Minnesota Agricultural Experiment Station
University of Minnesota

Soybean

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Varietal Trials Results, January 2007

Minnesota Agricultural Experiment Station scientists annually conduct these tests of adapted public and private soybean varieties. Companies are charged a fee for each variety they enter and these fees 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 2006 growing season was drier than normal early then adequate moisture occurred during pod filling. It was also warmer than normal in 2006. The locations in the northern zone were affected to a greater degree than locations in the southern zone. In contrast to 2004 even the latest recommended varieties matured.

Tables 1 to 3 present data from the regular public and private variety tests that are conducted annually 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 4 and June 6 at planting rates of 160,000 plants/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. The 2005 data from Becker were not included due to a late season hailstorm.

Table 4 provides results of the very early (northern Minnesota) Minnesota Variety tests. These locations were added to provide data for environments not represented by the other location 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. Data from 2005 from Becker was not included due to a late season hailstorm.

Tables 8 and 9 provide results from the special performance tests of soybean cyst nematode resistant varieties in "infested" field sites near Lamberton, Waseca, and Otisco in the southern zone; and Gaylord, Atwater and Hector 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 regular performance tests.

Tables 10 to 12 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 these types of soybeans, which are typically grown under contract.

Table 13 provides important variety characteristics of publicly developed varieties entered in the 2006 tests.

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

Relative Maturity and Calendar Dates of Maturity

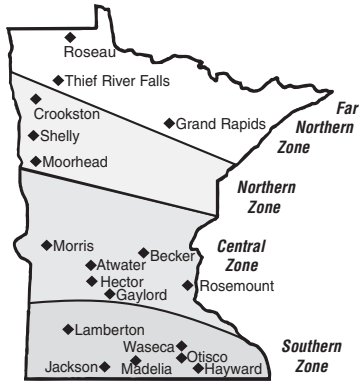
Soybeans respond to changing day length, so the actual calendar date of maturity achievement is affected by latitude. Each variety has a narrow range of north-south adaptation. Soybean yield and quality are assured if a variety arrives at physiological maturity before a season ending freeze occurs. This date is determined visually by noting the actual date when 95 percent of the pods show their genetically programmed mature color. These dates for 2006 are provided in the tables. Harvest dates are typically 7 to 14 days later, depending upon drying conditions.

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 2006 calendar date of maturity and not yield performance.

Later-maturing varieties can usually 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.



Soybean maturity zones.

In 2006 the 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-yielding variety was truly better yielding. A 20% level of significance is used in all tables, which 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 Granite Falls in 2006. 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 2006 tests are provided at the web site www.soybeans.umn.edu/home.htm. Sometimes chlorosis tolerance is described with numerical scores rather than word descriptors. These systems are compared below.

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 2006 season only. The protein and oil information is presented on a percent of the mean of the 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 were 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. This formula converts the protein and oil values to another moisture basis:

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

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:

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

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

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 your field. Genes can be incorporated into varieties to provide resistance to specific races of this disease.

Some published information refers to Phytophthora "tolerance" or "field resistance," which is not race specific and should not be confused with race-specific resistance. Reliable tests for tolerance have not yet been developed.

Data tables in this report indicate which Phytophthora gene or genes is/are present in each variety. An N indicates the information was either not provided by the entering company or not verified by greenhouse evaluation. The above listing tells you which resistance genes provide resistance to the various races.

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 the soybean is 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 of susceptible (S), and resistant (R) varieties planted in infested and non-infested fields in central and southern Minnesota are provided in tables 8 and 9.

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	■	■	■	■						■		■		■	■	■		■	■	■	■				■		

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 (<3000) a variety with an MR rating might be considered. Even though SCN reproduction is less on MS-rated varieties than S-rated varieties, for practical purposes these varieties should not be considered for planting in fields where SCN is present and being managed.

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, web site 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 white mold severity. Accurate ratings for soybean variety resistance to white mold are difficult to obtain because both infection and disease development are dependent 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. Gold Country 8716RR, SOI 0574RR, SOI 1540RR, SOI 1430RR, SOI 1534RR, Viking 1574RR, and Viking 1776RR are privately developed varieties reported to be resistant to BSR.

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. Soybean scientists previously developed some of these special-use varieties, which were general releases, but 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 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, i.e. 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 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 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 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.

Contact addresses and brand names for varieties entered in 2006.

Advantage Brand Soybean Seed (Advantage)	127303 Highway 22, Good Thunder, MN 56037	Adv@myclearwave.net	507-278-4087
Garst Seed Company	2369 330th St Box 500, Slater, IA 50244.	www.garstseed.com	1-888-GO-GARST
Albert Lea Seed House (Viking)	P.O. Box, 127, 1414 W. Main, Albert Lea, MN 56007	brian@alseed.com	507-373-3161
Anderson Seeds (Anderson)	37825 County Rd 63, St. Peter, MN 56082	njandrsn@myclearwave.net	507-246-5032
Bluestem Farm Supply LLC	55346 390th St, Mountain Lake, MN 56159	ericksonlee@earthlink.net	507-427-2097
Dairyland Seed Co., Inc. (Dairyland)	3570 Hwy H, P.O. Box 958, West Bend, WI 53095	www.dairylandseed.com	800-236-0163
Dyna-Gro (Dyna-Gro)	104 Harrison, Emmetsburg, IA 50536	al.schmitz@uap.com	712-852-2908
SunOpta-Earthwise (Earthwise)	4111 30th Ave S., Moorhead, MN	Jay.rehder@sunopta.com	218-287-5510
Farm Advantage	1275 Hwy 69, Belmond, IA 50421	jmeints@kalnet.com	641-444-3344
Gold Country Seed, (GCS)	16506 Hwy. 15 N, P.O. Box 604, Hutchinson, MN 55350	dschwartz@goldcountryseed.com	320-587-1050
Hyland Seeds (Hyland)	2 Hyland Drive, Blenheim, Ontario, Canada NOP1A0	jolmsted@hylandseeds.com	800-265-7403
Kaltenberg Seeds (Kaltenberg)	PO Box 278, Waunakee, WI 53597	ksfseeds@chorus.net	608-849-2312
Kruger Seed Company (Kruger)	33938 160th Ave., Box A, Dike, IA 50624	info@krugerseeds.com	800-772-2721
Latham Farms (Latham)	131 180th St., Alexander, IA 50420	markg@lathamseeds.com	641-692-3258
KSC/Challenger (KSC/Challenger)	33938 160th Ave., Box A, Dike, IA 50624	info@krugerseeds.com	800-772-2721
Latham Seed Company (Latham)	131 180th St., Alexander, IA 50420	markg@lathamseeds.com	641-692-3258

Contact addresses and brand names for varieties entered in 2006 (continued).

Legend Seeds (Legend)	PO Box 241,De Smet, SD 57231	Legend@legendseeds.net	605-854-3346
LG Seeds (LG Seeds)	N8181 940th St, River Falls, WI 54022	www.lgseeds.com	715-821-7788
Monsanto (Asgrow/Dekalb)	800 N. Lindberg Blvd, St. Louis, MO 63167	www.monsanto.com	815-754-4809
Mustang Seeds (Mustang)	PO Box 466, Madison, SD 57042	dalenelson@mustangseeds.com	605-480-1047
Northland Seed & Grain Corp (Northland Organic Foods Corp.)	495 Portland Ave, St Paul, MN 55102	Soybean@northlandorganic.com	651-221-0855
North Star Genetics	PO Box 40, Wanamingo, MN 55983	nsgen1@frontiernet.net	507-824-2878
Nutech Seed (Nutech Seed)	6131 North Fork Rd, Ames, IA 50010	www.nutechseed.com	800-368-9528
NK Brand Seed (NK)	7500 Olson Memorial Highway, Golden Valley, MN 55427	gary.prescher@syngenta.com	800-445-0956
Peterson Farm Seed (PFS)	3104 164th Ave SE, Harwood, ND 58042	jerad@greatsoybeans.com	701-282-7476
Pioneer HiBred International, Inc. (Pioneer)	99 Navaho Ave. Suite 101A, Mankato MN 56001	alan.scott@pioneer.com	507-625-3045
Prairie Brand Research (PBR)	15 X Ave., Story City, IA 50248	mike@prairiebrandseed.com	515-733-2101
Prairie Brand Seed Company (Prairie Brand)	15 X Ave., Story City, IA 50248	mike@prairiebrandseed.com	515-733-2101
Proseed (Proseed)	705 E Brewster, Harvey, ND 58341	proseed@ndak.net	701-324-4177
Renk Seed Co. (Renk)	6800 Wilburn Rd., Sun Prairie, WI 53590	arenk@renkseed.com	608-837-7351
Richland Organics (Richland Organics)	100N 10th St, Breckenridge, MN 56520	andy@richlandorganics.com	218-643-1797
Sand Seed Service, Inc. (Sands)	PO Box 648, Marcus, IA 51035	soi@midlands.net	712-376-4135
Sansgaard Seed Farms, Inc. (Sansgaard)	15 X Avenue, Story City, IA 50248	mike@prairiebrandseed.com	515-733-2101
Seeds 2000 (Seeds 2000)	PO Box 200, Breckenridge, MN 56520	info@seeds2000.net	888-786-7333
Sodak Genetics (Sodak Genetics)	Box 2207A, SDSU, Brookings, SD 57007	neal.toster@sdstate.edu	605-688-5418
Star Brand Researc (Star)	PO Box 648, Marcus IA 51035	soi@midlands.net	712-376-4135
Syngenta Seeds (NK Brand)	26241 Anna Lake Rd, Underwood, MN 56586	jay.stroh@syngenta.com	218-826-6380
		gary.prescher@syngenta.com	800-445-0956
Terning Seeds (Terning)	15365 60th st SW, Cokato, MN 55321	dterning@hotmail.com	320-286-2168
Thompson Seeds (Thompson Seeds)	40321 130th Ave. (Thompson), Leland, IA 50453	www.thompsonseed.com	641-567-3350
Thunder Seed (Thunder)	3008 210th St. N, Hawley, MN 54549	mpetermann@yahoo.com	888-274-9243
Trelay Seeds (Trelay)	11623 State Road 80, Livingston, WI 53544	jasonb@trelay.com	608-943-6363
Wensman Seed Company (Wensman)	P.O. Box 190, Wadena, MN 56482	wensman@wensmanseed.com	218-631-2954
Ziller Seed Co., Inc. (Ziller)	76374 380th St, Bird Island, MN 55310	zscsales@zillerseed.com	800-752-1797

Table 1. Performance and characteristics of public and private soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2004-2006.

