

Soybean

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Minnesota Agricultural Experiment Station scientists conduct annual 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. One of the stipulations of the testing program is that the company is marketing or intends to begin marketing the variety in the next growing season.

The 2009 growing season was drier and cooler than normal. Locations in the central zone were affected to a greater degree than locations in the northern and southern zones and harvest was delayed, especially in the northern zone.

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 1 and June 3 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 Westbrook, 12 inches at Crookston, 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 8 provide results from specific tests of available transgenic varieties adapted to the far northern, northern, central and southern production zones.

Tables 9 to 11 provide results from the performance tests of soybean cyst-nematode-resistant varieties in "infested" field sites near Lamberton, Rosemount, Westbrook and Gaylord in the southern zone and Rosemount, Gaylord, Grove City and Danvers in the central zone.

Tables 11 to 17 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 18 provides important variety characteristics of publicly developed varieties entered in the 2009 tests.

Tables 19 to 21 present SCN information provided by the Nematology laboratory at the University of Minnesota Southern Research and Outreach Center, Waseca. The data are from greenhouse evaluations of varieties from both the central and southern zone trials on HG type 0 (race 3) 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 trial sites are also shown. Comparisons are best made relative to the susceptible check variety within a column.

HG types for the fields not available at time of publication. Please check the electronic version for updates.

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

Seed Treatments

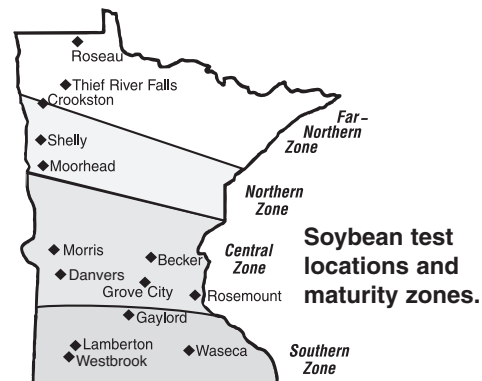
In 2009 entrants were allowed to enter treated seed. The type of seed treatment, as provided by the originator, is designated as follows: CM = Cruiser Maxx. Go = Gaucho. SG = SoyGard. SK = SuperKote. TAG = Trilex/Alegiance/Gaucho. TX = Trilex AL. TX6 = Trilex 6000. AX = ApronMax. MX = Maxim. MXL = Maxim XL. MXA = Maxim+Actellic. AXM = ApronMax+MaxinXL. AC = Acceleron.

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 tested.

In some tables the variety type is indicated in a separate column. The designations are as follows; Conventional variety (non-transgenic) CV, LibertyLink (glufosinate resistant) LL, Roundup Ready (glyphosate resistant) RR, and Roundup Ready 2 Yield (glyphosate resistant) R2.

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 physiologi-



cal 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 2009 are provided in the tables. Harvest dates are typically 7 to 14 days later, depending upon drying conditions.

Relative maturity ratings also are 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 2009 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 of more than 100 indicate the variety had a yield greater than the mean while those of 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-yielding variety was truly better yielding.

A 20-percent level of significance is used in all these tables. This means that yield differences exceeding the stated LSD value are real 80 percent of the time.

Chlorosis

Chlorosis ratings are based on how much of the leaf area was yellowing in tests conducted on high lime (high pH) soils near Danvers and Foxhome in 2009. Comparing chlorosis scores of varieties enables 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 chlorosis scores and evaluation dates from 2009 tests are provided at the web site www.soybeans.umn.edu/home.htm.

A comparison of three different chlorosis rating 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)

Protein and Oil

Protein and oil values were determined from mature seed using near infrared reflectance analysis equipment. **The table values are for the 2009 season only. Protein and oil information is presented as a percent of the mean for each test. Actual mean values are given at the bottom of each table.** Values of more than 100 indicate the protein and/or oil contents of the variety are greater than the mean value while those of 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-percent 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:

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

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:
* price of meal \$/ton = \$/pound

$$\frac{2,000}{\text{The value of an acre of soybeans can be calculated by multiplying the APV by the yield in bushels per acre.}}$$

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

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 below.

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																											

Some published information refers to *Phytophthora* “tolerance” or “field resistance,” which is not race-specific and should not be confused with race-specific resistance as indicated in the above 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 preceding chart indicates which genes provide resistance to the various races.

Soybean Cyst Nematode

Soybean Cyst Nematode (SCN), first identified in Minnesota in 1978, is 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. Significant yield losses can occur when SCN numbers are high. Rotations to non-host crops and planting of resistant varieties can assist both in reducing

nematode populations and in reducing their 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 9 to 11.

The ratings for SCN resistance in these tables were determined using molecular markers. In tables 19 to 21, 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 (Pf) divided by the number of nematodes at the beginning of the season (Pi) in soil samples collected from the field plots. The field egg count index (Ei) is the number of SCN eggs expressed as a percent of the susceptible check varieties. Both the reproductive index and the field egg count index are useful indicators of a variety’s ability to suppress SCN reproduction.

For proper management of fields with SCN, it is recommended that varieties with an R rating be plant-

ed. If the SCN population numbers are relatively low (<3000) a variety with an MR rating might be considered. Varieties rated LR and S should not be considered for planting in fields where SCN is present.

Management information is available from this web site www.soybeans.umn.edu or from the Minnesota Soybean Research and Promotion Council, 360 Pierce Avenue, Suite 110, North 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 varieties less susceptible 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 difficult 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. MN0091 and MN0701 are public varieties with better than average resistance to white mold. A private variety claiming white mold resistance, but not verified by University of Minnesota lab or field tests is Northstar Genetics NS0024RR.

Brown Stem Rot

Brown stem rot (BSR) is a fungal disease that can cause yield losses in certain situations. This 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.

Addresses for companies participating in the 2009 soybean trials.

AgSource Seed	tom.curry@nutechseed.com
Albert Lea Seed	Brian@alseed.com
Anderson Seeds	37825 County Road 63, St. Peter, MN 56082
Dairyland Seed Co., Inc.	rsecrist@dairylandseed.com
Dyna-Gro Seed / CPS	rick.swenson@uap.com
Falk’s Seed Farm, Inc.	falkseed@westtechwb.com
G2 Genetics (NuTech)	tom.thompson@nutechseed.com
Gold Country Seed	dschwartz@goldcountryseed.com
Hefty Seed Co.	byounggren@polarcomm.com
Hyland Seeds	rsnobelen@hylandseeds.com
Kruger Seeds, Inc.	blair@krugerseed.com
Monsanto	diane.freeman@monsanto.com
Mustang Seeds	dalenelson@mustangseeds.com
NorthlandOrganic Foods	craig@northlandorganic.com
NorthStar Genetics, Ltd	glenn@rivards.com
NuTech Seed	tom.thompson@nutechseed.com
Peterson Farms Seed	ron@petersonfarmsseed.com
Pioneer Hi-Bred International	mike.johnston@pioneer.com
Prairie Brand Seed	ben@prairiebrandseed.com
Proseed Inc	proseed@ndak.net
Renk Seed	arenk@renkseed.com
Richland Organics	matt@richlandorganics.com
Seeds 2000, Inc.	kwall@seeds2000.net
Sodak Genetics	jack.ingemansen@sdstate.edu
South Dakota AES	jack.ingemansen@sdstate.edu
SunOpta Grains and Foods Group	gene.leach@sunopta.com
Titan Pro SCI	jmeints@kalnet.com
Thunder Seed Inc.	mpetermann7@yahoo.com
Wensman Seed	wensman@wensmanseed.com

MN0304, MN0902CN, MN1302, Freeborn and IA2008R are available public varieties with resistance to BSR. A private variety claiming BSR resistance but not verified by University of Minnesota lab or field tests is North-star Genetics NS0304RR.

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

Special Use Varieties

Interest continues to increase in producing soybeans with special characteristics important to manufacturers of specialty food products, such as tofu, natto, miso and soy milk. Soybean scientists previously developed some of these special-use vari-

eties that were general releases. More recently varieties 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@tc.umn.edu, phone 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; they 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 must have a new variety name. The rate at which new varieties are being developed has increased dramatically 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.

Table 1. Performance and characteristics of public and private soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2007-2009	2008-2009	2009	Protein	Oil				
07005	Thunder	9-22	98	97	96	99	100	0.05	—	3.0	—
MN0071	Minnesota AES	9-22	87	83	78	96	104	00.7	Rps1	3.0	—
Cavalier	No. Dakota AES	9-24	—	87	85	98	99	00.7	Rps6	2.5	—
Jim	No. Dakota AES	9-25	101	97	92	97	101	00.7	S	3.0	—
Bravado	SunOpta	9-27	105	111	113	93	105	0.2	S	3.0	TX
MN0105	Minnesota AES	9-28	99	91	90	104	96	0.1	Rps1c	2.5	—
Valor	SunOpta	9-29	—	114	120	101	95	0.2	Rps1k	2.5	TX
MN0107	Minnesota AES	9-29	—	107	115	100	97	0.1	Rps1k	2.5	—
Traill	No. Dakota AES	9-29	102	103	105	101	99	0.0	S	2.5	—
MN0308CN	Minnesota AES	9-29	—	93	90	99	105	0.3	Rps1k	2.5	—
MN0201	Minnesota AES	10-1	100	100	109	105	100	0.2	Rps1	2.5	—
MN0095	Minnesota AES	10-2	—	113	118	95	106	00.9	Rps1	2.5	—
MN0208CN	Minnesota AES	10-2	—	103	105	101	101	0.2	Rps1	2.5	—
TA8	Thunder	10-3	—	—	86	102	95	0.4	S	3.0	—
MN0101	Minnesota AES	10-4	101	94	90	103	99	0.1	Rps1	3.0	—
SO-0070	SunOpta	*	—	98	102	109	93	0.5	S	2.5	TX
MN0604	Minnesota AES	*	108	108	116	99	103	0.6	Rps6	3.0	—
MN0502	Minnesota AES	*	—	102	112	103	100	0.5	Rps1k	2.5	—
MN0505	Minnesota AES	*	—	110	110	100	102	0.5	Rps1k	2.5	—
TA10	Thunder	*	—	—	88	102	97	0.5	S	3.0	—
SO-0205	SunOpta	*	—	—	89	101	101	0.2	Rps1k	3.0	TX
MK0205	Richland Organics	*	—	88	85	101	101	0.2	Rps1**	3.0	—
MN0504	Minnesota AES	*	—	109	121	92	102	0.5	Rps1	3.0	—
MK0508	Richland Organics	*	—	90	79	98	98	0.5	S	3.0	—
Mean	—	10-3	36.9 bu/a	36.3 bu/a	36.3 bu/a	35.2%	17.3%	—	—	—	—
LSD 20%	—	—	2%	3%	6%	—	—	—	—	—	—

*Variety not mature at killing frost.

