.6	S	41.25	0.98	7.71
Sheyenne	No. Dakota AES	0.7	S	111.8	S	103.1	S	134.4	S	83.33	1.40	10.11
MN0908CN	Minnesota AES	0.9	887/209	32.7	LR	62.0	S	17.0	MR	3.38	0.50	0.55
MN0506RRCN	Minnesota AES	0.5	PI88788	9.0	R	43.1	LR	25.6	MR	3.14	0.67	0.03
MN0208CN	Minnesota AES	0.2	PI88788	38.3	LR	83.2	S	9.4	R	0.50	0.45	2.05

¹ The information of source of resistance was provided by companies. N = no data provided. IS = insufficient seed to test. 209/437 = PI209332 and/or PI437654, 887/209 = PI88788 and/or PI209332. S = susceptible.

² SCN resistance rating: R = resistant at FI 10% or less; MR = moderately resistant at FI 11-30%; LR = low resistant at FI 31-60%; S = susceptible at FI >60%.

Table 18. Greenhouse bioassay and field plot test of soybean varieties in southern zone in Minnesota for resistance to soybean cyst nematode.

Variety or Brand	Originator	Maturity Rating	SCN Resistance Source ¹	Greenhouse Test						Field Reproductive Index		
				HG Type 0 (race 3)		HG Type 2 (race 1)		HG Type 1.3 (race 14)		Lamberton (Pi = 9469)	Rosemount (Pi = 10,204)	Gaylord (Pi = 909)
				FI	Res. ²	FI	Res. ²	FI	Res. ²	Pf/Pi	Pf/Pi	Pf/Pi
2106CR	Advantage	2.2	N	53.6	LR	63.5	S	54.0	LR	1.08	0.51	2.67
2160CR	Advantage	2.2	N	41.7	LR	48.9	LR	50.7	LR	0.88	0.46	2.98
153CNR	Anderson Seeds	1.5	N	55.2	LR	69.7	S	47.3	LR	1.84	0.63	2.20
181CNR	Anderson Seeds	1.7	PI88788	50.7	LR	69.9	S	50.5	LR	1.03	0.62	5.61
191CNR	Anderson Seeds	1.9	N	44.1	LR	58.3	LR	49.8	LR	0.72	0.93	0.45
201CNR	Anderson Seeds	2.0	N	46.7	LR	82.5	S	17.2	MR	0.88	0.82	0.00
AG1802	Asgrow	1.8	PI88788	46.1	LR	88.1	S	33.2	LR	0.64	1.03	1.51
AG1906	Asgrow	1.9	N	47.4	LR	70.1	S	31.3	LR	0.68	0.60	3.08
AG2002	Asgrow	2.0	N	47.0	LR	69.3	S	24.3	MR	0.55	0.90	0.41
AG2107	Asgrow	2.1	PI88788	55.7	LR	90.6	S	36.4	LR	0.89	0.43	1.43
AG2108	Asgrow	2.1	N	37.9	LR	72.4	S	16.5	MR	0.98	0.51	1.93
AG2110	Asgrow	2.1	N	5.8	R	14.4	MR	101.7	S	0.74	0.71	0.14
RC1320	Croplan Genetics	1.3	PI88788	49.9	LR	79.2	S	25.5	MR	0.69	0.39	1.39
RC1700	Croplan Genetics	1.7	N	52.0	LR	70.8	S	25.2	MR	0.78	0.36	3.15
RC2068	Croplan Genetics	2.0	N	47.4	LR	63.6	S	18.5	MR	0.95	0.22	1.65
RC2100	Croplan Genetics	2.1	N	46.6	LR	66.0	S	27.4	MR	0.51	0.54	1.46
7186	G2 Genetics	1.8	N	3.8	R	10.9	MR	77.1	S	0.70	0.59	0.87
7211	G2 Genetics	2.1	N	1.7	R	19.3	MR	42.8	LR	0.49	0.57	0.00
7226	G2 Genetics	2.2	N	15.0	MR	31.8	LR	50.1	LR	0.41	0.71	0.04
8820RR	GCS	2.0	N	60.0	LR	60.8	S	20.3	MR	1.12	0.57	1.17
K-170RR/SCN	Kruger	1.7	N	70.0	S	82.4	S	69.1	S	1.22	0.56	0.88
K-201RR/SCN	Kruger	2.0	PI88788	53.6	LR	73.4	S	20.9	MR	0.98	0.59	2.39
K-204RR/SCN	Kruger	2.0	N	57.1	LR	80.0	S	37.1	LR	1.12	0.66	0.37
K-248RR/SCN	Kruger	2.4	N	58.6	LR	66.9	S	37.1	LR	0.62	0.75	2.34
K-167RR/SCN	KSC/Challenger	1.6	N	65.1	S	68.5	S	37.8	LR	0.83	0.68	0.25
K-189R/SCN	KSC/Challenger	1.8	N	57.8	LR	64.4	S	18.4	MR	0.68	0.64	0.14
K-228RR/SCN	KSC/Challenger	2.2	N	44.1	LR	75.3	S	16.2	MR	0.53	0.69	0.25
K-249RR/SCN	KSC/Challenger	2.4	N	40.9	LR	71.7	S	35.9	LR	1.24	0.51	1.97