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
MN0071	Minn.AES	8-31	83	85	79	93	100	00.7	Rps1	4.3
Bravado	Earthwise	9-7	-	-	95	88	98	00.8	S	3.9
Atwood	Earthwise	9-9	-	93	100	96	95	00.6	S	4.0
Traill	N.D. AES	9-11	105	99	101	103	89	0.0	Rps1	3.5
Jim	N.D. AES	9-11	95	93	93	97	92	00.8	S	3.9
Colibri	Earthwise	9-13	-	-	85	92	91	00.3	S	3.9
MN0101	Minn.AES	9-14	-	103	100	101	90	0.1	Rps1	4.0
MN0105	Minn.AES	9-14	-	99	99	105	88	0.1	Rps1c	4.3
MN0304	Minn.AES	9-15	103	106	109	101	92	0.3	Rps1k	3.6
MN0201	Minn.AES	9-15	100	101	106	109	87	0.2	Rps1	3.8
Kamichis	Earthwise	9-16	-	-	97	115	80	00.3	S	4.6
MN0302	Minn.AES	9-19	106	109	118	100	91	0.3	Rps1k	4.0
Lambert	Minn.AES	9-26	108	112	120	100	94	0.8	Rps1	4.0
Mean		9-13	41.5 bu/a	44.2 bu/a	43.9 bu/a	34.1%	19.1%			
LSD 20%			5%	6%	6%					

Table 2. Performance and characteristics of public and private soybean varieties, central zone; Becker, Morris and Rosemount, 2004-2006.

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
MN0302	Minn. AES	9-11	93	91	98	99	104	0.3	Rps1k	2.6
Lambert	Minn. AES	9-13	99	100	103	96	106	0.8	Rps1	3.1
Panther	Earthwise	9-13	-	-	85	101	99	0.5	S	3.7
MN1005	Minn. AES	9-17	104	101	102	102	99	1.0	Rps1k	3.6
MN1009	Minn. AES	9-18	-	95	93	99	101	1.0	Rps1k	3.1
Kato	Minn. AES	9-20	91	87	88	108	95	1.3	Rps1	2.8
MN1302	Minn. AES	9-21	108	109	104	100	98	1.3	Rps1k	3.5
MN1410	Minn. AES	9-22	-	-	111	101	98	1.4	Rps1k	3.5

Table 2. Performance and characteristics of public and private soybean varieties, central zone; Becker, Morris and Rosemount, 2004-2006 (continued).

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
NT-140	NuTech	9-22	-	112	110	99	102	1.4	S	3.6
Minori	Earthwise	9-22	-	-	99	100	98	1.4	Rps1k	3.8
MN1401	Minn. AES	9-22	-	-	93	99	101	1.4	Rps1	3.0
NT-176	NuTech	9-23	-	-	108	99	95	1.6	S	3.7
Parker	Minn. AES	9-24	105	106	108	97	101	1.5	Rps1	3.6
Mean		9-19	49.9 bu/a	55.3 bu/a	45.8 bu/a	37.4%	16.6%			
LSD 20%			4%	6%	8%					

Table 3. Performance and characteristics of public and private soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2004-2006.

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
Surge	Minn. & S.D AES	9-17	89	86	92	109	101	0.9	Rps1	4.0
MN1302	Minn. AES	9-22	100	99	102	97	103	1.3	Rps1k	3.6
Parker	Minn. AES	9-24	103	101	100	101	102	1.5	Rps1	4.5
MN1410	Minn. AES	9-25	-	-	103	104	97	1.4	Rps1k	4.4
IA1006	Iowa AES	9-26	103	101	99	99	98	1.6	S	4.2
MN1801	Minn. AES	9-26	99	98	95	99	105	1.8	Rps1c	4.4
IA1008	Iowa AES	9-26	98	101	94	100	95	2.0	S	4.1
IA2050	Iowa AES	9-27	106	103	108	101	101	2.1	S	4.4
NT-211	NuTech	9-27	-	113	102	100	99	2.1	S	4.3
NT-222	NuTech	9-29	-	-	110	102	97	2.2	S	4.4
NT-242 SCN	NuTech	9-30	-	-	101	97	101	2.4	S	3.9
2171CN	Viking	9-30	-	-	100	93	106	2.1	S	3.8
NT-233	NuTech	9-30	-	-	98	98	98	2.2	S	3.9
IA2008R	Iowa AES	9-30	101	97	92	98	97	2.1	Rps1k	4.1
L2400 Brand	Latham	10-1	-	-	102	100	101	2.4	S	4.4
Mean		9-27	53.6 bu/a	58.8 bu/a	53.3 bu/a	35.3%	17.8%			
LSD 20%			5%	6%	7%					

Table 4. Performance and characteristics of conventional and Roundup Ready public and private soybean varieties, far northern zone; Crookston, Roseau and Thief River Falls, 2004-2006.

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
K-003RR	KSC/Challenger	9-4	-	-	91	93	109	0.03	S	3.7
NS0011RR	NorthStar Genetics	9-6	-	-	92	99	104	00.5	S	3.4
30B04	Dyna-Gro	9-9	-	103	97	101	102	.04	Rps1k	3.3
NS0041RR	NorthStar Genetics	9-9	-	-	90	102	98	00.3	S	3.4
MN0071	Minn.AES	9-9	96	91	88	99	103	00.7	Rps1	3.9
Jim	N.D. AES	9-9	92	89	82	100	96	00.8	S	3.6
NT-0066RR	NuTech	9-10	-	-	104	93	108	00.5	Rps1k	3.3
06004RR	PFS	9-10	-	102	101	95	107	00.9	Rps1k	3.7
Kamichis	Earthwise	9-10	-	-	101	99	99	00.3	S	3.6
426RR	Gold Country	9-10	-	-	98	95	105	00.8	Rps1k	3.7
27003RR	Thunder	9-10	-	-	91	97	106	00.3	Rps6	3.7
LS0036RR	Legend	9-11	-	-	99	97	107	0.03	S	3.0
W20051RR	Wensman	9-11	-	99	98	98	104	00.5	Rps1k	3.3
PB-00425RR	Prairie Brand	9-11	-	-	97	96	105	00.4	Rps1k	3.2
K-006RR	Kruger	9-11	-	-	95	98	107	0.07	Rps1k	3.6
S00-K5	NK Brand	9-11	-	-	90	105	97	0.05	Rps1c	3.9
DSR-C900/RR	Dairyland	9-11	-	-	90	103	103	00.9	S	3.7
AG00603	Asgrow	9-11	-	-	89	97	98	.06	Rps1	3.2
Colibri	Earthwise	9-11	-	-	84	93	96	00.3	S	3.8
W20074RR	Wensman	9-12	-	-	108	98	104	00.7	Rps1k	3.3
K-007RR	KSC/Challenger	9-12	-	-	104	102	98	0.07	Rps1k	3.3
K-005RR	KSC/Challenger	9-12	-	-	101	98	102	0.06	S	3.5
RR50-04	Proseed	9-12	-	100	101	102	98	0.04	Rps1k	4.0
07006RR	PFS	9-12	-	-	94	103	96	00.6	Rps1k	3.8

Table 4. Performance and characteristics of conventional and Roundup Ready public and private soybean varieties, far northern zone; Crookston, Roseau and Thief River Falls, 2004-2006 (con't).