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

Table 2. Performance and characteristics of public and private soybean varieties, central zone; Becker, Morris and Rosemount, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2007-2009	2008-2009	2009	Protein	Oil				
Ashtibula	No. Dakota AES	9-11	—	—	102	97	106	0.5	Rps6	2.5	—
MN0502	Minnesota AES	9-11	—	87	98	101	99	0.5	Rps1k	3.5	—
SO-0070	SunOpta	9-11	—	—	93	108	94	0.5	S	2.5	TX
MN0302	Minnesota AES	9-11	87	86	89	98	102	0.3	Rps1k	2.5	—
MN0806CN	Minnesota AES	9-12	98	107	112	97	106	0.8	S	2.5	—
MN0504	Minnesota AES	9-12	—	103	110	94	102	0.5	Rps1	3.5	—
Lambert	Minnesota AES	9-12	98	104	107	98	105	0.7	Rps1	2.0	—
MN0701	Minnesota AES	9-12	93	95	96	101	95	0.7	Rps1	2.0	—
MN0505	Minnesota AES	9-12	—	92	96	99	104	0.5	Rps1k	2.0	—
MK0508	Richland Organics	9-12	—	73	72	96	94	0.5	S	2.5	—
MK0649	Richland Organics	9-12	—	—	62	97	96	0.9	S	2.5	—
Sheyenne	No. Dakota AES	9-13	105	109	109	95	99	0.7	Rps1c	2.0	—
MN0907	Minnesota AES	9-13	—	104	108	98	103	0.9	Rps1k+Rps6	3.5	—
MK1016	Richland Organics	9-13	—	78	83	101	95	1.0	S	3.5	—
MN0606CN	Minnesota AES	9-14	—	—	115	99	101	0.6	—	2.5	—
MN1013	Minnesota AES	9-14	—	96	93	100	101	1.0	Rps1k	2.5	—
Surge	Minn. & S.D. AES	9-16	106	115	121	103	102	0.7	Rps1	2.0	—
Brunet	SunOpta	9-16	—	—	113	98	101	1.4	Rps1k	3.5	TX
MN1401	Minnesota AES	9-16	101	107	106	100	99	1.4	Rps1	2.5	—
MN0903SP	Minnesota AES	9-16	—	95	97	107	93	0.9	Rps1	3.5	—
MN1506	Minnesota AES	9-17	—	105	108	100	101	1.5	Rps1k	2.5	—
SR-09	SunOpta	9-17	—	110	106	100	99	0.9	Rps1k	2.0	TX
MN1410	Minnesota AES	9-19	111	119	122	101	98	1.4	S	2.0	—
Deuel	So. Dakota AES	9-19	—	—	102	102	103	1.1	Rps1k	2.0	—
MN1609	Minnesota AES	9-19	—	98	89	101	102	1.6	Rps6	4.0	—
MN1302	Minnesota AES	9-21	99	104	102	108	95	1.3	Rps1k	2.0	—
Mean	—	9-14	44.5 bu/a	41.8 bu/a	46.5 bu/a	35.5%	17.6%	—	—	—	—
LSD 20%	—	—	3%	4%	7%	—	—	—	—	—	—

Table 3. Performance and characteristics of public and private soybean varieties, southern zone; Lamberton, Waseca and Westbrook, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat
			2007-2009	2008-2009	2009	Protein	Oil				
MN1310SP	Minnesota AES	9-19	—	89	87	101	101	1.3	Rps1k	3.0	—
IA1021	Iowa AES	9-20	105	109	107	101	99	1.6	S	3.0	—
154	NuTech	9-20	—	—	104	100	99	1.5	S	2.5	CM
MN1609	Minnesota AES	9-20	—	101	102	97	103	1.6	Rps6	2.5	—
MN1801	Minnesota AES	9-20	96	96	96	103	101	1.8	Rps1c	3.0	—
MN1410	Minnesota AES	9-20	98	102	93	101	103	1.4	S	3.0	—
176	NuTech	9-21	—	—	118	98	102	1.7	S	2.5	CM
MN1702SP	Minnesota AES	9-21	—	98	104	101	97	1.7	—	3.0	—
212CN	NuTech	9-21	—	—	102	97	106	2.1	S	3.0	CM
IA1022	Iowa AES	9-21	112	112	102	94	108	1.7	S	3.0	—
MN1701CN	Minnesota AES	9-21	—	—	102	101	101	1.7	S	2.5	—
MN1506	Minnesota AES	9-21	—	102	98	99	101	1.5	Rps1k	2.5	—
MN1302	Minnesota AES	9-21	90	93	93	107	96	1.3	Rps1k	3.0	—
1706N	Viking	9-22	—	—	107	98	102	—	S	3.0	Go
IA1020	Iowa AES	9-22	—	107	102	97	98	1.9	—	3.5	—
Davison	So. Dakota AES	9-22	—	—	97	95	102	2.2	Rps1	3.0	—
219CN	NuTech	9-23	—	—	113	97	104	2.2	S	3.0	CM
IA2073	Iowa AES	9-23	—	107	105	97	99	2.1	—	3.5	—
IA1008	Iowa AES	9-23	—	106	100	100	98	2.0	S	2.5	—
IA2067	Iowa AES	9-23	—	90	92	110	95	2.1	—	3.0	—
IA1010	Iowa AES	9-26	—	103	101	104	88	2.2	—	3.0	—
IA1007	Iowa AES	9-26	—	72	63	103	97	2.2	S	3.0	—
IA3024	Iowa AES	9-29	—	116	116	96	101	3.0	Rps1k	3.0	—
Mean	—	9-22	46.7 bu/a	45.0 bu/a	52.3 bu/a	34.7%	17.8%	—	—	—	—
LSD 20%	—	—	2%	3%	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, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil					
Hardnut	SunOpta	9-25	—	—	97	99	93	0.3	S	2.0	TX	CV
NS 0024RR	NorthStar Genetics	9-26	—	—	92	98	103	0.4	S	2.0	CM	RR
80-04	Proseed	9-28	—	—	99	98	103	0.4	S	2.0	CM	RR
K-004RR	Kruger	9-28	—	99	98	103	98	0	S	2.0	CM	RR
NS 0011RR	NorthStar Genetics	9-28	—	—	95	98	103	0.4	S	2.0	CM	RR
00 59	Hefty Seed	9-29	—	—	105	101	101	0.01	S	2.0	—	RR
MN0071	Minnesota AES	9-30	85	84	89	99	101	00.7	Rps1	3.5	—	CV
NS 0034RR	NorthStar Genetics	10-1	—	—	119	97	103	0.5	S	3.0	CM	RR
6005	NuTech	10-1	—	—	114	99	95	0.01	S	2.5	CM	RR
30005RR	Thunder	10-2	—	—	108	99	101	0.05	—	2.5	—	RR
New 0.05	Dyna-Gro Seed	10-3	—	—	115	97	103	0.05	S	2.5	CM	RR
M-0096ERR	Mustang	10-3	107	107	114	101	103	0.09	S	2.0	TX	RR
W 20074RR	Wensman Seed	10-3	—	—	111	96	102	0.07	Rps1k	3.0	CM	RR
MN0106RR	Minnesota AES	10-3	96	98	108	100	98	0.1	Rps1k	2.0	—	RR
PB-00639RR	Prairie Brand	10-3	—	—	106	99	101	0.06	Rps1k	2.0	CM	RR
6019	NuTech	10-3	—	—	105	104	99	0.1	Rps1k	2.5	CM	RR
29004RR	Thunder	10-3	—	—	104	99	105	0.04	Rps1k	2.0	—	RR
00 86	Hefty Seed	10-3	—	—	101	98	101	0.01	Rps1k	2.0	—	RR
Trail	No. Dakota AES	10-3	94	91	80	105	95	0.0	S	2.0	—	CV
MN0105	Minnesota AES	10-3	94	91	77	105	94	0.1	Rps1c	2.5	—	CV
00 79	Hefty Seed	10-3	—	—	74	101	99	0.01	S	4.0	—	RR
0090RR	NuTech	10-4	—	—	124	101	103	0.09	S	2.0	CM	RR
W 20092RR	Wensman Seed	10-4	—	—	119	101	103	0.09	Rps1k	2.0	CM	RR
K-009+RR	Kruger	10-4	108	111	118	100	101	0.01	S	2.0	CM	RR
PB-00918RR	Prairie Brand	10-4	—	109	113	101	102	0.09	Rps1k	2.0	CM	RR
0081RR	Seeds 2000	10-4	—	—	109	98	101	0.08	Rps1k	2.5	CM	RR
NS 0084RR	NorthStar Genetics	10-4	—	—	108	98	103	0.8	S	2.0	CM	RR
M-0070RR	Mustang	10-4	—	—	102	100	101	0.07	S	2.0	TX	RR
PB-00965RR	Prairie Brand	10-5	—	110	108	101	102	0.09	S	3.5	CM	RR
32J01	Dyna-Gro Seed	10-5	99	95	91	99	103	0.1	S	2.0	CM	RR
00 99	Hefty Seed	10-5	—	—	89	99	102	0.01	Rps1k	2.0	—	RR
Valor	SunOpta	*	—	107	114	102	92	0.2	Rps1k	2.0	TX	CV
MN0107	Minnesota AES	*	—	95	105	104	92	0.1	Rps1k	2.0	—	CV
6022	NuTech	*	—	95	87	97	101	0.1	S	2.5	CM	RR
K-007RR	Kruger	*	—	111	120	99	99	0.01	S	2.0	CM	RR
9008RR	Gold Country Seed	*	—	102	112	96	96	0.8	S	2.0	AX	RR
DSR-C770/RR	Dairyland	*	—	—	108	102	97	0.7	S	2.0	—	RR
PB-0199RR	Prairie Brand	*	—	—	97	101	103	0.1	Rps1k	2.0	CM	RR
Bravado	SunOpta	*	107	104	113	97	98	0.2	S	2.0	TX	CV
EX2009.008RR	PFS	*	—	—	118	100	97	0.08	S	3.5	TX	RR
MN0095	Minnesota AES	*	101	100	100	99	103	00.9	Rps1	2.0	—	CV
29008RR	Thunder	*	—	—	95	100	99	0.08	—	2.5	—	RR
OT05-18	Meridian Seeds	*	—	—	92	99	106	0.7	—	4.5	AX	CV
1002RR	PFS	*	—	—	88	98	101	0.2	Rps1k	2.5	TX	RR
PB-0218RR	PBR	*	—	94	81	99	101	0.2	S	2.5	CM	RR
EX2009.006RR	PFS	*	—	—	110	99	101	0.06	S	2.5	TX	RR
MN0101	Minnesota AES	*	101	100	100	102	99	0.1	Rps1	2.0	—	CV
0905RR	Gold Country Seed	*	—	—	130	100	99	0.4	Rps1k	2.0	AX	RR
80-20	Proseed	*	—	—	90	97	101	0.1	S	3.0	CM	RR
AG0401	Asgrow	*	—	—	106	101	99	0.4	Rps1	2.0	AC	RR
0901RR	Gold Country Seed	*	—	90	81	97	101	0.1	S	2.5	AX	RR
2501RR	Thunder	*	—	—	73	97	102	0.1	—	2.5	—	RR
90Y20	Pioneer Brand	*	—	106	106	102	99	0.2	Rps1k	2.0	CM	RR
PB-039X	PBR	*	—	—	105	105	97	0.3	Rps1c	4.0	AC	R2
SO-0205	SunOpta	*	—	—	74	106	97	0.2	Rps1k	2.0	TX	CV
1000RR	PFS	*	—	—	100	102	99	0	S	3.0	TX	RR
AG0202	Asgrow	*	—	—	84	99	96	0.2	Rps1k	3.0	AC	RR
RY0409	Monsanto	*	—	—	100	100	95	0.4	S	2.5	AC	R2
K-028RR	Kruger	*	—	94	80	105	97	0.02	Rps1k	3.0	CM	RR
PB-0356RR	PBR	*	108	105	109	101	101	0.4	Rps1	2.0	CM	RR
AG0604	Asgrow	*	—	—	68	97	105	0.6	Rps1k	2.5	AC	RR
Mean	—	10-6	34.3 bu/a	30.9 bu/a	26.3 bu/a	35.4%	17.4%	—	—	—	—	—
LSD 20%	—	—	3%	4%	8%	—	—	—	—	—	—	—

* Variety not mature at killing frost.