E1958R	Latham	1.9	PI88788	50.4	LR	74.3	S	26.6	MR	0.54	0.26	2.89
L1738R	Latham	1.7	PI88788	45.9	LR	54.3	LR	35.7	LR	0.62	0.92	1.07
GR2233	Midwest Seed	2.2	N	16.6	MR	65.0	S	15.6	MR	0.76	1.11	2.05
M-190NRR	Mustang	1.9	N	54.4	LR	229.5	S	15.0	MR	0.55	0.58	0.56
M-194NRR	Mustang	1.9	N	53.1	LR	75.0	S	29.5	MR	1.24	0.68	1.49
M-209NRR	Mustang	2.0	N	48.1	LR	60.8	S	33.5	LR	0.66	1.03	6.26
M-217NRR	Mustang	2.1	N	50.0	LR	79.0	S	23.8	MR	0.77	0.47	0.48
S19-L7	NK		N	59.1	LR	72.3	S	11.9	MR	1.04	0.50	4.21
S22-C5	NK	2.2	N	47.1	LR	52.2	LR	76.5	S	0.72	0.49	3.41
S23-N7	NK	2.3	N	82.9	S	108.6	S	96.5	S	1.10	0.68	2.21
XR-2584	NK	2.4	N	35.3	LR	76.4	S	34.4	LR	1.17	0.89	0.96
2014NRR	North Star Genetics	2.0	N	50.4	LR	85.1	S	28.5	MR	0.50	0.74	2.01
7201	Nutech	2.0	N	64.9	S	59.3	LR	30.0	MR	0.88	0.86	2.09
7216	Nutech	2.1	N	49.1	LR	54.3	LR	28.2	MR	1.20	0.66	0.15
7222	Nutech	2.2	N	42.5	LR	51.4	LR	19.6	MR	0.62	0.75	3.99
NT-7193+RR/SCN	Nutech	1.9	PI88788	56.0	LR	63.5	S	26.0	MR	1.08	0.88	3.33
PB-1958NRR	PBR	1.9	N	42.9	LR	70.5	S	8.9	R	0.78	0.55	1.13
PB-2117NRR	PBR	2.1	N	29.9	MR	93.7	S	21.5	MR	1.01	0.74	1.47
PB-2207NRR	PBR	2.2	N	42.8	LR	61.1	S	29.5	MR	1.05	0.54	0.62
91Y91	Pioneer Brand	1.9	Peking	16.9	MR	46.8	LR	70.8	S	0.42	0.35	1.87
92Y20	Pioneer Brand	2.2	Peking	4.0	R	29.8	MR	115.4	S	0.33	0.32	0.55
92Y30	Pioneer Brand	2.3	N	31.2	LR	53.1	LR	26.7	MR	0.89	0.61	6.93
PB-1885NRR	Prairie Brand	1.8	PI88788	49.3	LR	96.7	S	30.9	LR	0.96	0.74	1.06
PB-2007NRR	Prairie Brand	2.0	N	49.6	LR	76.2	S	37.4	LR	0.88	0.53	0.55
PB-2058NRR	Prairie Brand	2.0	N	46.9	LR	64.3	S	28.2	MR	0.67	0.22	1.72
PB-2347NRR	Prairie Brand	2.2	N	42.1	LR	51.1	LR	23.0	MR	1.49	0.55	2.35
1832-4	Stine	1.8	PI88788	49.5	LR	86.6	S	28.7	MR	0.97	0.48	0.34
1932-4	Stine	2.0	PI88788	50.4	LR	68.4	S	18.3	MR	0.36	0.80	1.97
2032-4	Stine	2.0	PI88788	50.1	LR	93.2	S	28.2	MR	0.62	0.63	0.88
2062-4	Stine	2.0	N	49.3	LR	56.8	LR	26.5	MR	0.89	0.75	1.42
193NRR	Viking	1.9	Hart/887	35.7	LR	59.1	LR	16.6	MR	1.01	0.66	3.55
Freeborn	Minnesota AES	1.7	PI88788	21.3	MR	76.0	S	6.9	R	0.95	0.50	1.72
IA1022	Iowa AES	1.8	PI88788	11.2	MR	55.5	LR	13.4	MR	0.97	0.49	2.82
IA2068	Iowa AES	2.1	887/437	24.3	MR	58.1	LR	8.9	R	0.50	0.74	0.15
MN1011CN	Minnesota AES	1.0	PI88788	39.0	LR	90.7	S	8.2	R	1.24	0.44	4.63
MN1106CN	Minnesota AES	1.1	209/437	38.0	LR	93.6	S	9.0	R	0.76	0.48	1.71
MN1410	Minnesota AES	1.4	S	76.2	S	118.1	S	93.8	S	3.41	2.07	8.69
MN1701CN	Minnesota AES	1.7	PI88788	19.8	MR	62.9	S	1.6	R	0.70	1.05	5.25
MN1204RRCN	Minnesota AES	0.2	PI88788	27.1	MR	53.3	LR	1.7	R	0.78	0.32	1.24

¹ The information of source of resistance was provided by companies. N = no data provided. IS = insufficient seed to test. 209/437 = PI209332 and/or PI437654, 887/209 = PI88788 and/or PI209332. S = susceptible.

² SCN resistance rating: R = resistant at FI 10% or less; MR = moderately resistant at FI 11-30%; LR = low resistant at FI 31-60%; S = susceptible at FI >60%.