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
07008RR	PFS	9-13	-	-	110	96	108	00.8	Rps1k	3.0
EXP5007ARR	Monsanto	9-13	-	-	108	96	103	.07	Rps1k	3.5
W20091RR	Wensman	9-13	108	104	105	101	101	00.9	Rps1k	3.3
PB-00736RR	PBR	9-13	-	-	104	103	96	00.7	S	3.8
NT-0055RR	NuTech	9-13	-	-	103	97	99	00.4	S	3.6
RR60-06	Proseed	9-13	-	-	103	104	97	0.06	Rps1k	3.4
PB-00576RR	PBR	9-13	-	-	102	97	101	00.5	S	3.5
NS0031RR	NorthStar Genetics	9-13	-	-	101	97	104	00.5	S	3.6
30A06	Dyna-Gro	9-13	-	-	95	105	94	.06	Rps1k	3.1
RR Ramsey	Hyland Seeds	9-13	-	94	95	103	98	00.5	S	3.9
26004RR	Thunder	9-13	-	-	91	107	95	00.4	Rps1k	3.6
RR50-07	Proseed	9-14	-	109	115	95	105	0.07	Rps1k	3.7
PB-00845RR	Prairie Brand	9-14	-	-	113	98	103	00.8	S	3.6
M-0096RR	Mustang	9-14	-	-	109	99	104	.009	Rps6	3.9
26006RR	Thunder	9-14	-	-	106	100	101	00.6	Rps6	3.5
RR60-05	Proseed	9-14	-	-	105	98	101	0.05	S	3.8
PB-00645RR	Prairie Brand	9-14	-	-	104	98	102	00.6	S	3.5
26009RR	Thunder	9-14	-	-	104	102	99	00.9	Rps6	3.8
PB-00965RR	Prairie Brand	9-14	-	-	104	101	103	00.9	S	3.2
30M09	Dyna-Gro	9-14	-	98	93	106	98	.09	S	3.6
DSR-C700/RRSTS	Dairyland	9-14	-	-	92	97	96	00.7	S	3.9
LS0065RR	Legend	9-15	-	-	111	97	106	0.06	Rps1k	3.4
T-0090RR	Thompson Seeds	9-15	-	-	108	101	102	00.8	S	3.7
07009RR	PFS	9-15	-	-	105	99	102	00.9	S	3.8
K-009+RR	Kruger	9-15	-	105	104	100	103	0.09	S	3.5
W20092RR	Wensman	9-15	-	104	102	103	99	00.9	S	3.3
Traill	N.D. AES	9-15	103	100	101	103	94	0.0	Rps1	3.4
Atwood	Earthwise	9-15	-	103	100	101	98	00.6	S	3.9
K-008RR	Kruger	9-16	-	-	113	99	101	0.08	S	3.3
S01-T5	NK Brand	9-16	-	103	110	107	94	0.1	Rps1c	4.1
RG200	RoughRider Genetics	9-16	97	94	98	107	92	0.0	S	3.6
M-0087RR	Mustang	9-17	-	-	118	97	101	.008	Rps6	4.0
RR Royal	Hyland Seeds	9-17	-	102	105	101	98	00.9	S	3.8
0188RR	Garst Seed	9-17	-	-	102	103	96	0.1	S	3.7
MN0101	Minn.AES	9-17	104	101	101	104	95	0.1	Rps1	3.8
NT-0220RR	NuTech	9-18	-	-	114	96	96	0.1	Rps1k	4.1
NT-0088RR	NuTech	9-18	-	-	100	97	103	00.7	S	3.9
DSR-C800/RR	Dairyland	9-18	-	103	100	102	98	00.8	S	4.2
90M20	Pioneer Brand	9-18	-	-	97	93	103	02	Rps1k	4.0
Bravado	Earthwise	9-18	-	103	91	118	81	00.8	S	4.6
MK0205	Richland Organics	9-19	-	-	93	104	93	0.1	S	3.2
T-0252+RR	Thompson Seeds	9-20	-	-	110	104	95	0.1	S	3.7
90M01	Pioneer Brand	9-23	-	94	95	99	100	00	Rps1k	3.4
NS0021RR	NorthStar Genetics	9-28	-	-	80	102	95	0.4	Rps1k	4.2
Mean		9-14	36.8 bu/a	42.7 bu/a	49.5 bu/a	34.7%	18.4%			
LSD 20%			5%	6%	8%					

Table 5. Performance and characteristics of Roundup Ready soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2004-2006.

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
K-003RR	KSC/Challenger	8-30	-	-	59	96	110	0.03	S	3.5
NS0011RR	NorthStar Genetics	9-6	-	-	73	98	108	0.05	S	2.8
LS0094RR	Legend	9-8	-	-	88	98	103	0.09	Rps1	4.3
W20051RR	Wensman	9-8	-	-	82	100	103	00.5	Rps1k	3.2
K-006RR	Kruger	9-9	-	-	87	97	106	0.07	Rps1k	2.9
W20091RR	Wensman	9-10	-	-	84	97	105	00.9	Rps1k	3.4
90M01	Pioneer Brand	9-11	-	93	96	98	105	0.001	Rps1k	3.3
K-007RR	KSC/Challenger	9-11	-	-	93	105	98	0.07	Rps1k	3.2

Table 5. Performance and characteristics of Roundup Ready soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2004-2006 (continued).

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
0081RR	Seeds 2000	9-12	-	-	102	96	106	0.08	Rps1k	3.4
PB-00845RR	Prairie Brand	9-12	-	101	96	98	105	00.8	Rps1k	3.3
26009	Thunder	9-12	-	-	92	100	103	00.9	Rps6	3.3
K-005RR	KSC/Challenger	9-12	-	-	90	102	102	0.06	S	3.5
NS0031RR	NorthStar Genetics	9-12	-	-	88	98	104	0.05	S	3.6
31F02	Dyna-Gro	9-12	-	90	83	98	100	.2	S	3.6
PB-00965RR	Prairie Brand	9-13	-	100	99	101	105	00.9	S	3.5
K-009+RR	Kruger	9-13	-	98	92	103	103	0.09	S	3.6
DKB009-51	Dekalb	9-13	-	89	89	105	96	0.09	Rps1k	3.8
W20092RR	Wensman	9-13	-	96	89	98	108	00.9	S	3.5
2502RR	Thunder	9-13	-	90	83	102	102	0.2	S	3.7
RR Ridgeway	Hyland Seeds	9-14	-	-	90	100	98	0.2	S	3.6
RG200	Rough Rider Genetics	9-14	92	89	89	103	98	0.0	Rps1	3.4
LS0255RR	Legend	9-14	-	-	86	97	101	0.2	S	3.4
RR Royal	Hyland Seeds	9-15	-	95	89	106	95	00.9	S	3.6
K-008RR	Kruger	9-16	-	-	106	102	101	0.08	S	3.3
DSR-0501/RRSTS	Dairyland	9-16	-	101	99	102	97	0.5	S	3.6
90M20	Pioneer Brand	9-17	102	102	101	95	102	0.2	Rps1k	3.5
RR50-30	Proseed	9-17	-	98	99	101	101	0.3	Rps1k	4.0
0312RR	Garst Seed	9-17	-	-	97	114	92	0.3	S	3.9
RR60-20	Proseed	9-17	-	-	95	108	98	0.2	S	3.9
AG0301	Asgrow	9-18	108	108	106	98	99	0.3	Rps1k	3.6
0188RR	Garst Seed	9-18	-	-	98	104	96	0.1	S	3.8
33K02	Dyna-Gro	9-19	-	-	109	102	99	.2	Rps1k	4.0
PB-0216RR	PBR	9-19	-	-	100	102	99	0.2	Rps1k	4.0
PB-0554RR	Prairie Brand	9-20	111	112	111	99	99	0.5	S	3.4
0704RR	PFS	9-20	-	-	107	100	103	0.4	Rps6	3.8
RR Reliant	Hyland Seeds	9-20	-	98	97	103	97	0.3	S	3.7
M-036RR	Mustang	9-21	-	103	110	98	98	0.3	Rps1	3.9
RS035RR	Renk Seed	9-21	-	109	108	64	67	0.3	S	3.7
T-0304RR	Thompson Seeds	9-21	-	-	100	100	103	0.2	S	3.9
SOI0660RR	Sands of Iowa	9-21	-	96	96	101	98	0.6	Rps1k	3.3
DSR-0401/RR	Dairyland	9-22	-	110	110	105	99	0.4	S	3.8
DST05-000/RR	Dairyland	9-22	-	-	110	106	94	0.5	S	3.9
T-0525RR	Thompson Seeds	9-22	-	-	100	98	102	0.3	S	3.4
NS0062RR	NorthStar Genetics	9-22	-	-	100	99	101	0.06	S	3.5
RR Rugged	Hyland Seeds	9-22	93	93	99	104	99	0.3	S	4.2
PB-0436RR	PBR	9-22	-	-	98	102	102	0.4	Rps6	3.8
2703RR	Thunder	9-23	-	-	119	100	100	0.3	Rps6	3.9
W2030RR	Wensman	9-23	-	-	116	97	105	0.3	Rps1	3.1
RR60-40	Proseed	9-23	-	-	114	96	104	0.3	Rps1	3.2
M-047RR	Mustang	9-23	-	-	111	97	103	0.4	Rps6	3.5
703RR	Thunder	9-23	-	-	110	97	101	-	S	3.6
32T03	Dyna-Gro	9-23	-	-	110	97	104	.3	Rps1	3.3
NT-0660RR	NuTech	9-23	-	-	109	102	100	0.3	S	3.5
NT-0636RR	NuTech	9-23	-	-	105	99	97	0.3	S	3.9
NS0021RR	NorthStar Genetics	9-23	-	-	98	104	96	0.04	Rps1k	3.8
PB-0636RR	PBR	9-24	-	-	124	102	96	0.6	S	4.0
NT-0330RR	NuTech	9-24	-	-	117	98	104	0.2	Rps1	3.4
DSR-0701/RR	Dairyland	9-24	-	-	113	104	99	0.7	Rps1k	3.5
T-0701RR	Thompson Seeds	9-24	-	-	111	98	97	0.4	Rps1k	3.8
K-042RR	Kruger	9-24	-	-	110	97	102	0.4	Rps1	3.0
T-0706RR	Thompson Seeds	9-24	-	-	107	100	98	0.4	Rps1c	3.4
MN0401RR	Minn. A.E.S.	9-24	100	103	98	103	97	0.4	Rps1	3.7
0703RR	PFS	9-24	-	-	95	107	95	0.3	Rps1k	3.8
2703RR	Gold Country	9-25	-	-	120	98	103	0.3	Rps1	3.0
PB-0356RR	PBR	9-25	-	-	112	97	103	0.3	Rps1	3.6
AG0604	Asgrow	9-25	-	-	104	101	101	0.6	Rps1k	4.0
SOI0547RR	Sands of Iowa	9-25	-	109	104	101	96	0.6	S	4.2
MN0305RR	Minnesota A.E.S.	9-25	-	-	101	101	102	0.3	Rps1k	3.9