Table 5. Performance and characteristics of Roundup Ready soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil					
PRIME	SunOpta	9-20	—	—	48	110	91	0.6	Rps1c	1.5	—	R2
RG7008RR	Rough Rider Genetics	9-25	83	82	73	102	97	00.7	Rps1k	3.0	—	RR
0081RR	Seeds 2000	9-27	105	107	104	96	104	0.08	Rps1k	2.0	CM	RR
K-009+RR	Kruger	9-27	105	103	96	103	102	0.01	S	1.5	CM	RR
RR Ridgeway	Hyland Seeds	9-27	92	93	79	98	99	0.2	S	3.5	—	RR
MN0106RR	Minnesota AES	9-28	—	89	84	103	96	0.1	Rps1k	2.0	—	RR
PB-0218RR	PBR	9-28	—	82	64	100	101	0.2	S	2.0	CM	RR
RG200RR	Rough Rider Genetics	9-29	—	96	100	104	97	0.0	Rps1	2.0	—	RR
6022	NuTech	9-29	—	97	95	99	99	0.6	S	3.5	CM	RR
1002RR	PFS	9-30	—	—	93	100	99	0.2	Rps1k	3.0	TX	RR
HS 02R28	Hyland Seeds	9-30	—	92	89	99	97	0.2	S	2.0	—	RR
PB-0554RR	Prairie Brand	10-2	109	111	113	99	102	0.5	S	3.0	CM	RR
RG600RR	Rough Rider Genetics	10-3	98	97	100	100	103	0.1	S	2.0	—	RR
2905RR	Thunder	10-4	—	—	110	99	100	0.5	Rps1k	2.0	—	RR
PB-0498RR	Prairie Brand	10-5	—	117	113	101	100	0.4	Rps1k	3.5	CM	RR
2901RR	Thunder	10-5	—	101	106	99	99	0.1	—	2.0	—	RR
PB-039X	PBR	10-5	—	—	102	103	96	0.3	S	2.0	CM	R2
37P05	Dyna-Gro Seed	*	—	—	107	99	101	0.5	Rps1k	2.0	CM	RR
4906LL	Thunder	*	—	—	99	101	102	0.6	Rps1k	1.5	—	LL
LS0624RR	Mustang	*	—	—	95	98	103	0.6	S	2.0	—	RR
NS 0214RR	NorthStar Genetics	*	—	—	93	98	98	0.2	S	2.5	CM	RR
DSR-0401/RR	Dairyland	*	107	105	92	102	101	0.4	S	2.0	—	RR
80-50	Proseed	*	—	—	87	99	102	0.5	Rps1k	2.5	CM	RR
NS 0514RR	NorthStar Genetics	*	—	—	112	98	102	0.4	Rps1k	2.0	CM	RR
90Y42	Pioneer Brand	*	—	—	108	97	102	0.4	Rps1k	2.0	CM	RR
W 2025RR	Wensman	*	—	—	92	104	98	0.2	Rps1k	2.0	CM	RR
DSR-0602/RR	Dairyland	*	—	114	108	99	104	0.6	Rps1c	2.5	—	RR
6049	NuTech	*	—	—	89	95	103	0.4	S	2.5	CM	RR
K-028RR	Kruger	*	—	95	87	103	98	0.02	Rps1k	2.5	CM	RR
DSR-0701/RR	Dairyland	*	106	107	95	101	100	0.7	Rps1k	3.5	—	RR
6059	NuTech	*	—	—	113	101	100	0.5	Rps1c	2.0	CM	RR
MN0503RR	Minnesota AES	*	88	92	92	105	98	0.5	Rps1	3.5	—	RR
RR Rockport	Hyland Seeds	*	—	—	91	102	103	0.6	S	2.0	—	RR
RS050RR	Renk Seed	*	—	—	113	97	104	0.5	Rps1c#	2.5	—	R2
2906RR	Thunder	*	—	—	125	98	98	0.6	—	1.5	—	RR
90-40	Proseed	*	—	—	123	97	104	0.4	S	2.5	CM	RR
PB-0356	PBR	*	—	—	115	98	102	0.4	Rps1#	2.0	CM	RR
NS0304RR	NorthStar Genetics	*	—	108	111	101	96	0.3	S	3.0	CM	RR
PB-059X	PBR	*	—	—	106	97	101	0.5	Rps1k	2.0	CM	R2
0905RR	PFS	*	—	—	105	101	102	0.5	Rps1#	2.0	TX	RR
K2X06A9	Kruger	*	—	—	100	109	96	0.06	—	3.0	AC	R2
M-047RR	Mustang	*	110	114	115	98	104	0.4	Rps1	2.0	TX	RR
W 2030RR	Wensman	*	—	—	101	101	103	0.3	Rps1#	3.5	CM	RR
MN0309RR	Minnesota AES	*	—	90	92	103	100	0.3	Rps6	3.0	—	RR
11R05RR	PFS	*	—	—	114	98	101	0.5	S	2.5	TX	R2
EXP 0.5RR	Dyna-Gro Seed	*	—	—	111	96	104	0.5	Rps1c	1.5	CM	RR
90Y50	Pioneer Brand	*	—	—	109	100	102	0.5	Rps1k	2.0	CM	RR
0806RR	PFS	*	—	—	108	99	100	0.6	S	2.0	TX	RR
MN0401RR	Minnesota AES	*	97	99	107	100	99	0.4	Rps1	2.5	—	RR
K2X05A9	Kruger	*	—	—	106	98	100	0.05	Rps1k	1.5	AC	R2
0636RR	NuTech	*	—	—	125	99	99	0.6	S	3.5	CM	RR
NS 0413RR	NorthStar Genetics	*	—	—	119	99	103	0.4	Rps1c	2.0	CM	RR
W 2069RR	Wensman	*	—	—	107	99	98	0.6	Rps1c#	2.5	CM	RR
DSR-0747/R2Y	Dairyland	*	—	—	116	101	97	0.7	Rps1c	3.5	—	R2
32T03	Dyna-Gro Seed	*	—	—	104	99	104	0.3	Rps1	2.5	CM	RR
G2 90-50	Proseed	*	—	—	94	99	98	0.5	Rps1k	2.5	—	R2
PB-071X	Sansgaard	*	—	—	93	102	97	0.7	Rps1c	3.0	AC	R2
PB-0199RR	Prairie Brand	*	—	—	92	97	102	0.1	Rps1k	2.0	CM	RR
Mean	—	10-10	38.1 bu/a	35.3 bu/a	36.6 bu/a	33.7%	18.1%	—	—	—	—	—
LSD 20%	—	—	2%	3%	5%	—	—	—	—	—	—	—

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

* Variety not mature at killing frost.

Table 6. Performance and characteristics of Roundup Ready soybean varieties, central zone; Becker, Morris and Rosemount, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil					
MN0506RRCN	Minnesota AES	9-15	—	—	90	107	100	0.5	S	2.5	—	RR
MN0503RR	Minnesota AES	9-15	90	88	88	103	101	0.5	Rps1	3.5	—	RR
11R15RR	PFS	9-16	—	—	84	105	101	1.5	Rps1c	3.0	TX	R2
RR Rockport	Hyland Seeds	9-16	90	83	81	99	105	0.6	S	2.5	—	RR
K-058RR	KSC/Challenger	9-16	—	90	74	99	99	0.1	Rps1k	2.5	CM	R2
W 2079RR	Wensman	9-17	—	—	98	99	100	0.7	S	3.0	CM	RR
DSR-0949/R2Y	Dairyland	9-17	—	—	86	104	101	0.9	Rps1c	2.5	—	RR
W 2112RR	Wensman	9-18	—	—	90	99	101	1.1	Rps1k+Rps6	3.5	CM	R2
SD1093RR	Sodak Genetics	9-20	—	101	100	99	104	0.9	Rps1k+Rps6	3.0	—	RR
W 2090RR	Wensman	9-20	—	—	97	99	101	0.9	S	3.0	CM	RR
PB-099X	PBR	9-20	—	—	94	102	103	0.9	Rps1c	3.5	—	R2
6098	G2 (NuTech)	9-20	—	—	92	99	98	0.9	Rps1k	2.5	CM	RR
RR Richwood	Hyland Seeds	9-20	100	93	92	97	95	0.9	S	3.5	—	RR
MN0309RR	Minnesota AES	9-20	—	—	91	100	103	0.5	Rps6	3.5	—	RR
AG0803	Asgrow	9-21	—	110	113	98	102	0.8	Rps1k	3.0	CM	RR
2081RR	Seeds 2000	9-21	—	—	110	94	101	0.8	Rps1k	3.0	CM	RR
Shenene	No. Dakato AES	9-21	—	—	93	99	99	0.7	Rps1c	2.5	—	RR
80-90	Proseed	9-22	—	—	103	102	101	0.9	Rps1c	3.0	CM	RR
PB-109X	Sansgaard	9-22	—	—	103	103	98	1.0	Rps1c	3.5	AC	RR
M-089RR	Mustang	9-22	—	100	101	97	96	0.8	Rps1k	3.0	TX	RR
DSR-1200/R2Y	Dairyland	9-22	—	—	98	101	97	1.2	Rps1k	4.0	—	RR
K-072+RR	Kruger	9-22	108	99	97	99	100	0.1	Rps1c	4.0	CM	R2
0990RR	NuTech	9-22	—	—	95	101	98	0.9	S	3.5	CM	R2
K2X10A9	Kruger	9-22	—	—	93	107	95	1.0	Rps1c	3.5	AC	R2
2120RR	Seeds 2000	9-23	111	100	103	98	101	1.2	Rps1k	3.0	CM	RR
MN1107RR	Minnesota AES	9-23	101	95	101	99	101	1.1	Rps1	2.5	—	RR
6088	G2 (NuTech)	9-23	—	—	99	101	99	0.8	S	3.5	CM	RR
K2X11B9	Kruger	9-23	—	—	98	99	96	1.1	—	2.5	AC	R2
91-Y10	Proseed	9-23	—	—	97	99	99	1.1	Rps1c	3.0	CM	RR
0886RR	NuTech	9-23	—	—	92	99	99	0.8	S	3.0	CM	RR
1013RR	PFS	9-23	—	—	84	103	99	1.3	S	3.5	TX	RR
DSR-1423/RRSTS	Dairyland	9-24	—	—	117	99	101	1.4	S	4.5	—	RR
7154	NuTech	9-24	—	115	117	103	101	1.5	S	3.5	CM	R2
RS110R2	Renk Seed	9-24	—	—	105	98	98	1.1	Rps1c	3.0	CM	R2
M-139RR	Mustang	9-24	—	101	97	103	99	1.3	S	2.5	—	LL
MN1410	Minnesota AES	9-24	—	—	94	103	98	1.4	S	3.0	—	RR
K2X15B9	KSC/Challenger	9-25	—	—	116	105	96	1.5	Rps1c	3.0	AC	RR
7151	G2 (NuTech)	9-25	—	—	113	101	95	1.5	Rps1k	3.5	CM	CV
AG1506	Asgrow	9-25	—	112	111	97	103	1.5	Rps1k	3.5	CM	RR
4910LL	Thunder	9-25	—	—	103	107	96	1.0	Rps1k	3.0	—	R2
2810RR	Thunder	9-25	—	—	102	99	99	1.0	—	3.0	—	RR
81-30	Proseed	9-25	—	—	96	100	101	1.3	S	3.5	CM	R2
6159	G2 (NuTech)	9-26	—	—	133	97	103	1.5	Rps1k	3.0	CM	RR
1015RR	PFS	9-26	—	—	119	96	103	1.5	Rps1k	4.5	TX	RR
153 CNR	Anderson	9-26	—	—	118	96	105	1.5	Rps1k	3.0	—	RR
PB-1578NRR	Prairie Brand	9-26	—	116	118	97	105	1.5	Rps1k	3.0	CM	R2
15M2	Titan Pro SCI	9-26	—	—	116	97	101	1.5	Rps1c	3.0	—	R2
K2X14A9	Kruger	9-26	—	—	114	95	99	1.4	Rps1c	2.5	AC	R2
PB-159X	PBR	9-26	—	—	111	98	100	1.5	Rps1c	3.0	AC	R2
PB-155X	PBR	9-26	—	—	110	97	99	1.2	Rps1c	3.0	—	R2
W 2152NRR	Wensman	9-26	—	—	109	97	105	1.5	Rps1k	3.0	CM	R2
81-50N	Proseed	9-26	—	—	101	96	105	1.5	Rps1k	2.5	CM	R2
PB-141X	Prairie Brand	9-27	—	—	124	96	99	1.4	Rps1c	3.0	AC	RR
RS140NR2	Renk Seed	9-29	—	—	124	98	105	1.4	Rps1c	3.0	CM	RR
Mean	—	9-22	43.4 bu/a	43.1 bu/a	43.9 bu/a	34.7%	17.5%	—	—	—	—	—
LSD 20%	—	—	3%	4%	7%	—	—	—	—	—	—	—