Table 5. Performance and characteristics of Roundup Ready soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2004-2006 (continued).

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	
ScoreSOI0766RR	Sands of Iowa	9-26	-	-	110	100	98	0.7	S	3.3
SOI0579RR	Sands of Iowa	9-27	-	-	114	99	99	0.5	Rps1	3.4
0606RR	PFS	9-27	-	-	104	101	99	0.6	S	3.7
RR20-40	Proseed	9-27	-	102	91	97	103	0.3	Rps1k	4.3
NT-0616RR	NuTech	9-28	-	111	106	99	100	0.3	Rps1	3.8
PB-0565RR	Prairie Brand	9-29	-	111	107	99	97	0.5	S	3.7
0549RR	Garst Seed	9-29	-	-	99	101	102	0.5	S	3.8
MN0206RR	Minnesota A.E.S.	9-29	94	93	86	106	102	0.2	Rps1k	4.0
Mean		9-19	46.2 bu/a	49.4 bu/a	49.1bu/a	32.8%	19.2%			
LSD 20%			5%	6%	8%					

Table 6. Performance and characteristics of Roundup Ready soybean varieties, central zone; Becker, Rosemount and Morris, 2004-2006.

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
AG0604	Asgrow	9-11	-	-	93	98	104	0.6	Rps1k	3.8
RR Reliant	Hyland Seeds	9-12	-	79	79	103	98	0.3	S	3.4
7063	Farm Advantage	9-13	-	104	105	98	102	0.6	S	4.0
DSR-0903/RR	Dairyland	9-13	-	-	103	101	107	0.9	S	3.8
NS0810RR	NorthStar Genetics	9-13	-	-	99	104	102	0.8	S	3.8
K-042RR	Kruger	9-13	-	-	99	96	106	0.4	Rps1	3.1
PB-0636RR	PBR	9-13	-	-	95	99	100	0.6	S	3.3
RS076RR	Renk Seed	9-13	-	-	95	106	99	0.7	Rps1	3.8
PB-0796RR	PBR	9-13	-	-	93	100	100	0.7	Rps1c	2.8
K-072RR	Kruger	9-15	-	-	107	102	98	0.7	S	3.9
RR40-70	Proseed	9-15	-	101	103	102	102	0.7	Rps1	3.8
36N05	Dyna-Gro	9-15	-	99	100	99	103	.7	S	3.3
DSR-0902/RRSTS	Dairyland	9-15	-	-	94	96	106	0.9	Rps1k	3.3
K-056RR	KSC/Challenger	9-15	-	94	93	101	103	0.6	Rps1	3.5
708RR	Thunder	9-15	-	97	92	102	98	0.8	Rps1k	3.8
PB-0923RR	Prairie Brand	9-16	102	102	102	101	103	0.9	Rps1k	4.2
RR Richwood	Hyland Seeds	9-16	-	-	101	96	103	0.9	S	3.5
RR50-90	Proseed	9-16	-	-	98	101	101	0.9	S	3.8
K-086RR	KSC/Challenger	9-16	-	-	91	97	101	0.9	S	3.5
NS0911RR	NorthStar Genetics	9-16	-	-	91	104	98	0.9	Rps1k	3.4
RR60-95	Proseed	9-17	-	-	109	97	100	0.9	Rps1c	2.8
PB-0954RR	PBR	9-17	-	-	107	104	97	0.9	S	3.9
MN0904RR	Minn. AES	9-17	93	97	102	105	96	0.9	Rps1k	3.3
2090RR	Seeds 2000	9-17	-	-	100	106	96	0.9	S	3.8
RR50-91	Proseed	9-17	-	-	99	104	92	0.9	Rps1k	3.7
SD1092RR	Sodak Genetics	9-17	-	92	92	107	97	0.9	Rps1k	3.5
MN0401RR	Minn. AES	9-17	-	88	91	104	103	0.4	Rps1	3.6
PB-0856RR	PBR	9-18	-	-	112	98	101	0.8	Rps1k	3.4
2509RR	Gold Country	9-18	-	106	110	100	102	0.9	S	3.8
W2108RR	Wensman	9-18	-	-	106	99	102	1.0	S	3.6
PB-0936RR	Prairie Brand	9-18	-	-	102	99	103	0.9	S	3.3
TS5099RR	Terning Seeds	9-18	-	-	101	100	101	.9	Rps6	3.4
W2090RR	Wensman	9-18	99	103	100	101	100	0.9	S	3.9
SOI0969RR	Sands of Iowa	9-18	-	100	100	103	91	0.9	Rps1k	3.7
AG1002	Asgrow	9-18	-	-	99	101	99	1.0	Rps1c	3.4
7094	Farm Advantage	9-18	-	-	94	100	102	0.9	S	3.4
K-157RR	KSC/Challenger	9-18	-	-	87	103	95	1.5	Rps1k	3.3
RG405RR	RoughRider Genetics	9-18	-	87	86	98	108	0.4	Rps6	3.9
M-096RR	Mustang	9-19	-	113	118	98	104	0.9	Rps6	3.6
39D11	Dyna-Gro	9-19	-	104	105	93	102	1.1	S	3.4
M-097RR	Mustang	9-19	-	-	103	96	99	0.9	Rps1c	2.6
K-120RR	KSC/Challenger	9-19	-	-	101	101	98	1.2	Rps1k	3.7
T-0990RR	Thompson Seeds	9-19	-	-	100	101	99	0.8	S	3.5
S12-P4	NK Brand	9-19	-	-	99	106	95	1.2	Rps1c	3.8

Table 6. Performance and characteristics of Roundup Ready soybean varieties, central zone; Becker, Rosemount and Morris, 2004-2006 (continued).