Table 7. Performance and characteristics of Roundup Ready soybean varieties, relative maturity (RM) >1.5, central zone; Becker, Morris and Rosemount, 2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil					
M-168RR	Mustang	9-27	—	—	81	93	105	1.6	S	3.0	—	RR
RS160NR2	Renk Seed	9-28	—	—	117	100	99	1.6	Rps1k	3.0	CM	R2
PB-1885NRR	PBR	9-28	—	—	112	97	105	1.8	Rps1k	3.0	Go	RR
17M3	Titan Pro SCI	9-28	—	—	110	101	98	1.7	Rps1k	3.0	—	R2
PB-1739VNRR	Prairie Brand	9-28	—	—	110	101	97	1.6	S	3.0	CM	RR
161 R2	Anderson	9-28	—	—	105	99	100	1.7	Rps1k	3.0	AX	R2
AG1802	Asgrow	9-28	—	—	101	98	103	1.8	Rps1k	3.0	CM	RR
91Y80	Pioneer Brand	9-28	—	—	100	100	99	1.8	Rps1k+Rps 6	2.5	CM	RR
1788NRR	Viking	9-28	—	—	99	99	101	1.7	Rps1k	3.5	Go	RR
19M7	Titan Pro SCI	9-28	—	—	66	100	94	1.9	Rps1c	3.5	—	R2
PB-179X	Prairie Brand	9-29	—	—	117	99	101	1.7	Rps1k	3.0	AC	R2
181 CNR	Anderson	9-29	—	—	114	98	101	1.7	Rps1k	3.0	—	RR
PB-219X	Sansgaard	9-29	—	—	112	100	98	1.9	—	3.0	AC	R2
7199	NuTech	9-29	—	—	106	98	103	1.9	Rps1c	3.0	CM	RR
K-189RR/SCN	KSC/Challenger	9-29	—	—	106	103	99	1.8	Rps1k	3.0	CM	RR
7201	AgSource	9-29	—	—	105	98	102	2.0	Rps1c	3.0	CM	RR
20M1	Titan Pro SCI	9-29	—	—	101	97	101	2.0	Rps1k	3.0	—	R2
6191	AgSource	9-29	—	—	91	99	102	1.9	S	3.0	CM	RR
K2X21A9	KSC/Challenger	9-29	—	—	86	104	97	2.1	—	2.5	AC	R2
RS179NRR	Renk Seed	9-30	—	—	104	102	98	1.7	S	3.0	—	RR
92Y20	Pioneer Brand	9-30	—	—	104	97	102	2.2	Rps1k	3.0	CM	RR
AG2108	Asgrow	9-30	—	—	101	99	98	2.1	S	3.0	CM	RR
92Y10	Pioneer Brand	9-30	—	—	101	101	101	2.1	Rps1k	3.0	CM	RR
SD1161RR/SCN	Sodak Genetics	9-30	—	—	93	101	93	1.6	Rps1	3.0	—	CV
DSR-2200/RR	Dairyland	9-30	—	—	82	105	103	2.2	S	3.0	—	RR
3199L	AgSource	10-2	—	—	91	102	105	1.9	Rps1k	3.0	TX	LL
3229L	AgSource	10-2	—	—	88	108	96	2.2	S	3.0	TX	LL
Mean	—	9-29	—	—	52.5 bu/a	34.7%	17.9%	—	—	—	—	—
LSD 20%	—	—	—	—	5%	—	—	—	—	—	—	—

Table 8. Performance and characteristics of Roundup Ready soybean varieties, southern zone; Lamberton, Waseca and Westbrook, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil					
MN1504RR	Minnesota AES	9-19	88	91	92	101	102	1.5	Rps1k	4.0	—	RR
91Y80	Pioneer Brand	9-21	—	—	92	103	99	1.8	Rps1k+Rps 6	3.0	CM	RR
PB-201X	PBR	9-22	—	—	101	103	97	2.0	Rps1c	3.0	AC	R2
K2-1901	Kruger	9-22	—	—	100	99	99	1.9	Rps1k	3.0	AC	R2
PB-179X	Prairie Brand	9-22	—	—	100	102	99	1.7	Rps1k	3.5	AC	R2
PB-207X	Sansgaard	9-22	—	—	99	102	98	2.0	—	3.5	AC	R2
AG1802	Asgrow	9-22	—	—	97	99	104	1.8	Rps1k	4.0	CM	RR
92Y20	Pioneer Brand	9-22	—	—	94	97	104	2.2	Rps1k	3.5	CM	RR
AG1703	Asgrow	9-22	—	99	92	96	104	1.7	Rps1k	3.5	CM	RR
PB-1999NR2	Prairie Brand	9-22	—	—	91	100	97	1.9	Rps1k	3.0	AC	R2
PB-2056NRR	PBR	9-23	107	104	109	101	99	2.0	Rps1c	3.0	Go	RR
AG2002	Asgrow	9-23	—	103	106	98	103	2.0	Rps1c	3.0	CM	RR
19M7	Titan Pro SCI	9-23	—	—	106	103	94	1.9	Rps1c	3.0	—	R2
PB-2058NRR	Prairie Brand	9-23	—	105	106	101	99	2.0	Rps1k	3.0	Go	RR
DST20-002/RR	Dairyland	9-23	—	—	105	102	99	2.0	S	3.0	—	RR
L199	Viking	9-23	—	—	102	102	98	1.9	Rps1c	3.5	TX	LL
1808RN	NuTech	9-23	—	—	101	99	99	1.8	Rps1c	4.0	CM	RR
AG2108	Asgrow	9-23	—	102	101	100	98	2.1	S	3.5	CM	RR
PB-214X	Sansgaard	9-23	—	—	101	101	97	2.1	Rps1c	3.0	AC	R2
202 R2	Anderson	9-23	—	—	100	97	102	2.0	Rps1k	3.0	AX	R2
RS200NR2	Renk Seed	9-23	—	—	99	100	98	2.0	Rps1k	3.0	CM	R2
PB-203X	Sansgaard	9-23	—	—	99	101	97	2.0	Rps1c	3.5	AC	R2
RS204NRR	Renk Seed	9-23	—	—	94	100	103	2.0	Rps1k	3.0	—	RR
201 CNR	Anderson	9-23	—	93	93	96	104	2.0	Rps1c	3.0	—	RR
1908CNRR	Viking	9-23	—	97	91	98	104	1.9	Rps1k	3.5	Go	RR
2000R2N	Viking	9-23	—	—	90	99	99	2.0	Rps1k	3.0	CM	R2
7208	G2 (NuTech)	9-23	—	—	89	99	104	2.0	Rps1c	2.5	CM	RR
MN1803RR	Minnesota AES	9-23	84	82	85	100	102	1.8	Rps1	3.0	—	RR

Table 8 (continued). Performance and characteristics of Roundup Ready soybean varieties, southern zone; Lamberton, Waseca and Westbrook, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil					
K2-2101	Kruger	9-24	—	—	109	98	101	2.1	Rps1c	3.0	AC	R2
K-201RR/SCN	Kruger	9-24	108	106	105	100	101	2.0	Rps1c	2.5	CM	RR
21M2	Titan Pro SCI	9-24	—	—	104	99	102	2.1	Rps1c	3.0	—	R2
92Y30	Pioneer Brand	9-24	—	103	103	99	101	2.3	Rps1k	3.5	CM	RR
191 CNR	Anderson	9-24	—	97	101	96	104	1.9	Rps1k	3.5	—	RR
K2X19B9	Kruger	9-24	—	—	100	104	95	1.9	Rps1c	3.0	AC	R2
PB-2117NRR	PBR	9-24	106	101	100	101	98	2.1	S	3.0	Go	RR
PB-2207NRR	Sansgaard	9-24	106	104	99	96	104	2.2	Rps1k	3.0	Go	RR
6247	G2 (NuTech)	9-25	—	—	107	99	100	2.4	Rps1k	3.0	CM	RR
6224	AgSource	9-25	—	—	107	102	96	2.2	S	3.5	—	RR
NS 2105R2	NorthStar Genetics	9-25	—	—	106	99	101	2.1	Rps1c	3.0	CM	R2
DSR-2560/RR	Dairyland	9-25	—	—	105	104	95	2.5	S	3.0	—	RR
2324+RN	AgSource	9-25	—	—	103	99	101	2.3	S	5.0	—	RR
RS210NR2	Renk Seed	9-25	—	—	102	98	101	2.1	Rps1c	4.0	CM	R2
ML2269	Mustang	9-25	—	—	101	101	97	2.2	S	4.0	—	LL
PB-2099NR2	Prairie Brand	9-25	—	—	101	98	102	2.0	Rps1c	3.5	AC	R2
7199	NuTech	9-25	—	—	100	102	98	1.9	S	4.0	CM	RR
W 2222NRR	Wensman	9-25	—	—	100	96	102	1.9	Rps1c	3.5	CM	R2
7222	NuTech	9-25	—	103	97	95	103	2.2	Rps1k	3.5	CM	RR
7226	G2 (NuTech)	9-25	—	99	94	98	106	2.2	Rps1k	3.0	CM	RR
DSR-2300/RR	Dairyland	9-26	—	106	108	102	95	2.3	Rps1k *	3.5	—	RR
7212	G2 (NuTech)	9-26	—	—	107	96	104	2.1	Rps1k	3.5	CM	RR
L200N	Viking	9-26	—	—	103	102	97	2.0	Rps1k	3.0	TX	LL
PB-2439NR2	PBR	9-26	—	—	102	101	99	2.3	Rps1c	4.0	AC	R2
BT 7219NR	NorthStar Genetics	9-26	—	—	99	103	98	2.1	Rps1k	3.5	CM	RR
24M2	Titan Pro SCI	9-26	—	—	99	100	99	2.4	Rps1c	3.5	—	R2
23M9	Titan Pro SCI	9-27	—	—	114	101	97	2.3	S	4.5	—	R2
3229L	AgSource	9-27	—	—	105	106	93	2.2	S	3.5	—	LL
DSR-2200/RR	Dairyland	9-27	—	104	101	104	97	2.2	S	3.0	—	RR
6244	NuTech	9-27	—	—	92	97	100	2.4	S	3.5	CM	RR
3248L	AgSource	9-28	—	—	108	98	98	2.4	Rps1k	4.0	—	LL
Mean	—	9-24	50.8 bu/a	51.7 bu/a	53.7bu/a	33.7%	18.6%	—	—	—	—	—
LSD 20%	—	—	2%	3%	6%	—	—	—	—	—	—	—

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

Table 9. Performance and characteristics of soybean varieties,central zone; at soybean-cyst-nem- atode-infested sites (Danvers, Gaylord, Grove City and Rosemount), 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat	SCN Rating	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil						
MN0208CN	Minnesota AES	9-16	—	81	77	106	98	0.2	Rps1	2.5	R	—	CV
MN0308CN	Minnesota AES	9-16	77	72	66	103	101	0.3	Rps1k	2.5	R	—	CV
Sheyenne	No. Dakota AES	9-18	99	95	96	99	98	0.7	Rps1c	2.5	S	—	CV
MN0506RRCN	Minnesota AES	9-18	—	80	76	107	99	0.5	S	3.0	R	—	RR
MN1011CN	Minnesota AES	9-19	103	94	88	100	101	1.0	Rps1	3.0	R	—	CV
MN0902CN	Minnesota AES	9-19	100	94	85	105	95	0.9	S	2.5	R	—	CV
MN0606CN	Minnesota AES	9-20	102	99	97	100	101	0.6	S	2.5	R	—	CV
MN0806CN	Minnesota AES	9-20	105	100	95	99	105	0.8	S	3.0	R	—	CV
MN0908CN	Minnesota AES	9-21	—	101	97	101	99	0.9	S	2.5	R	—	CV
MN1106CN	Minnesota AES	9-21	—	97	96	102	101	1.1	Rps1k	3.0	R	—	CV
RY0819	Monsanto	9-22	—	—	92	98	97	0.8	Rps1c	3.0	R	AC	R2
AG0803	Asgrow	9-23	114	106	102	96	103	0.8	Rps1k	2.5	R	CM	RR
MN1410	Minnesota AES	9-23	101	101	92	102	100	1.4	S	2.5	S	—	CV
PB-1578NRR	Prairie Brand	9-24	—	120	114	96	104	1.5	Rps1k	3.0	R	Go	RR
AG1506	Asgrow	9-24	—	120	112	95	103	1.5	Rps1k	3.0	R	CM	RR
7154	NuTech	9-24	—	115	101	100	101	1.5	S	2.5	R	—	RR
PB-159X	PBR	9-25	—	—	106	98	98	1.5	Rps1c	3.0	R	AC	R2
AG1102	Monsanto	9-25	—	—	68	97	99	1.0	M*	2.5	R	—	R2
PB-141X	PBR	9-26	—	—	122	98	98	1.4	Rps1c	2.5	R	AC	R2
K2X16A9	Kruger	9-26	—	—	121	101	98	1.5	Rps1c	3.0	R	AC	R2

Table 9 (continued). Performance and characteristics of soybean varieties, central zone; at soybean-cyst-nematode-infested sites (Danvers, Gaylord, Grove City and Rosemount), 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	Seed Treat	SCN Rating	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil						
2814NRR	Gold Country Seed	9-26	—	—	117	97	103	0.9	Rps1c	3.0	R	—	R2
K2X15B9	Kruger	9-26	—	—	116	104	95	1.5	Rps1c	2.5	R	AC	R2
M-159NRR	Mustang	9-26	—	124	116	96	104	1.5	Rps1k	3.0	R	TX	RR
1440 EXP	Gold Country Seed	9-27	—	—	116	98	97	1.4	Rps1b	2.5	R	—	R2
7208	G2 (NuTech)	9-28	—	—	111	99	101	1.5	Rps1c	3.0	R	—	RR
7226	G2 (NuTech)	9-29	—	—	108	101	102	1.5	Rps1k	3.0	R	—	RR
7212	G2 (NuTech)	9-29	—	—	108	96	102	1.5	Rps1k	3.0	R	—	RR
7249	G2 (NuTech)	9-29	—	—	107	100	104	1.5	Rps1k	3.0	R	—	RR
Mean	—	9-23	37.7 bu/a	41.5 bu/a	43.2 bu/a	34.4%	18.1%	—	—	—	—	—	—
LSD 20%	—	—	2%	3%	6%	—	—	—	—	—	—	—	—

*M = Mixture of Rps1c and Rps1k.