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
91M30	Pioneer Brand	9-19	-	-	97	95	105	1.3	Rps1k	3.5
SD1111RR	Sodak Genetics	9-19	-	-	93	97	103	1.1	Rps1	3.8
2111	Trelay	9-20	-	-	108	90	104	1.1	Rps1c	3.2
RS124NRR	Renk Seed	9-20	-	104	105	93	98	1.2	Rps1k	3.3
W2121RR	Wensman	9-20	101	100	105	93	100	1.2	Rps1c	3.6
91M51	Pioneer Brand	9-20	100	101	104	98	102	1.5	Rps1k	3.5
K-156RR	Kruger	9-20	-	92	102	104	99	1.4	Rps1k	3.8
XR1460	NK Brand	9-20	-	-	102	96	105	1.5	Rps1k	3.2
2130RR	Seeds 2000	9-20	-	-	101	101	100	1.3	Rps1k	3.3
2511RR	Thunder	9-20	-	-	99	99	103	1.1	Rps1k	3.6
2709RR	Thunder	9-20	-	-	97	102	97	0.9	Rps1k	3.2
C1401RR	LG Seeds	9-20	-	-	95	102	103	1.4	Rps1k	3.7
M-095RR	Mustang	9-20	106	104	95	103	97	0.9	Rps6	3.8
DSR-1500/RRSTS	Dairyland	9-20	-	-	88	98	101	1.5	S	3.9
BT7156NR	Ziller	9-21	-	-	115	103	96	1.5	S	3.1
KB135RR	Kaltenberg	9-21	-	109	108	104	97	1.3	Rps1c	4.3
BT7124R	Ziller	9-21	-	-	106	100	96	1.2	Rps1k	3.4
7122	Farm Advantage	9-21	-	-	105	96	98	1.2	Rps1k	3.7
2155	Trelay	9-21	-	-	104	98	103	1.5	Rps1k	3.6
2713RR	Gold Country	9-21	-	-	104	99	99	1.3	Rps1k	3.8
PB-1256RR	Prairie Brand	9-21	-	-	104	102	96	1.2	S	3.6
RS115RR	Renk Seed	9-21	-	108	104	105	96	1.1	Rps1k	3.9
M-115RR	Mustang	9-21	101	105	103	93	101	1.1	S	3.4
DSR-1301/RR	Dairyland	9-21	97	104	102	100	103	1.3	S	4.3
36G14	Dyna-Gro	9-21	-	-	101	103	99	1.4	Rps1k	3.4
NT-1127RR	NuTech	9-21	-	-	101	99	95	1.0	Rps1k	3.3
1574RR	Viking	9-21	-	-	101	97	100	1.5	Rps1c	3.4
SOI1534RR	Sands of Iowa	9-21	-	-	100	100	101	1.5	Rps1k	3.6
NS1311RR	NorthStar Genetics	9-21	-	-	99	105	98	1.3	S	3.6
SOI1430RR	Sands of Iowa	9-21	-	-	99	97	102	1.4	Rps1k	3.3
NT-1330RR	NuTech	9-21	-	-	97	103	97	1.3	Rps1k	3.8
7154	Farm Advantage	9-21	-	-	96	99	99	1.5	Rps1k	3.8
K-100RR	Kruger	9-21	-	98	96	102	101	1.0	Rps1k	3.8
TS5104RR	Terning Seeds	9-21	-	-	96	101	102	1.0	Rps1k	3.5
RR Rockport	Hyland Seeds	9-21	-	-	80	96	107	0.6	S	3.6
W2142RR	Wensman	9-22	-	110	116	99	98	1.4	Rps1k	3.6
NT-1514RR/SCN	NuTech	9-22	-	-	109	102	100	1.4	S	3.3
S15-E3	NK Brand	9-22	-	-	105	100	93	1.5	S	4.1
91M61	Pioneer Brand	9-22	-	-	104	98	106	1.6	Rps1kRps6	3.5
TS5156NRR	Terning Seeds	9-22	-	-	104	102	100	1.5	Rps6	3.3
KB155RR	Kaltenberg	9-22	-	-	104	104	99	1.5	Rps1k	3.8
NT-1400RR	NuTech	9-22	-	-	104	102	95	1.3	Rps1k	3.5
L1553R Brand	Latham	9-22	-	-	103	100	102	1.5	Rps1k	3.4
MN1504RR	Minn. AES	9-22	-	97	99	108	100	1.5	Rps1k	3.9
RS156RR	Renk Seed	9-22	-	-	95	103	99	1.5	Rps1k	3.7
PB-1525RR	Prairie Brand	9-22	-	98	91	104	95	1.5	Rps1k	3.9
T-1717RR/SCN	Thompson Seeds	9-23	-	-	106	93	105	1.6	Rps1k	3.6
T-1777RR	Thompson Seeds	9-23	-	-	104	98	100	1.6	Rps1k	3.4
SOI1540RR	Sands of Iowa	9-23	103	105	99	101	99	1.5	S	3.9
NS1120RR	NorthStar Genetics	9-23	-	-	98	101	104	1.1	Rps1k	3.7
T-1766RR	Thompson Seeds	9-23	-	-	96	98	99	1.6	S	3.8
809RR	Thunder	9-26	-	-	96	96	98	0.9	Rps1k	3.6
Mean		9-19	48.6 bu/a	54.4 bu/a	50.8 bu/a	34.7%	18.4%			
LSD 20%			6%	7%	8%					

Table 7. Performance and characteristics of Roundup Ready soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2004-2006.

Variety		Maturity	Yield, Percent of Mean		Percent of Mean			Maturity	Phytophthora	Chlorosis
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil	Rating	Gene	Score
AG1602	Asgrow	9-24	-	87	88	95	106	1.6	Rps1k	3.7
BT7156NR	Ziller	9-25	-	-	103	103	101	1.5	S	3.1
152CNR	Anderson Seeds	9-25	-	-	97	103	100	1.5	S	3.2
SD1151RR	Sodak Genetics	9-25	-	95	96	114	97	1.4	Rps1k	4.0
ADV171EX	Advantage	9-26	-	-	92	95	103	1.7	S	3.5
MN1504RR	Minn AES	9-26	-	-	92	116	96	1.5	Rps1k	4.0
DKB18-51	Dekalb	9-27	-	-	103	100	100	1.8	Rps1k	3.6
M-176RR	Mustang	9-27	-	101	101	107	97	1.7	Rps1	3.7
AG1702	Asgrow	9-27	-	-	100	102	99	1.7	Rps1k	4.0
C1661NRR	LG Seeds	9-27	-	-	97	103	101	1.6	S	3.1
W2163RR	Wensman	9-27	100	99	93	103	101	1.6	Rps1	3.6
RS166NRR	Renk Seed	9-27	-	-	92	104	101	1.6	S	3.6
ADV1550CR	Advantage Premium	9-27	-	-	88	102	99	1.5	S	3.3
181CNR	Anderson Seeds	9-28	-	-	121	95	106	1.7	Rps1k	3.6
8716RR	Gold Country	9-28	-	-	103	100	99	1.6	Rps1k	3.4
37R17	Dyna-Gro	9-28	-	-	102	98	102	1.7	Rps1k	3.5
PB-1725RR	PBR	9-28	-	99	101	99	101	1.7	Rps1k	3.6
DSR-1520/RR	Dairyland	9-28	-	-	101	103	99	1.5	S	3.7
7193N	Farm Advantage	9-28	-	-	101	98	102	1.9	Rps1c	3.6
2164	Trelay	9-28	-	-	99	100	101	1.6	Rps1k	3.6
S19-R5	NK Brand	9-28	-	-	97	101	98	1.9	Rps1	4.1
92M01	Pioneer Brand	9-28	-	-	96	101	98	2.0	S	3.6
TS5200NRR	Terning Seeds	9-29	-	-	110	98	103	1.9	Rps1k	3.6
ADV2020CR	Advantage Premium	9-29	-	-	108	95	105	2.0	Rps1k	3.2
PB-1954RR	PBR	9-29	98	101	106	100	99	1.9	Rps1	3.7
PB-1885NRR	Prairie Brand	9-29	-	-	105	97	104	1.8	Rps1k	3.7
K-195+RR/SCN	Kruger	9-29	102	104	104	97	107	2.0	Rps1k	3.3
K-188RR/SCN	Kruger	9-29	-	-	103	95	107	1.7	Rps1k	3.4
MN1803RR	Minn. AES	9-29	92	91	102	103	99	1.8	Rps1	3.7
DKB20-52	Dekalb	9-29	-	101	97	97	107	2.1		3.1
ADV1740CR	Advantage Premium	9-29	-	-	96	95	105	1.7	Rps1k	3.4
1776RR	Viking	9-29	-	95	93	99	104	1.7	Rps1k	3.4
K-177RR	KSC/Challenger	9-29	-	-	92	100	100	1.7	Rps1k	3.7
PB-2056NRR	PBR	9-30	-	-	117	99	103	2.0	Rps1c	3.6
N23-Z3	NK Brand	9-30	-	-	116	97	101	2.2	Rps1	4.2
92M33	Pioneer Brand	9-30	-	-	110	104	98	2.3	S	3.9
PB-2183NRR	Prairie Brand	9-30	-	104	108	98	105	2.0	Rps1k	3.3
191CNR	Anderson Seeds	9-30	104	104	105	96	104	1.9	Rps1k	3.1
NT-1991RR	NuTech	9-30	-	-	105	95	101	1.8	Rps1k	4.3
DSR-199/RRSTS	Dairyland	9-30	101	104	104	104	96	1.9	Rps1k	3.8
M-207RR	Mustang	9-30	-	-	103	98	98	2.0	Rps1k	3.8
RS204NRR	Renk Seed	9-30	102	103	101	96	104	2.0	Rps1k	3.5
ADV1916	Advantage Premium	9-30	-	-	99	97	101	1.9	Rps1k	3.4
E1950R	Latham	9-30	-	-	99	97	100	1.9	Rps1k	3.4
7214N	Farm Advantage	9-30	-	-	99	99	102	2.1	Rps1k	3.6
92M02	Pioneer Brand	9-30	-	-	99	99	102	2.0	Rps1k	3.8
DKB22-52	Dekalb	9-30	-	-	97	99	100	2.2	Rps1c	3.1
PB-1916RR	Sansgaard	9-30	-	-	96	97	98	1.9	Rps1k	3.7
2157RR	Viking	10-1	105	105	107	98	100	2.1	Rps1k	3.6
KB206RR	Kaltenberg	10-1	-	103	104	102	96	2.0	Rps1k	3.6
2225	Trelay	10-1	-	-	103	103	94	2.2	Rps1k	3.1
S21-N6	NK Brand	10-1	-	-	101	95	104	2.1	Rps1k	3.4
K-194RR	KSC/Challenger	10-1	-	-	101	97	101	1.8	Rps1k	3.9
S23-H2	NK Brand	10-1	-	-	101	96	98	2.3	Rps1	3.8
RS223RR	Renk Seed	10-1	101	103	101	98	100	2.2	Rps1k	3.7
92B38	Pioneer	10-1	-	-	100	103	96		S	3.7
K-210RR/SCN	KSC/Challenger	10-1	-	-	100	101	99	2.1	Rps1k	4.0
DSR-1701/RRSTS	Dairyland	10-1	-	-	99	101	101	1.7	S	3.8
E2253R	Latham	10-1	-	-	99	103	97	2.2	Rps1	4.0
KB187RR	Kaltenberg	10-1	-	102	98	99	100	1.8	S	3.6

Table 7. Performance and characteristics of Roundup Ready soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2004-2006 (continued).