Table 10. Performance and characteristics of soybean varieties, relative maturity (RM)> 1.5, central zone; at soybean-cyst-nematode infested sites (Danvers, Gaylord, Grove City and Rosemount), 2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	SCN Rating	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil						
MN1011CN	Minnesota AES	9-20	—	—	89	100	98	1.0	Rps1	2.5	R	—	CV
MN1106CN	Minnesota AES	9-21	—	—	88	100	104	1.1	Rps1k	2.5	R	—	CV
MN1701CN	Minnesota AES	9-23	—	—	99	103	99	1.7	S	3.0	R	—	CV
MN1204RRCN	Minnesota AES	9-23	—	—	92	103	101	1.2	—	3.5	R	—	RR
MN1410	Minnesota AES	9-24	—	—	95	102	101	1.4	S	3.0	S	—	CV
AG1802	Asgrow	9-25	—	—	109	98	103	1.8	Rps1k	3.5	R	CM	RR
Adv 1740CR	Advantage	9-25	—	—	108	97	102	1.7	Rps1k	3.0	R	—	RR
PB-1885NRR	Prairie Brand	9-25	—	—	107	96	103	1.8	Rps1k	3.0	R	Go	RR
Adv 2106CR	Advantage	9-25	—	—	105	97	102	2.1	Rps1c	3.5	R	—	RR
7186	G2 (NuTech)	9-25	—	—	102	102	99	1.6	Rps1k	2.5	R	CM	RR
91Y80	Pioneer Brand	9-25	—	—	99	98	100	1.8	Rps1k+Rps6	2.5	R	—	RR
Freeborn	Minnesota AES	9-25	—	—	93	106	102	1.6	Rps1	3.0	R	—	CV
PB-179X	Prairie Brand	9-26	—	—	115	99	101	1.7	Rps1k	3.5	R	AC	R2
AG2108	Asgrow	9-26	—	—	111	99	99	2.1	S	3.0	R	CM	RR
M-177NRR	Mustang	9-26	—	—	110	94	104	1.7	Rps1k	3.0	R	TX	RR
92Y20	Pioneer Brand	9-26	—	—	110	97	103	2.2	Rps1k	3.5	R	—	RR
RY1709	Monsanto	9-26	—	—	107	99	98	1.7	Rps1k	3.0	R	AC	R2
PB-2058NRR	Prairie Brand	9-26	—	—	107	98	102	2.0	Rps1k	3.5	R	—	RR
RY1719	Monsanto	9-26	—	—	106	99	97	1.7	S	3.0	R	AC	R2
AG1703	Asgrow	9-26	—	—	103	97	102	1.7	Rps1k	3.5	R	CM	RR
K2-1901	Kruger	9-26	—	—	103	99	96	1.9	Rps1k	2.5	R	AC	R2
IA1022	Iowa AES	9-26	—	—	102	96	103	2.0	S	3.0	R	—	CV
Adv 2170CR	Advantage	9-26	—	—	90	102	100	2.1	Rps1k	3.0	R	—	RR
92Y30	Pioneer Brand	9-27	—	—	110	99	99	2.3	Rps1k	4.0	R	—	RR
M-209NRR	Mustang	9-27	—	—	109	97	100	2.0	S	3.5	R	TX	RR
RY2409	Monsanto	9-27	—	—	108	96	99	2.4	Rps1c	2.5	R	AC	R2
K2X16A9	Kruger	9-27	—	—	106	100	99	1.6	Rps1k	3.5	R	AC	R2
PB-2099NR2	Prairie Brand	9-27	—	—	106	96	100	2.0	Rps1c	4.0	R	AC	R2
IA2068	Iowa AES	9-27	—	—	99	99	96	2.1	S	3.0	R	—	CV
K2X19B9	Kruger	9-27	—	—	96	102	98	1.9	Rps1c	4.0	R	AC	R2
Adv 2214R	Advantage	9-27	—	—	92	99	102	1.9	Rps1c	3.0	S	—	R2
W 3244NR2	Wensman Seed	9-28	—	—	112	99	98	2.4	Rps1c	3.5	R	—	R2
PB-201X	PBR	9-28	—	—	109	101	98	2.0	Rps1c	4.0	R	—	R2
1808RN	NuTech	9-28	—	—	106	98	102	1.8	Rps1c	3.0	R	—	RR
7225	NuTech	9-28	—	—	104	102	99	2.2	S	3.5	R	—	RR
92Y10	Pioneer Brand	9-28	—	—	102	99	96	2.1	Rps1k	2.5	R	—	RR
7201	NuTech	9-28	—	—	98	96	103	2.0	Rps1c	3.0	R	—	RR
W 3212NR2	Wensman Seed	9-29	—	—	106	96	102	2.2	Rps1c	3.0	R	—	R2
K2-2101	Kruger	9-29	—	—	104	97	102	2.1	Rps1c	3.0	R	AC	R2
K2X21A9	Kruger	9-29	—	—	104	106	94	2.1	—	3.0	S	AC	R2
7216	NuTech	9-29	—	—	103	100	99	2.1	S	3.0	R	—	RR
IA2094	Iowa AES	9-29	—	—	102	101	100	2.6	S	3.0	R	—	CV
RY2419	Monsanto	9-29	—	—	101	103	91	2.4	Rps1k	3.0	R	AC	R2
M190NRR	Mustang	9-29	—	—	101	99	99	1.9	Rps1c	4.5	R	TX	RR

Table 10 (continued). Performance and characteristics of soybean varieties, relative maturity (RM) > 1.5, central zone; at soybean-cyst-nematode infested sites (Danvers, Gaylord, Grove City and Rosemount), 2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	SCN Rating	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil						
7199	NuTech	9-29	—	—	97	101	102	1.9	Rps1c	3.5	R	CM	RR
Adv 2353R	Advantage	9-29	—	—	96	104	97	2.0	Rps1k	3.0	S	—	RR
7203	AgSource	9-29	—	—	91	106	94	2.0	S	4.0	R	—	RR
3229L	AgSource	9-29	—	—	85	106	94	2.2	S	2.5	R	—	LL
Adv 2207R	Advantage	10-1	—	—	95	101	97	2.0	S	3.0	R	—	RR
3248L	AgSource	10-2	—	—	82	103	106	2.4	Rps1k	3.0	R	—	LL
Mean	—	9-26	—	—	46.7 bu/a	34.3%	18.0%	—	—	—	—	—	—
LSD 20%	—	—	—	—	6%	—	—	—	—	—	—	—	—

Table 11. Performance and characteristics of soybean varieties, southern zone; at soybean-cyst nematode-infested sites (Gaylord, Lamberton, Waseca and Westbrook), 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	SCN Rating	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil						
MN1011CN	Minnesota AES	9-15	90	89	92	100	98	1.0	Rps1	2.5	R	—	CV
MN1106CN	Minnesota AES	9-16	—	90	90	100	104	1.1	Rps1k	3.0	R	—	CV
MN1204RRCN	Minnesota AES	9-19	—	88	87	103	102	1.2	—	4.0	R	—	RR
MN0908CN	Minnesota AES	9-19	—	—	85	102	100	0.9	S	3.5	R	—	CV
MN0902CN	Minnesota AES	9-19	—	—	83	104	96	0.9	Rps1k	2.5	R	—	CV
Freeborn	Minnesota AES	9-20	93	95	97	105	99	1.6	Rps1	3.0	R	—	CV
MN1410	Minnesota AES	9-20	93	92	95	101	102	1.4	S	2.5	S	—	CV
92Y20	Pioneer Brand	9-21	—	100	99	97	103	2.2	Rps1k	3.0	R	—	RR
MN1701CN	Minnesota AES	9-21	97	98	95	101	100	1.7	S	3.5	R	—	CV
AG1703	Asgrow	9-22	—	—	99	98	103	1.7	Rps1k	3.0	R	CM	RR
IA1022	Iowa AES	9-22	101	102	98	95	105	2.0	S	3.0	R	—	CV
AG1802	Asgrow	9-22	107	103	96	100	103	1.8	Rps1k	2.5	R	CM	RR
M-209NRR	Mustang	9-23	—	105	105	99	101	2.0	S	2.5	R	TX	RR
AG2107	Asgrow	9-23	103	102	102	100	103	2.1	Rps1k	3.0	R	CM	RR
PB-1885NRR	Prairie Brand	9-23	104	100	99	98	103	1.8	Rps1k	3.0	R	Go	RR
PB-2058NRR	Prairie Brand	9-23	—	101	98	100	102	2.0	Rps1k	2.5	R	AC	RR
IA1020	Iowa AES	9-23	—	—	98	100	93	1.9	—	3.5	R	—	CV
7216	NuTech	9-23	—	101	94	99	101	2.1	S	3.0	R	—	RR
Adv 2170CR	Advantage	9-23	—	—	90	99	101	2.1	Rps1k	2.5	R	—	RR
Adv 2214R	Advantage	9-23	—	—	90	97	103	1.9	Rps1c	3.0	S	—	R2
IA2073	Iowa AES	9-23	—	—	87	100	96	2.1	—	2.5	R	—	CV
MN1804CN	Minnesota AES	9-23	—	—	76	99	100	1.8	Rps1c	2.5	R	—	CV
7208	G2 (NuTech)	9-24	—	—	113	100	101	1.8	Rps1c	3.0	R	CM	RR
RY2409	Monsanto	9-24	—	—	110	97	102	2.4	Rps1c	3.5	R	—	R2
PB-1999NR2	Prairie Brand	9-24	—	—	109	101	98	1.9	Rps1k	2.5	R	AC/Go	R2
92Y30	Pioneer Brand	9-24	—	110	107	101	100	2.3	Rps1k	3.0	R	—	RR
1808RN	NuTech	9-24	—	—	107	99	100	1.8	Rps1c	2.5	R	—	RR
7201	NuTech	9-24	—	111	106	98	105	2.0	Rps1c	2.5	R	—	RR
7222	AgSource	9-24	104	104	105	96	104	2.2	Rps1k	3.0	R	—	RR
AG2108	Asgrow	9-24	108	108	104	99	101	2.1	S	3.0	R	CM	RR
K2-1901	Kruger	9-24	—	—	103	101	99	1.9	Rps1k	2.5	R	AC	R2
K2-2101	Kruger	9-24	—	—	101	98	103	2.1	Rps1c	2.5	R	AC	R2
K2X19B9	Kruger	9-24	—	—	100	103	98	1.9	Rps1c	3.0	R	AC	R2
K2X21A9	Kruger	9-24	—	—	100	104	96	2.1	—	2.5	S	AC	R2
7249	G2 (NuTech)	9-24	—	—	100	98	101	1.8	Rps1k	3.0	R	CM	RR
IA2068	Iowa AES	9-24	98	97	96	95	101	2.1	S	4.0	R	—	CV
7212	G2 (NuTech)	9-25	—	—	110	97	104	1.8	Rps1k	3.0	R	CM	RR
RY2419	Monsanto	9-25	—	—	109	104	90	2.4	Rps1k	2.5	R	—	R2
Adv 2202CR	Advantage	9-25	—	—	108	98	103	2.2	Rps1c	3.0	R	—	R2
W 3212NR2	Wensman Seed	9-25	—	—	108	98	103	2.2	Rps1c	2.5	R	CM	R2
M190NRR	Mustang	9-25	—	—	108	101	100	1.9	Rps1c	3.5	R	TX	RR
PB-2099NR2	Prairie Brand	9-25	—	—	106	99	102	2.0	Rps1c	3.0	R	—	R2
7226	G2 (NuTech)	9-25	—	113	106	99	104	1.8	Rps1k	2.5	R	CM	RR
2140	Gold Country Seed	9-25	—	—	106	97	103	2.1	Rps1c	2.5	R	—	R2