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean 2004-2006	Yield, Percent of Mean 2005-2006	Percent of Mean 2006	Percent of Mean Protein	Percent of Mean Oil	Maturity Rating	Phytophthora Gene	Chlorosis Score
SOI2141ARR	Sands of Iowa	10-1	-	-	97	97	99	2.1	S	3.7
NT-7205+RR	NuTech	10-1	-	-	97	96	102	1.9	Rps1k	3.5
K-234RR	Kruger	10-1	-	-	95	101	99	2.4	S	3.5
RS185RR	Renk Seed	10-1	-	98	89	99	100	1.8	S	3.2
T-2213RR	Thompson Seeds	10-2	-	-	113	104	98	2.1	Rps1	3.5
M-227RR	Mustang	10-2	-	-	106	103	98	2.2	Rps1	3.7
35C23	Dyna-Gro	10-2	-	-	102	98	100	2.3	Rps1	3.5
7192	Farm Advantage	10-2	101	103	102	97	101	1.9	S	3.6
92M32	Pioneer Brand	10-2	103	104	102	97	98	2.3	Rps1k	4.1
7224	Farm Advantage	10-2	-	-	100	104	96	2.2	Rps1	4.2
KB236RR	Kaltenberg	10-2	-	105	100	100	99	2.3	S	3.8
PB-2236NRR	PBR	10-2	-	-	99	102	95	2.2	Rps1k	3.2
ADV2214R	Advantage	10-2	-	-	98	95	103	2.1	Rps1k	3.2
PB-2243RR	Prairie Brand	10-2	101	104	97	98	101	2.2	Rps1k	3.5
PB-2141RR	Prairie Brand	10-2	97	97	97	98	100	2.1	Rps1k	3.2
BT7227NR	Ziller	10-2	-	-	97	100	98	2.2	Rps1k	3.6
NT-2121RR/SCN	NuTech	10-2	-	-	96	103	96	2.0	Rps1k	3.7
C2159RR	LG Seeds	10-2	-	-	96	102	98	2.1	Rps1	3.6
E2337R	Latham	10-2	-	-	95	99	96	2.3	S	3.9
39P22	Dyna-Gro	10-2	-	103	95	97	100	2.2	Rps1k	3.3
DSR-234/RR	Dairyland	10-2	99	99	93	102	96	2.3	Rps1k	4.1
SOI2143RR	Sands of Iowa	10-2	96	97	92	97	101	2.1	Rps1k	3.6
ADV2260CR	Advantage	10-2	-	-	92	102	96	2.2	Rps1	3.3
W2226RR	Wensman	10-3	-	-	105	104	99	2.2	Rps1	3.7
T-2444RR/SCN	Thompson Seeds	10-3	-	-	105	100	93	2.4	S	3.5
T-2220+RR	Thompson Seeds	10-3	-	-	104	103	94	2.1	S	3.5
W2253RR	Wensman	10-3	-	-	102	103	98	2.5	Rps1c	3.7
K-235RR/SCN	Kruger	10-3	-	-	99	99	100	2.3	Rps1c	3.8
T-2424RR/SCN	Thompson Seeds	10-3	-	-	99	103	96	2.4	S	3.8
PB-2216RR	Sansgaard	10-3	-	-	99	104	96	2.2	S	4.3
ADV2135R	Advantage	10-3	96	93	90	98	102	2.1	Rps1k	3.6
K-237RR/SCN	KSC/Challenger	10-4	-	-	100	107	92	2.0	Rps1c	3.5
NT-2232RR	NuTech	10-4	-	-	98	97	100	2.3	Rps1	3.7
SOI2442	Sands of Iowa	10-4	-	-	94	99	96	2.4	Rps1	4.1
Mean		9-30	58.4 bu/a	62.8 bu/a	54.6 bu/a	34.3%	18.0%			
LSD 20%			5%	7%	8%					

Table 8. Performance and characteristics of soybean varieties, central zone; at soybean-cyst-nematode infested (Atwater, Gaylord, & Hector) and non-infested (Becker, Morris and Rosemount) sites, 2004-2006.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean Infested Sites 04-06	Infested Sites 05-06	Infested Sites 2006	Non-infested Sites 04-06	Non-infested Sites 05-06	Non-infested Sites 2006	Percent of Mean Protein	Percent of Mean Oil	Maturity Rating	Phytophthora Gene	Chlorosis Score	SCN Rating
S08-M8	NK Brand	9-13	-	-	115	-	-	93	103	94	0.8	S	4.1	R
Lambert	Minn. AES	9-14	93	76	88	100	99	100	102	102	0.7	Rps1	3.0	S
AG0803	Asgrow	9-15	-	113	110	-	98	100	97	101	0.8	Rps1k	3.3	R
MN1011CN	Minn. AES	9-15	-	-	85	-	-	89	103	100	1.0	Rps1	2.2	R
MN0902CN	Minn. AES	9-15	89	73	83	93	94	91	104	97	0.9	S	2.8	R
PB-0885NRR	Prairie Brand	9-17	-	95	94	-	96	98	103	97	0.8	Rps1k	3.3	R
Surge	Minn.& S.D. AES	9-17	-	82	87	-	100	96	105	97	0.9	Rps1	3.1	S
MN0602CN	Minn. AES	9-17	-	82	85	-	90	88	98	101	0.6	N	2.5	R
MN0904RR	Minn. AES	9-19	-	97	99	-	88	79	105	95	0.9	Rps1k	3.6	R
XR1561	NK Brand	9-20	-	-	125	-	-	98	97	102	1.5	Rps1k	3.4	R
XR1563	NK Brand	9-20	-	-	112	-	-	97	99	99	1.5	S	3.3	R
91M61	Pioneer Brand	9-20	-	-	97	-	-	98	99	98	1.6	Rps1c	3.3	R
T-1303RR/STS	Thompson Seeds	9-21	-	-	89	-	-	93	104	101	1.2	S	2.8	R
NT-1514RR/SCN	NuTech	9-22	-	122	104	-	105	102	100	100	1.4	S	3.4	R
S15-E3	NK Brand	9-22	-	-	98	-	-	101	102	95	1.5	S	4.2	R
1824RR/N	Garst Seed	9-22	-	-	91	-	-	94	98	96	1.8	Rps1c	3.2	R

Table 8. Performance and characteristics of soybean varieties, central zone; at soybean-cyst-nematode infested (Atwater, Gaylord, & Hector) and non-infested (Becker, Morris and Rosemount) sites, 2004-2006 (continued).

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean: Infested Sites 04-06	Infested Sites 05-06	Infested Sites 2006	Non-infested Sites 04-06	Non-infested Sites 05-06	Non-infested Sites 2006	Percent of Mean: Protein	Percent of Mean: Oil	Maturity Rating	Phytophthora Gene	Chlorosis Score	SCN Rating
M-177NRR	Mustang	9-23	-	-	106	-	-	117	94	106	1.7	Rps1k	3.7	R
T-1717RR/SCN	Thompson Seeds	9-23	-	-	106	-	-	106	97	105	1.6	Rps1k	3.2	R
MN1410	Minn. AES	9-23	-	-	104	-	-	97	103	101	1.4	Rps1k	3.4	S
6714NRR	Gold Country	9-23	-	-	100	-	-	103	99	102	1.4	S	3.4	R
PB-1585NRR	Prairie Brand	9-23	-	114	99	-	103	101	102	105	1.5	S	3.4	R
K-166RR/SCN	Kruger	9-23	-	-	98	-	-	100	102	98	1.6	S	3.5	R
Parker	Minn. AES	9-23	-	97	84	-	100	97	100	99	1.5	Rps1	4.1	S
PB-1694NRR	Prairie Brand	9-23	118	102	82	106	105	99	99	101	1.6	Rps1c	3.1	R
T-7193RR/SCN	Thompson Seeds	9-24	-	-	114	-	-	123	98	104	1.6	Rps1k	3.4	R
K-188RR/SCN	Kruger	9-24	-	-	112	-	-	106	95	107	1.7	Rps1k	3.8	R
PB-1885NRR	Prairie Brand	9-24	-	125	105	-	114	114	97	105	1.8	Rps1k	3.4	R
NT-1413RR/SCN	NuTech	9-24	-	-	96	-	-	97	99	102	1.3	Rps1	2.9	R
K-146RR/SCN	Kruger	9-24	-	-	95	-	-	97	100	99	1.6	Rps1c	3.1	R
T-1817RR/SCN	Thompson Seeds	9-25	-	-	112	-	-	99	101	98	1.6	Rps1c	3.6	R
AG2002	Asgrow	9-25	-	-	110	-	-	107	96	99	2.0	Rps1c	3.9	R
NT-1888RR/SCN	NuTech	9-25	-	121	108	-	108	103	101	103	1.6	S	4.3	R
NT-1808RR/SCN	NuTech	9-25	-	-	107	-	-	117	101	101	1.6	Rps1c	3.9	R
Mean		9-21	33.1 bu/a	43.1 bu/a	37.9 bu/a	51.0 bu/a	56.9 bu/a	51.0 bu/a	37.1%	16.8%				
LSD 20%			6%	7%	8%	6%	7%	8%						

Table 9. Performance and characteristics of soybean varieties, southern zone; at soybean-cyst nematode-infested (Hayward, Lamberton, Madelia, Otisco and Waseca) and non-infested (Jackson, Lamberton, and Waseca) Sites, 2004-2006.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean: Infested Sites 04-06	Infested Sites 05-06	Infested Sites 2006	Non-infested Sites 04-06	Non-infested Sites 05-06	Non-infested Sites 2006	Percent of Mean: Protein	Percent of Mean: Oil	Maturity Rating	Phytophthora Gene	Chlorosis Score	SCN Rating
MN1011CN	Minn. AES	9-16	-	-	92	-	-	81	101	99	1.0	Rps1	2.8	R
AG1402	Asgrow	9-22	-	-	96	-	-	91	102	101	1.4	Rps1k	2.8	R
MN1302	Minn. AES	9-22	-	85	91	-	90	94	99	101	1.3	Rps1k	4.1	S
K-166RR/SCN	Kruger	9-25	-	96	99	-	93	93	104	100	1.6	S	3.8	R
Freeborn	Minn. AES	9-25	82	83	90	81	82	84	106	97	1.6	Rps1	3.8	R
Parker	Minn. AES	9-25	75	74	83	90	92	96	105	100	1.5	Rps1	3.8	S
2156	Trelay	9-26	-	-	104	-	-	104	102	99	1.5	S	3.6	R
152CNR	Anderson Seeds	9-26	-	-	102	-	-	99	102	101	1.5	N	3.4	R
S15-E3	NK Brand	9-26	-	-	100	-	-	101	101	95	1.6	S	4.3	R
SOI1771NRR	Sands of Iowa	9-26	-	-	95	-	-	98	107	97	1.7	N	3.7	R
MN1410	Minn. AES	9-26	-	-	89	-	-	101	109	97	1.4	Rps1k	3.4	S
W2168NRR	Wensman	9-26	-	-	88	-	-	89	104	98	1.6	S	3.6	R
1974N	Garst Seed	9-27	-	-	107	-	-	101	101	97	1.9	S	3.0	R
IA1008	Iowa AES	9-27	90	91	94	94	94	96	102	96	2.0	S	4.2	R
K-188RR/SCN	Kruger	9-28	-	110	115	-	103	109	96	103	1.7	Rps1k	3.3	R
181CNR	Anderson Seeds	9-28	-	-	112	-	-	105	95	106	1.7	Rps1k	3.5	R
PB-1885NRR	Prairie Brand	9-28	-	104	110	-	102	106	95	106	1.8	Rps1k	3.3	R
S19-L7	NK Brand	9-28	-	-	110	-	-	100	100	97	1.9	S	3.4	R
E2085R	Latham	9-28	-	-	109	-	-	110	97	102	-	Rps1c	4.0	R
K-195+RR/SCN	Kruger	9-28	109	109	108	110	111	114	98	105	2.0	Rps1k	3.3	R
SOI1874NRR	Sands of Iowa	9-28	-	-	108	-	-	106	95	106	1.8	Rps1k	3.8	R
W2172NRR	Wensman	9-28	-	-	107	-	-	116	96	105	1.7	Rps1k	3.3	R
1908CNRR	Viking	9-28	102	102	103	103	103	108	96	105	1.9	S	3.3	R
92M01	Pioneer Brand	9-28	-	-	100	-	-	104	101	100	2.0	S	4.6	R
2717NRR	Gold Country	9-28	-	-	98	-	-	104	98	105	1.7	Rps1k	3.4	R
PB-1936NRR	Prairie Brand	9-28	-	-	95	-	-	93	99	101	1.9	Rps1c	3.4	R
191CNR	Anderson Seeds	9-29	107	108	117	104	104	107	97	104	1.9	Rps1k	3.4	R
33X19	Dyna-Gro	9-29	108	107	117	103	101	97	96	105	1.9	Rps1k	3.3	R

Table 9. Performance and characteristics of soybean varieties, southern zone; at soybean-cyst nematode-infested (Hayward, Lamberton, Madelia, Otisco and Waseca) and non-infested (Jackson, Lamberton, and Waseca) Sites, 2004-2006 (continued).

Variety		Maturity	Yield, Percent of Mean						Percent of Mean		Maturity	Phytoph-thora	Chlorosis	SCN
			Infested Sites			Non-infested Sites								
or Brand	Originator	Date	04-06	05-06	2006	04-06	05-06	2006	Protein	Oil	Rating	Gene	Score	Rating
SOI2151NRR	Sands of Iowa	9-29	104	106	112	103	104	108	98	104	2.1	Rps1k	3.5	R
W2195NRR	Wensman	9-29	-	-	111	-	-	107	97	105	1.9	Rps1k	2.9	R
NT-2222RR/SCN	NuTech	9-29	-	112	108	-	107	109	97	106	2.0	Rps1k	3.2	R
PB-2183NRR	Prairie Brand	9-29	108	111	108	103	103	100	96	106	2.0	Rps1k	3.3	R
M-194NRR	Mustang	9-29	110	110	107	108	109	105	97	106	1.9	Rps1k	3.4	R
AG2107	Asgrow	9-29	108	104	107	104	104	106	99	105	2.1	N	3.3	R
NT-1808RR/SCN	NuTech	9-29	-	-	105	-	-	104	97	102	1.6	Rps1c	4.0	R
T-7193RR/SCN	Thompson Seeds	9-29	105	108	105	103	103	106	98	104	1.6	Rps1k	3.3	R
2202	Trelay	9-29	-	-	104	-	-	102	97	106	2.0	Rps1k	3.0	R
W2200NRR	Wensman	9-29	-	-	103	-	-	102	97	103	2.0	Rps1c	4.3	R
M-217NRR	Mustang	9-29	-	-	102	-	-	98	99	102	2.1	Rps1c	3.3	R
92M33	Pioneer Brand	9-29	-	-	100	-	-	99	105	94	2.3	S	3.4	R
PB-2056NRR	PBR	9-29	-	-	100	-	-	102	97	102	2.0	Rps1c	4.1	R
1938CBR	Viking	9-29	-	-	98	-	-	103	103	95	1.9	Rps1k	3.8	R
1978CBR	Viking	9-29	-	-	97	-	-	104	99	101	1.9	Rps1c	4.0	R
IA2050	Iowa AES	9-29	-	86	84	-	100	101	100	99	2.1	S	3.4	S
E2158R	Latham	9-30	-	-	113	-	-	110	99	101	2.1	Rps1k	3.1	R
K-210RR/SCN	KSC/Challenger	9-30	-	-	105	-	-	101	99	99	2.1	Rps1k	3.9	R
NT-2121RR/SCN	NuTech	9-30	-	-	102	-	-	99	103	95	2.0	Rps1k	3.8	R
IA2068	Iowa AES	9-30	102	99	101	100	100	101	96	98	2.1	S	3.2	R
S22-F5	NK Brand	9-30	-	-	99	-	-	100	100	99	2.2	Rps1	3.3	R
K-227RR/SCN	KSC/Challenger	9-30	-	-	98	-	-	99	102	101	2.2	Rps1c	4.2	R
34K22	Dyna-Gro	9-30	-	-	97	-	-	95	105	95	2.2	Rps1k	3.3	R
K-222RR/SCN	KSC/Challenger	9-30	-	-	97	-	-	103	105	92	2.2	Rps1k	3.8	R
PB-2316NRR	PBR	9-30	-	-	95	-	-	106	102	100	2.3	Rps1k	3.7	R
IA2068 (SCN)	Iowa AES	9-30	-	-	91	-	-	92	94	99	2.4	S	3.4	R
92M40	Pioneer Brand	10-1	-	103	103	-	104	105	102	97	2.4	Rps1c	4.3	R
E2283R	Latham	10-1	-	-	101	-	-	95	102	95	2.2	Rps1k	3.1	R
M-246NRR	Mustang	10-1	-	-	101	-	-	98	99	97	2.4	Rps6	4.2	R
PB-2236NRR	PBR	10-1	-	-	96	-	-	99	104	96	2.2	Rps1k	4.2	R
2251RR/N	Garst Seed	10-1	-	-	93	-	-	89	101	98	2.2	S	3.0	R
Turner	S.D. AES	10-1	92	89	86	94	93	88	100	98	2.3	S	4.0	R
31D20	Dyna-Gro	10-2	-	-	105	-	-	100	97	103	2.0	Rps1c	2.9	R
SOI2467NRR	Sands of Iowa	10-2	-	104	94	-	97	88	97	100	2.4	Rps1c	3.8	R
NT-2324RR/SCN	NuTech	10-2	-	102	93	-	104	103	96	102	2.2	Rps1c	3.3	R
T-2444RR/SCN	Thompson Seeds	10-2	-	-	93	-	-	95	103	92	2.4	S	3.0	R
M-247NRR	Mustang	10-2	-	-	89	-	-	84	101	93	2.4	Rps6	3.5	R
T-2444aRR/SCN	Thompson Seeds	10-2	-	-	89	-	-	93	101	91	2.4	S	3.8	R
K-235RR/SCN	Kruger	10-2	-	100	86	-	101	99	101	97	2.3	Rps1c	3.4	R
K-237RR/SCN	KSC/Challenger	10-3	-	-	85	-	-	103	107	91	2.0	Rps1c	4.3	S
T-2424RR/SCN	Thompson Seeds	10-5	-	96	92	-	100	98	101	97	2.4	S	3.0	R
Mean		9-29	45.6 bu/a	47.0 bu/a	41.4 bu/a	58.8 bu/a	63.5 bu/a	56.4 bu/a	35.0%	17.3%				
LSD 20%			6%	7%	9%	5%	6%	8%						