Table 11 (continued). Performance and characteristics of soybean varieties, southern zone; at soybean-cyst nematode-infested sites (Gaylord, Lamberton, Waseca and Westbrook), 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean		Maturity Rating	Phytophthora Gene	Chlorosis Score	SCN Rating	Seed Treat	Variety Type
			2007-2009	2008-2009	2009	Protein	Oil						
Adv 2106CR	Advantage	9-25	—	—	105	96	106	2.1	Rps1c	3.5	R	—	RR
PB-201X	PBR	9-25	—	—	103	105	97	2.0	Rps1c	2.5	R	AC	R2
7199	NuTech	9-26	—	—	105	101	98	1.9	Rps1c	3.5	R	—	RR
Adv 2353R	Advantage	9-26	—	—	98	102	98	2.0	Rps1k	3.0	S	—	RR
7203	AgSource	9-27	—	—	119	107	94	2.0	S	2.5	R	—	RR
W 3244NR2	Wensman Seed	9-27	—	—	113	102	97	2.4	Rps1c	2.5	R	CM	R2
3229L	AgSource	9-27	—	—	111	106	95	2.2	S	2.5	R	—	LL
M-259NRR	Mustang	9-27	—	—	106	97	99	2.4	Rps1k	3.0	R	TX	RR
Adv 2207R	Advantage	9-27	—	—	104	101	98	2.0	S	3.0	R	—	RR
3248L	AgSource	9-30	—	—	113	98	99	2.4	Rps1k	3.0	R	—	LL
Mean	—	9-23	41.8 bu/a	42.9 bu/a	47.8 bu/a	34.2%	18.3%	—	—	—	—	—	—
LSD 20%	—	—	2%	3%	6%	—	—	—	—	—	—	—	—

Table 12. Characteristics of special-use soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2009.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.	Seed Treat	Variety Type
07005	Thunder	0.05	Tofu	Yellow	—	3.0	2,508	—	CV
MN0071	Minnesota AES	00.7	General Purpose	Brown	Rps1	2.5	2,892	—	CV
OT05-20	Meridian Seeds	0.9	Tofu	Yellow	—	2.5	2,009	AX	RR
Cavalier	No. Dakota AES	00.7	General Purpose	Yellow	Rps6	2.5	2,508	—	CV
OT05-21	Meridian Seeds	0.7	Tofu	Yellow	—	3.0	2,009	AX	RR
MN0096SP	Minnesota AES	00.9	Higher Protein	Yellow	S	2.5	2,752	—	CV
MN0105	Minnesota AES	0.1	General Purpose	Yellow	Rps1c	3.0	2,686	—	CV
MN0107	Minnesota AES	0.1	General Purpose	Yellow	Rps1k	2.5	3,027	—	CV
TA8	Thunder	0.4	Natto	Yellow	—	3.0	4,540	—	CV
MN0095	Minnesota AES	0.0	General Purpose	Imperfect Black	Rps1	2.5	3,880	—	CV
MN0082SP	Minnesota AES	00.8	Small Seed	Yellow	Rps1	2.5	5,405	—	CV
MN0093SP	Minnesota AES	00.9	Small Seed	Grey	Rps1	3.0	4,882	—	CV
MN0306SP	Minnesota AES	0.3	Large Seed	Black	Rps1	3.0	2,131	—	CV
MN0094SP	Minnesota AES	00.9	Large Seed, Higher Protein	Black	Rps1	2.5	1,983	—	CV
TA10	Thunder	0.5	Natto	Yellow	—	3.0	4,989	—	CV
MN0104SP	Minnesota AES	0.1	Large Seed, Higher Protein	Black	Rps1	3.0	2,215	—	CV
MN0207SP	Minnesota AES	0.2	Small Seed	Yellow	Rps1	2.5	6,486	—	CV
MN0103SP	Minnesota AES	0.1	Small Seed	Yellow	Rps1	3.0	5,896	—	CV
MN0307SP	Minnesota AES	0.3	Large Seed	Yellow	Rps1c	3.5	2,259	—	CV
MN0605SP	Minnesota AES	0.6	Higher Protein	Buff	Rps1c	3.0	2,838	—	CV
MN0403SP	Minnesota AES	0.4	Small Seed	Yellow	Rps1	3.0	6,053	—	CV
MN0303SP	Minnesota AES	0.3	Small Seed	Yellow	Rps1	3.0	5,675	—	CV

Table 13. Performance of special-use soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2007-2009	2008-2009	2009	Protein	Oil
07005	Thunder	9-22	—	110	116	97	102
MN0071	Minnesota AES	9-22	103	99	104	95	105
OT05-20	Meridian Seeds	9-25	—	—	109	101	97
Cavalier	No. Dakota AES	9-25	—	89	84	97	102
OT05-21	Meridian Seeds	9-25	—	—	82	102	100
MN0096SP	Minnesota AES	9-26	98	87	82	111	95
MN0105	Minnesota AES	9-28	—	101	106	103	99
MN0107	Minnesota AES	9-30	—	118	132	98	101
TA8	Thunder	9-30	—	—	82	100	96
MN0095	Minnesota AES	10-3	99	121	127	94	109
MN0082SP	Minnesota AES	10-4	96	99	97	97	104
MN0093SP	Minnesota AES	10-5	109	111	112	93	109
MN0306SP	Minnesota AES	*	96	92	108	101	101
MN0094SP	Minnesota AES	*	—	96	97	104	99
TA10	Thunder	*	—	—	83	100	99
MN0104SP	Minnesota AES	*	104	93	81	105	98

Table 13 (continued). Performance of special-use soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2007-2009	2008-2009	2009	Protein	Oil
MN0207SP	Minnesota AES	*	95	94	94	95	98
MN0103SP	Minnesota AES	*	88	89	90	96	104
MN0307SP	Minnesota AES	*	109	100	106	102	107
MN0605SP	Minnesota AES	*	107	104	115	114	88
MN0403SP	Minnesota AES	*	—	—	80	101	96
MN0303SP	Minnesota AES	*	94	96	99	97	99
Mean	—	10-3	33.7 bu/a	34.1 bu/a	33.9 bu/a	35.8%	16.9%
LSD 20%	—	—	3%	4%	7%	—	—

* Variety not mature at killing frost.

Table 14. Characteristics of special-use soybean varieties, central zone; Becker, Morris and Rosemount, 2009.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.	Variety Type
MN0603SP	Minnesota AES	0.6	Small Seed	Yellow	Rps1	2.5	5,896	CV
MN0701	Minnesota AES	0.7	General Purpose	Yellow	Rps1	3.5	2,735	CV
MN0302	Minnesota AES	0.3	General Purpose	Buff	Rps1k	2.5	3,068	CV
MN0501SP	Minnesota AES	0.5	Small Seed	Yellow	Rps1	2.5	3,914	CV
MN0805SP	Minnesota AES	0.8	Small Seed	Yellow	Rps6	3.0	4,935	CV
MN0605SP	Minnesota AES	0.6	Higher Protein	Buff	Rps1c	3.0	2,752	CV
MN1203SP	Minnesota AES	1.2	Small Seed	Yellow	—	3.0	4,204	CV
MN0803SP	Minnesota AES	0.8	Higher Protein	Yellow	—	2.5	4,633	CV
MN1012SP	Minnesota AES	1.0	Small Seed	Yellow	Rps1	3.0	5,605	CV
Surge	Minn. & S.D. AES	0.9	General Purpose	Imperfect Black	Rps1	2.5	2,428	CV
MN0102SP	Minnesota AES	0.1	Small Seed	Yellow	Rps1	3.0	4,935	CV
MN0804SP	Minnesota AES	0.8	Higher Protein	Yellow	Rps1	2.5	2,873	CV
Sheyenne	No. Dakota AES	0.7	General Purpose	Yellow	Rps1c	2.5	2,785	CV
O.1692	Viking	1.6	Organic Feed	Yellow	S	2.5	2,987	CV
MN0907	Minnesota AES	0.9	General Purpose	Yellow	Rps1k+Rps6	2.5	2,624	CV
MN1309SP	Minnesota AES	1.3	Higher Protein	Black	Rps1	2.5	2,365	CV
MN0903SP	Minnesota AES	0.9	Large Seed, Higher Protein	Yellow	Rps1	4.5	2,609	CV
MN1401BL	Minnesota AES	1.4	Black Seed Coat	Black	Rps1	2.0	2,402	CV
MN1101SP	Minnesota AES	1.1	Large Seed, Higher Protein	Yellow	Rps1	2.5	2,121	CV
Vital	Falk's Seed Farm	1.1	Large Seed	Yellow	Rps1	2.5	2,236	CV
MN1410	Minnesota AES	1.4	General Purpose	Buff	S	3.0	2,820	CV
MN1104SP	Minnesota AES	1.1	Higher Protein	Yellow	Rps1	2.0	2,293	CV
MN0807SP	Minnesota AES	0.8	Higher Protein	Yellow	S	2.5	2,987	CV
MN1503SP	Minnesota AES	1.5	Higher Protein	Yellow	Rps1	2.5	2,293	CV

Table 15. Performance of special-use soybean varieties, central zone; Becker, Morris and Rosemount, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2007-2009	2008-2009	2009	Protein	Oil
MN0603SP	Minnesota AES	9-13	71	65	62	96	98
MN0701	Minnesota AES	9-15	—	107	108	96	102
MN0302	Minnesota AES	9-16	—	97	98	94	106
MN0501SP	Minnesota AES	9-17	72	79	87	99	102
MN0805SP	Minnesota AES	9-17	86	82	83	107	90
MN0605SP	Minnesota AES	9-19	—	104	98	112	85
MN1203SP	Minnesota AES	9-19	92	88	94	93	98
MN0803SP	Minnesota AES	9-19	85	85	90	101	97
MN1012SP	Minnesota AES	9-19	—	85	85	94	97
Surge	Minn. & S.D. AES	9-20	118	120	114	97	101
MN0102SP	Minnesota AES	9-20	—	83	87	99	92
MN0804SP	Minnesota AES	9-21	111	110	104	107	88
Sheyenne	No. Dakota AES	9-22	122	120	117	94	103
O.1692	Viking	9-23	—	—	130	93	102
MN0907	Minnesota AES	9-23	—	119	122	93	110
MN1309SP	Minnesota AES	9-24	—	112	114	101	98

Table 15 (continued). Performance of special-use soybean varieties, central zone; Becker, Morris and Rosemount, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2007-2009	2008-2009	2009	Protein	Oil
MN0903SP	Minnesota AES	9-24	101	100	95	104	95
MN1401BL	Minnesota AES	9-25	—	119	117	101	113
Vital	Falk's Seed Farm	9-25	—	—	109	100	100
MN1101SP	Minnesota AES	9-25	110	109	109	105	95
MN1410	Minnesota AES	9-26	122	128	125	97	105
MN1104SP	Minnesota AES	9-26	—	—	100	100	101
MN0807SP	Minnesota AES	9-26	—	87	94	114	84
MN1503SP	Minnesota AES	9-27	111	112	112	100	103
Mean	—	9-22	38.8 bu/a	37.8 bu/a	41.6 bu/a	37.1%	17.2%
LSD 20%	—	—	2%	3%	6%	—	—

Table 16. Characteristics of special-use soybean varieties, southern zone; Lamberton, Waseca and Westbrook, 2009.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.	Variety Type
MN1805SP	Minnesota AES	1.8	Large Seed, Higher Protein	Yellow	Rps1	3.5	4,054	CV
MN1310SP	Minnesota AES	1.3	Low Saturates	Imperfect Black	S	2.5	2,495	CV
MN1401BL	Minnesota AES	1.4	Black Seed Coat	Black	Rps1	2.5	2,236	CV
MN1309SP	Minnesota AES	1.3	Higher Protein	Black	Rps1	2.0	2,270	CV
MN1411SP	Minnesota AES	1.4	Large Seed	Yellow	Rps1c	2.0	1,846	CV
MN1505SP	Minnesota AES	1.5	Large Seed, Higher Protein	Yellow	Rps1	3.0	2,027	CV
MN1410	Minnesota AES	1.4	General Purpose	Buff	S	2.5	2,259	CV
MN1702SP	Minnesota AES	1.7	1% Linolenic Acid	Black	—	3.0	2,655	CV
MN1503SP	Minnesota AES	1.5	Large Seed, Higher Protein	Yellow	Rps1	3.5	1,974	CV
MN1101SP	Minnesota AES	1.1	Large Seed, Higher Protein	Yellow	Rps1	2.0	1,892	CV
MN1412SP	Minnesota AES	1.4	Higher Protein	Black	Rps1c	3.0	2,551	CV
IA1022N	Iowa AES	1.8	Organic Feed	Yellow	S	2.0	2,340	CV
IA1022	Iowa AES	1.8	General Purpose	Yellow	S	2.5	2,340	CV
MN1302	Minnesota AES	1.3	General Purpose	Buff	Rps1k	2.0	1,932	CV
MN1502SP	Minnesota AES	1.5	Large Seed, Higher Protein	Yellow	Rps1	2.5	1,948	CV
RoyalPro	Northland Organic	1.6	Higher Protein Tofu Type	Yellow	S	2.0	1,753	CV
O.2078N	Viking	2.0	Organic Feed	Yellow	S	2.5	2,402	CV
MN1104SP	Minnesota AES	1.1	Higher Protein	Yellow	Rps1	2.0	1,940	CV
MN1607SP	Minnesota AES	1.6	Large Seed, Higher Protein	Yellow	Rps1	2.5	1,932	CV
MN1308SP	Minnesota AES	1.3	Large Seed	Buff	Rps1c	2.0	1,861	CV
NorthPro 7	Northland Organic	1.6	Higher Protein Tofu Type	Yellow	S	2.0	1,720	CV
MN1806SP	Minnesota AES	1.8	Higher Protein	Yellow	Rps1	2.0	1,780	CV
SurePro	Northland Organic	2.0	Higher Protein Tofu Type	Yellow	S	2.0	1,746	CV
Vinton 81	Iowa AES	2.0	Large Seed, Higher Protein	Yellow	Rps1c	2.0	1,831	CV
O.2265	Viking	2.2	Organic Feed	Yellow	S	2.5	2,565	CV
MN2001SP	Minnesota AES	2.0	Large Seed, Higher Protein	Yellow	Rps1	2.0	1,746	CV
IA3024	Iowa AES	2.6	1% Linolenic Acid	Imperfect Black	S	3.5	2,389	CV

Table 17. Performance of special-use soybean varieties, southern zone; Lamberton, Waseca and Westbrook, 2007-2009.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2007-2009	2008-2009	2009	Protein	Oil
MN1805SP	Minnesota AES	9-14	92	83	69	110	88
MN1310SP	Minnesota AES	9-17	—	93	89	98	103
MN1401BL	Minnesota AES	9-18	—	107	109	99	114
MN1309SP	Minnesota AES	9-18	—	101	101	102	100
MN1411SP	Minnesota AES	9-18	—	88	90	101	98
MN1505SP	Minnesota AES	9-19	107	99	98	103	100
MN1410	Minnesota AES	9-20	124	116	113	98	105
MN1702SP	Minnesota AES	9-20	—	103	110	98	99
MN1503SP	Minnesota AES	9-20	110	103	108	101	100
MN1101SP	Minnesota AES	9-20	87	91	92	104	95
MN1412SP	Minnesota AES	9-20	—	85	89	114	83
IA1022N	Iowa AES	9-21	—	115	128	90	108
IA1022	Iowa AES	9-21	—	—	101	91	108
MN1302	Minnesota AES	9-21	106	99	100	101	100
MN1502SP	Minnesota AES	9-21	98	93	95	102	99
RoyalPro	Northland Organic	9-21	—	—	91	104	96
O.2078N	Viking	9-22	—	—	114	95	103
MN1104SP	Minnesota AES	9-22	—	107	108	98	103
MN1607SP	Minnesota AES	9-22	105	99	101	99	99
MN1308SP	Minnesota AES	9-22	—	99	98	101	98
NorthPro 7	Northland Organic	9-22	—	—	93	104	95
MN1806SP	Minnesota AES	9-23	—	88	85	108	94
SurePro	Northland Organic	9-24	—	—	106	106	96
Vinton 81	Iowa AES	9-24	82	88	96	104	94
O.2265	Viking	9-25	—	130	130	94	104
MN2001SP	Minnesota AES	9-27	90	83	82	107	95
IA3024	Iowa AES	9-29	—	125	128	91	103
Mean	—	9-21	40.3 bu/a	40.3 bu/a	45.1 bu/a	36.2%	17.6%
LSD 20%	—	—	2%	3%	6%	—	—

Table 18. Characteristics of publicly developed soybean varieties entered in 2009 tests.

Variety or Brand	Originator	Maturity Rating	Phytophthora Gene	BSR Reaction	SCN Reaction	Chlorosis Score	Variety Type
Cavalier	No. Dakota AES	00.7	Rps6	—	S	2.5	CV
Jim	No. Dakota AES	00.7	S	S	S	3.0	CV
MN0071	Minnesota AES	00.7	Rps1	S	S	3.0	CV
MN0095	Minnesota AES	0.0	Rps1	S	S	2.5	CV
Traill	No. Dakota AES	0.0	S	S	S	2.5	CV
MN0101	Minnesota AES	0.1	Rps1	—	S	2.5	CV
MN0105	Minnesota AES	0.1	Rps1c	—	S	2.5	CV
MN0106RR	Minnesota AES	0.1	Rps1	—	S	2.0	RR
MN0107	Minnesota AES	0.1	Rps1k	—	S	2.5	CV
MN0201	Minnesota AES	0.2	Rps1	—	S	2.5	CV
MN0208CN	Minnesota AES	0.2	Rps1	—	R	2.5	CV
MN0302	Minnesota AES	0.3	Rps1k	S	S	2.5	CV
MN0308CN	Minnesota AES	0.3	Rps1k	—	R	2.5	CV
MN0309RR	Minnesota AES	0.3	Rps1k	—	S	3.0	RR
MN0401RR	Minnesota AES	0.4	Rps1	—	S	2.5	RR
Ashtibula	No. Dakota AES	0.5	Rps1	—	S	2.5	CV
MN0502	Minnesota AES	0.5	Rps1k	—	S	2.5	CV
MN0503RR	Minnesota AES	0.5	S	—	S	3.5	RR
MN0504	Minnesota AES	0.5	Rps1	—	S	3.0	CV
MN0506RRCN	Minnesota AES	0.5	S	—	R	2.5	RR
MN0604	Minnesota AES	0.6	Rps6	—	S	3.0	CV
MN0606CN	Minnesota AES	0.6	Rps6	—	R	2.5	CV
Lambert	Minnesota AES	0.7	Rps1	S	S	2.0	CV
MN0701	Minnesota AES	0.7	Rps1	—	S	2.0	CV
Shenenne	No. Dakota AES	0.7	Rps1c	—	S	2.0	CV
MN0806CN	Minnesota AES	0.8	S	—	R	2.5	CV
MN0902CN	Minnesota AES	0.9	S	R	R	2.5	CV
MN0903SP	Minnesota AES	0.9	Rps1	—	S	3.5	CV

Table 18 (continued). Characteristics of publicly developed soybean varieties entered in 2009 tests.

Variety or Brand	Originator	Maturity Rating	Phytophthora Gene	BSR Reaction	SCN Reaction	Chlorosis Score	Variety Type
MN0907	Minnesota AES	0.9	Rps1k+Rps6	—	S	3.5	CV
MN0908CN	Minnesota AES	0.9	S	—	R	2.5	CV
Surge	Minn. & S.D. AES	0.9	Rsp1	S	S	2.0	CV
MN1011CN	Minnesota AES	1.0	Rps1	—	R	3.0	CV
MN1013	Minnesota AES	1.0	Rps1k	—	S	2.5	CV
MN1106CN	Minnesota AES	1.1	Rps1k	—	R	3.0	CV
MN1107RR	Minnesota AES	1.1	Rps1	—	S	2.5	RR
MN1204RRCN	Minnesota AES	1.2	—	—	R	3.5	RR
MN1302	Minnesota AES	1.3	Rps1k	—	S	2.0	CV
MN1310	Minnesota AES	1.3	Rps1k	—	S	3.0	CV
MN1401	Minnesota AES	1.4	Rps1	—	S	2.5	CV
MN1410	Minnesota AES	1.4	S	R	S	2.0	CV
MN0505	Minnesota AES	1.5	Rps1k	—	S	2.5	CV
MN1504RR	Minnesota AES	1.5	Rps1k	—	S	4.0	RR
MN1506	Minnesota AES	1.5	Rps1k	—	S	2.5	CV
Freeborn	Minnesota AES	1.6	Rps1	R	R	3.0	CV
IA1021	Iowa AES	1.6	S	—	S	3.0	CV
MN1609	Minnesota AES	1.6	Rps6	—	S	4.0	CV
IA1007	Iowa AES	1.7	—	—	S	3.0	CV
MN1701CN	Minnesota AES	1.7	S	—	R	2.5	CV
MN1702SP	Minnesota AES	1.7	—	—	S	3.0	CV
MN1801	Minnesota AES	1.8	Rps1c	S	S	3.0	CV
MN1803RR	Minnesota AES	1.8	Rps1	—	S	3.0	RR
IA1008	Iowa AES	2.0	S	—	R	2.5	CV
IA1022	Iowa AES	2.0	S	S	R	3.0	CV
IA2068	Iowa AES	2.1	S	S	R	4.0	CV

Table 19. 2009 Greenhouse bioassay, and field plot test of soybean varieties, central zone, 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)		Field Egg Count		Gaylord (Pi = 1043)	Grove City (Pi = 1404)
				FI	Res. ²	Gaylord	Grove City	Pf/Pi	Pf/Pi
AG0803	Asgrow	0.8	N	8.5	R	40.9	—	1.40	—
AG1506	Asgrow	1.5	N	8.3	R	40.4	17.6	1.38	29.61
7208	G2 (NuTech)	1.5	N	5.0	R	49.5	15.0	1.69	25.34
7226	G2 (NuTech)	1.5	N	3.8	R	53.8	27.9	3.38	1.99
7212	G2 (NuTech)	1.5	N	4.8	R	3.9	6.4	0.24	0.46
7249	G2 (NuTech)	1.5	N	10.9	MR	43.0	23.6	2.70	1.68
2814NRR	Gold Country Seed	0.9	N	7.2	R	12.0	1.2	1.08	0.11
1440 EXP	Gold Country Seed	1.4	N	4.5	R	15.5	25.0	1.38	2.24
K2X16A9	Kruger	1.5	88788	8.7	R	3.4	9.6	0.28	0.89
K2X15B9	Kruger	1.5	88788	6.9	R	62.8	20.7	5.03	1.93
RY0819	Monsanto	0.8	N	8.5	R	9.0	21.3	0.72	1.98
AG1102	Monsanto	1.0	N	9.4	R	42.6	23.0	32.58	4.92
M-159NRR	Mustang	1.5	88788	9.9	R	52.0	14.1	39.82	3.00
7154	NuTech	1.5	N	7.3	R	10.8	48.0	8.24	10.25
PB-141X	PBR	1.4	88788	6.4	R	3.4	11.1	0.25	1.10
PB-159X	PBR	1.5	88788	10.3	MR	21.5	8.0	1.56	0.79
PB-1578NRR	Prairie Brand	1.5	88788	10.0	MR	72.3	19.7	5.25	1.94
MN0308CN	Minnesota AES	0.3	88788	6.4	R	68.4	7.8	9.94	0.82
MN0606CN	Minnesota AES	0.6	88788	2.6	R	28.4	21.1	4.13	2.20
MN0806CN	Minnesota AES	0.8	88788	5.6	R	22.4	20.7	2.60	0.80
MN0902CN	Minnesota AES	0.9	88788	2.5	R	32.7	9.4	3.80	0.36
MN1011CN	Minnesota AES	1.0	88788	8.9	R	5.6	14.3	0.65	0.55
MN1106CN	Minnesota AES	1.1	209/437	22.8	MR	48.6	37.5	2.83	3.10
MN1410	Minnesota AES	1.4	S	81.2	S	90.3	123.0	5.25	10.16
Shenene	No. Dakota AES	0.7	S	96.5	S	109.7	77.0	6.38	6.35
MN0908CN	Minnesota AES	0.9	887/209	7.2	R	30.5	2.0	1.54	0.17
MN0506RRCN	Minnesota AES	0.5	88788	2.7	R	8.2	8.0	0.41	0.68
MN0208CN	Minnesota AES	0.2	88788	6.9	R	76.1	22.7	3.85	1.93

¹ The information of source of resistance was provided by companies. N = no data provided. 209/437 = PI209332 & or PI437654. 887/209 = PI88788 & 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 20. 2009 Greenhouse bioassay, and field plot test of soybean varieties, central zone, relative maturity (RM)>1.5, 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)		Field Egg Count		Gaylord (Pi = 1207)	Grove City (Pi = 2044)
				FI	Res. ²	Gaylord Ei	Grove City Ei	Pf/Pi	Pf/Pi
Adv 1740CR	Advantage	1.7	88788	11.2	MR	33.3	19.3	1.62	0.61
Adv 2214R	Advantage	1.9	88788	54.8	LR	86.3	112.6	4.19	3.53
Adv 2353R	Advantage	2.0	88788	76.5	S	146.6	39.4	17.55	0.73
Adv 2207R	Advantage	2.0	88788	59.0	LR	178.9	131.5	21.42	2.44
Adv 2106CR	Advantage	2.1	88788	8.4	R	18.6	89.0	2.23	1.65
Adv 2170CR	Advantage	2.1	88788	4.3	R	31.9	114.2	3.82	2.12
7203	AgSource	2.0	N	3.4	R	24.0	60.6	0.42	0.90
3229L	AgSource	2.2	N	6.0	R	34.8	28.3	0.61	0.42
3248L	AgSource	2.4	N	55.1	LR	114.2	129.5	11.65	2.57
AG1703	Asgrow	1.7	N	19.1	MR	127.5	53.5	13.00	1.06
AG1802	Asgrow	1.8	N	7.1	R	9.3	104.3	0.95	2.07
AG2108	Asgrow	2.1	N	8.7	R	11.8	37.4	0.23	1.46
7186	G2 (NuTech)	1.6	N	2.0	R	9.8	46.1	0.19	1.80
K2X16A9	Kruger	1.6	88788	8.7	R	18.1	12.6	0.79	0.28
K2-1901	Kruger	1.9	88788	5.9	R	2.0	41.7	0.09	0.92
K2X19B9	Kruger	1.9	88788	7.1	R	36.8	54.7	1.60	1.21
K2-2101	Kruger	2.1	88788	12.7	MR	26.5	79.5	1.15	1.76
K2X21A9	Kruger	2.1	88788	52.6	LR	120.6	144.9	2.12	3.41
RY1709	Monsanto	1.7	N	5.8	R	41.7	35.4	0.73	0.83
RY1719	Monsanto	1.7	N	9.0	R	27.0	65.4	0.47	1.54
RY2409	Monsanto	2.4	N	9.0	R	19.1	31.5	0.34	0.74
RY2419	Monsanto	2.4	N	7.5	R	41.2	63.0	1.27	0.54
M-177NRR	Mustang	1.7	88788	9.6	R	54.9	90.6	1.70	0.78
M190NRR	Mustang	1.9	88788	8.5	R	39.2	10.2	1.21	0.09
M-209NRR	Mustang	2.0	88788	11.3	MR	41.2	27.6	1.27	0.24
1808RN	NuTech	1.8	N	15.2	MR	28.4	57.5	0.75	0.69
7199	NuTech	1.9	N	9.8	R	17.2	59.1	0.45	0.71
7201	NuTech	2.0	N	9.0	R	3.4	102.4	0.09	1.23
7216	NuTech	2.1	N	19.9	MR	47.1	50.4	1.25	0.61
7225	NuTech	2.2	N	12.2	MR	60.3	22.8	1.66	0.41
PB-201X	PBR	2.0	88788	10.7	MR	81.4	100.0	2.24	1.80
91Y80	Pioneer Brand	1.8	88788	8.0	R	6.4	25.2	0.18	0.45
92Y10	Pioneer Brand	2.1	88788	14.7	MR	152.0	74.8	4.19	1.35
92Y20	Pioneer Brand	2.2	Peking	11.3	MR	28.9	25.2	1.55	0.51
92Y30	Pioneer Brand	2.3	88788	21.1	MR	25.5	36.2	1.37	0.74
PB-179X	Prairie Brand	1.7	88788	9.7	R	25.5	61.4	1.37	1.25
PB-1885NRR	Prairie Brand	1.8	88788	16.2	MR	21.1	42.5	1.13	0.86
PB-2058NRR	Prairie Brand	2.0	88788	15.8	MR	38.2	35.4	1.24	1.52
PB-2099NR2	Prairie Brand	2.0	88788	12.6	MR	58.3	40.2	1.89	1.73
W 3212NR2	Wensman Seed	2.2	N	8.9	R	27.5	218.9	0.36	4.09
W 3244NR2	Wensman Seed	2.4	N	26.1	MR	61.3	92.9	0.81	1.74
Freeborn	Minnesota AES	1.6	88788	6.3	R	19.1	78.0	0.25	1.46
IA1022	Iowa AES	2.0	—	5.5	R	59.8	57.5	0.79	1.07
IA2068	Iowa AES	2.1	—	4.6	R	84.3	117.3	6.36	2.08
IA2094	Iowa AES	—	—	21.7	MR	26.0	143.3	1.96	2.54
MN1011CN	Minnesota AES	1.0	88788	8.9	R	11.8	18.5	0.89	0.33
MN1106CN	Minnesota AES	1.1	209/437	22.8	MR	68.6	68.5	5.18	1.22
MN1204RRCN	Minnesota AES	1.2	88788	3.0	R	1.0	25.2	0.02	1.12
MN1410	Minnesota AES	1.4	S	81.2	S	100.0	100.0	1.61	4.45
MN1701CN	Minnesota AES	1.7	88788	5.3	R	52.0	52.0	0.83	2.31

¹ The information of source of resistance was provided by companies. N = no data provided. 209/437 = PI209332 & or PI437654. 887/209 = PI88788 & 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 21. Greenhouse bioassay, and field plot test of soybean varieties, central zone, for resistance to soybean cyst nematode, 2009.

Variety or Brand	Originator	Maturity Rating	SCN Resistance Source ¹	Greenhouse Test					Field Reproductive Index		
				HG Type 0 (Race 3)		Gaylord Ei	Waseca Ei	Westbrook Ei	Gaylord (Pi = 766) Pf/Pi	Waseca (Pi = 3624) Pf/Pi	Westbrook (Pi = 1222) Pf/Pi
				FI	Res. ²						
Adv 2202CR	Advantage	2.2	88788	11.3	MR	63.2	35	7.1	0.69	0.70	0.27
Adv 2106CR	Advantage	2.1	88788	8.4	R	61.8	49.1	—	0.67	0.98	—
Adv 2353R	Advantage	2.0	88788	76.5	S	113.2	84.3	7.1	12.07	1.66	0.17
Adv 2207R	Advantage	2.0	88788	59.0	LR	116.7	94.1	163.1	12.44	1.86	4.00
Adv 2170CR	Advantage	2.1	88788	4.3	R	26.4	32.9	—	2.81	0.65	—
Adv 2214R	Advantage	1.9	88788	54.8	LR	84.0	51.4	35.0	8.96	1.02	0.86
K2-1901	Kruger	1.9	88788	5.9	R	24.0	17.2	42.7	2.23	0.33	0.53
K2X19B9	Kruger	1.9	88788	7.1	R	19.4	16.5	—	1.81	0.32	—
K2-2101	Kruger	2.1	88788	12.7	MR	39.6	26.2	2.6	3.68	0.51	—
K2X21A9	Kruger	2.1	88788	52.6	LR	79.9	94.1	119.8	7.42	1.82	1.49
92Y20	Pioneer Brand	2.2	Peking	11.3	MR	9.4	31.4	11.7	0.26	1.10	0.17
92Y30	Pioneer Brand	2.3	88788	21.1	MR	79.2	45.8	—	2.24	1.60	—
PB-1885NRR	Prairie Brand	1.8	88788	16.2	MR	28.5	25.7	16.2	0.80	0.90	0.24
PB-1999NR2	Prairie Brand	1.9	88788	12.6	MR	13.9	36.5	8.4	0.39	1.28	0.13
PB-2058NRR	Prairie Brand	2.0	88788	15.8	MR	10.8	30.3	18.1	0.48	2.11	0.21
PB-2099NR2	Prairie Brand	2.0	88788	12.6	MR	41.0	32.9	19.4	1.82	2.29	0.23
PB-201X	PBR	2.0	88788	10.7	MR	31.3	8.5	9.7	1.38	0.59	0.11
7203	AgSource	2.0	N	3.4	R	21.2	26.2	—	0.94	1.82	—
3229L	AgSource	2.2	N	6.0	R	17.0	72.5	—	0.78	1.32	—
3248L	AgSource	2.4	N	55.1	LR	91.3	87.4	84.2	4.17	1.60	5.64
7222	AgSource	2.2	N	8.5	R	16.3	42.7	8.4	0.75	0.78	0.56
7208	G2 (NuTech)	1.8	N	5.0	R	10.1	47.8	8.4	0.46	0.87	0.56
7226	G2 (NuTech)	1.8	N	3.8	R	3.1	26.2	—	0.39	0.70	—
7212	G2 (NuTech)	1.8	N	4.8	R	6.6	18.3	—	0.83	0.49	—
7249	G2 (NuTech)	1.8	N	10.9	MR	24.3	36.5	7.1	3.04	0.97	0.10
7199	NuTech	1.9	N	9.8	R	30.2	27.8	12.9	3.78	0.74	0.19
1808RN	NuTech	1.8	N	15.2	MR	11.5	19.5	4.5	1.38	0.42	—
7201	NuTech	2.0	N	9.0	R	26.7	27.2	—	3.21	0.59	—
7216	NuTech	2.1	N	19.9	MR	42.0	47.3	1.3	5.04	1.02	—
W 3212NR2	Wensman Seed	2.2	N	8.9	R	13.9	33.4	11.0	1.67	0.72	0.16
W 3244NR2	Wensman Seed	2.4	N	26.1	MR	52.8	34.4	8.4	13.82	0.70	0.24
RY2409	Monsanto	2.4	N	9.0	R	13.5	28.8	—	3.55	0.59	—
RY2419	Monsanto	2.4	N	7.5	R	21.9	10	7.1	5.73	0.20	0.20
AG1703	Asgrow	1.7	N	19.1	MR	9.7	35.5	20.1	2.55	0.72	0.56
AG1802	Asgrow	1.8	N	7.1	R	5.2	28.3	5.2	0.36	0.83	0.07
AG2107	Asgrow	2.1	N	13.3	MR	24.0	30.3	—	1.64	0.89	—
AG2108	Asgrow	2.1	N	8.7	R	18.1	28.8	—	1.24	0.84	—
2140	Gold Country Seed	2.1	N	10.8	MR	26.4	23.9	—	1.81	0.70	—
M190NRR	Mustang	1.9	88788	8.5	R	3.8	18.5	3.2	0.39	0.91	—
M-259NRR	Mustang	2.4	88788	16.5	MR	12.8	39.1	9.7	1.32	1.92	0.12
M-209NRR	Mustang	2.0	88788	11.3	MR	33.0	27.2	35.6	3.39	1.34	0.42
Freeborn	Minnesota AES	1.6	88788	6.3	R	2.4	15.7	14.9	0.25	0.77	0.18
IA1020	Iowa AES		N	10.6	MR	4.2	14.9	11.0	0.21	0.59	0.11
IA1022	Iowa AES	2.0	N	5.5	R	19.1	17.2	—	0.96	0.68	—
IA2068	Iowa AES	2.1	N	4.6	R	26.0	15.7	1.3	1.32	0.62	—
IA2073	Iowa AES		N	95.7	S	114.2	78.1	85.4	5.77	3.10	0.87
MN0902CN	Minnesota AES	0.9	88788	2.5	R	16.0	24.7	12.3	0.44	0.72	0.15
MN0908CN	Minnesota AES	0.9	887/209	7.2	R	18.1	31.4	—	0.50	0.91	—
MN1011CN	Minnesota AES	1.0	88788	8.9	R	39.2	26.7	14.2	1.09	0.78	0.17
MN1106CN	Minnesota AES	1.1	209/437	22.8	MR	24.3	46.3	8.4	0.67	1.34	0.10
MN1204RRCN	Minnesota AES	1.2	88788	3.0	R	22.2	21.1	—	1.78	0.50	—
MN1410	Minnesota AES	1.4	S	81.2	S	85.8	121.9	114.6	6.86	2.91	1.65
MN1701CN	Minnesota AES	1.7	88788	5.3	R	3.1	25.7	22.7	0.25	0.61	0.33
MN1804CN	Minnesota AES	1.8	209332	11.4	MR	20.5	33.4	6.5	1.64	0.80	0.09

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%.