Table 10a. Characteristics of special-use soybean varieties, north zone; Crookston, Moorhead and Shelly, 2006.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.
MN0071	Minn.AES	00.7	General Purpose	Brown	Rps1	4.3	2,892
Bravado	Earthwise	00.8	Food	Yellow	S	3.9	3,266
Atwood	Earthwise	00.6	Food	Yellow	S	4.0	2,752
Traill	N.D. AES	0.0	General Purpose	Yellow	Rps1	3.5	2,702
Jim	N.D. AES	00.8	General Purpose	Yellow	S	3.9	2,640
MN0082SP	Minn.AES	00.8	Small Seed	Yellow	Rps1	4.0	6,394
Colibri	Earthwise	00.3	Food	Yellow	S	4.2	6,486
MN0101	Minn.AES	0.1	General Purpose	Yellow	Rps1	4.0	3,603

Table 10a. Characteristics of special-use soybean varieties, north zone; Crookston, Moorhead and Shelly, 2006 (continued).

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.
MN0105	Minn.AES	0.1	General Purpose	Yellow	Rps1c	3.9	2,735
MN0103SP	Minn.AES	0.1	Small Seed	Yellow	Rps1	3.8	4,989
MN0202SP	Minn. AES	0.2	Small Seed	Yellow	Rps1	4.1	4,882
UM3	Minn. AES	00.9	Small Seed	Yellow	Rps1	3.8	5,821
MN0304	Minn.AES	0.3	General Purpose	Imperfect Black	Rps1k	3.6	2,580
MN0201	Minn.AES	0.2	General Purpose	Yellow	Rps1	3.8	2,910
MK0205	Richland Organics	0.1	Small Seed	Yellow	S	3.7	4,830
Bygland	Gold Country	0.3	Food	Yellow	Rps1	4.0	2,735
Nannonatto	N.D. AES	0.3	Small Seed	Yellow	Rps6	3.8	3,880
Kamichis	Earthwise	00.3	Food	Yellow	S	4.7	2,441
Norpro	N.D. AES	0.4	Higher Protein	Yellow	S	4.3	2,536
MK0649	Richland Organics	0.3	Small Seed	Yellow	S	3.9	4,989
MN0306SP	Minn.AES	0.3	Lipoxygenase Null	Black	Rps1	4.3	2,281
MN0303SP	Minn. AES	0.3	Small Seed	Yellow	Rps1	4.3	4,935
MN0302	Minn.AES	0.3	General Purpose	Buff	Rps1k	4.0	2,702
MN0102SP	Minn.AES	0.1	Small Seed	Yellow	Rps1	3.6	4,633
Lambert	Minn.AES	0.8	General Purpose	Buff	Rps1	4.0	2,580

Table 10b. Performance of special-use soybean varieties, northern zone; Crookston, Moorhead and Shelly, 2004-2006.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2004-2006	2005-2006	2006	Protein	Oil
MN0071	Minn.AES	8-31	92	89	79	92	112
Bravado	Earthwise	9-7	-	-	96	88	110
Atwood	Earthwise	9-9	-	98	100	95	106
Traill	N.D. AES	9-11	115	105	102	103	99
Jim	N.D. AES	9-11	105	99	94	97	103
MN0082SP	Minn.AES	9-13	96	99	102	96	100
Colibri	Earthwise	9-13	-	88	86	93	99
MN0101	Minn.AES	9-14	-	109	100	100	101
MN0105	Minn.AES	9-14	-	105	100	104	98
MN0103SP	Minn.AES	9-14	98	102	97	99	102
MN0202SP	Minn. AES	9-14	86	91	94	96	97
UM3	Minn. AES	9-14	83	86	90	101	98
MN0304	Minn.AES	9-15	114	112	109	101	103
MN0201	Minn.AES	9-15	110	107	106	109	97
MK0205	Richland Organics	9-15	95	101	106	98	104
Bygland	Gold Country	9-16	-	-	122	96	104
Nannonatto	N.D. AES	9-16	93	99	99	96	99
Kamichis	Earthwise	9-16	-	-	92	113	89
Norpro	N.D. AES	9-16	86	88	89	114	89
MK0649	Richland Organics	9-17	-	-	98	99	96
MN0306SP	Minn.AES	9-17	-	94	94	102	102
MN0303SP	Minn. AES	9-18	90	97	103	102	95
MN0302	Minn.AES	9-19	117	115	119	100	102
MN0102SP	Minn.AES	9-21	-	-	102	105	90
Lambert	Minn.AES	9-26	120	118	121	100	105
Mean		9-14	37.6 bu/a	41.8 bu/a	43.6 bu/a	34.2%	18.7%
LSD 20%			5%	7%	10%		

Table 11a. Characteristics of special-use soybean varieties, central zone; Becker, Morris and Rosemount, 2006.

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.
MN0103SP	Minn. AES	0.1	Small Seed	Yellow	Rps1	2.7	4,935
MN0302	Minn. AES	0.3	General Purpose	Buff	Rps1k	2.6	7,828
Proto	Minn. AES	0.5	Higher Protein	Buff	S	3.3	2,328
Lambert	Minn. AES	0.8	General Purpose	Buff	Rps1	3.1	2,640
MN0402SP	Minn. AES	0.4	Small Seed	Yellow	Rps1	2.7	4,779
Panther	Earthwise	0.5	Food	Yellow	S	3.6	1,739
MN0603SP	Minn. AES	0.3	Small Seed	Yellow	Rps1	2.3	7,965
MK9532	Richland Organics	0.9	Small Seed	Yellow	S	3.6	3,691
ToyoPro	Northland Organic	0.8	Higher Protein, Food	Yellow	S	3.6	2,594
MN0501SP	Minn. AES	0.5	Small Seed	Yellow	Rps1	2.8	3,914
MN0207SP	Minn. AES	0.2	Small Seed	Yellow	Rps1	3.1	4,989
MinnPro	Northland Organic	0.8	Higher Protein, Food	Yellow	S	3.4	2,204
MN0906SP	Minn. AES	0.9	Small Seed	Yellow	Rps1	2.6	4,283
MN0803SP	Minn. AES	0.8	Small Seed Higher Protein	Yellow	Rps1	2.7	3,575
MN0306SP	Minn. AES	0.3	Lipoxygenase Null	Black	Rps1	3.1	1,816
Surge	Minn.& S.D. AES	1.0	General Purpose	Imperfect Black	Rps1	2.9	2,083
MN1011CN	Minn. AES	1.0	SCN	Yellow	Rps1	2.2	2,640
MN0903SP	Minn. AES	0.9	Higher Protein	Yellow	Rps1	3.3	2,316
MN0805SP	Minn. AES	0.8	Small Seed	Yellow	Rps6	2.7	4,495
MN1005	Minn. AES	1.0	General Purpose	Buff	Rps1k	3.6	2,671
MN1004SP	Minn. AES	1.0	Low Sat., Low Linolenic Acid	Black	Rps1	3.8	2,259
0909	Bluestem	0.9	Higher Protein, Food	Yellow	S	3.5	2,259
MN1009	Minn. AES	1.0	General Purpose	Yellow	Rps1k	3.1	2,250
MN1103SP	Minn. AES	1.1	Low Linolenic Acid	Black	Rps1	3.6	2,131
AltaPro	Northland Organic	1.0	Higher Protein, Food	Yellow	S	3.6	2,910
MN1203SP	Minn. AES	1.2	Small Seed	Yellow	S	3.4	4,165
MK9061	Richland Organics	0.9	Small Seed	Yellow	S	3.5	4,680
MN1201SP	Minn. AES	1.2	Larger Seed, Higher Protein	Yellow	Rps1	3.4	1,991
MN1101SP	Minn. AES	1.1	Larger Seed, Higher Protein	Yellow	Rps1	3.0	1,753
Kato	Minn. AES	1.3	Larger Seed, Higher Protein	Black	Rps1	2.8	2,092
MN1302	Minn. AES	1.3	General Purpose	Buff	Rps1k	3.5	1,991
MN1410	Minn. AES	1.4	General Purpose	Buff	Rps1k	3.5	2,215
Minori	Earthwise	1.4	Food	Black	Rps1k	3.6	2,121
MN1202SP	Minn. AES	1.2	Larger Seed	Yellow	Rps1c	2.6	1,916
MN1401	Minn. AES	1.4	General Purpose	Black	Rps1	3.0	1,983
MN1503SP	Minn. AES	1.5	Larger Seed, Higher Protein	Yellow	Rps1	3.2	2,027
Parker	Minn. AES	1.5	General Purpose	Buff	Rps1	3.6	2,162

Table 11b. Performance of special-use soybean varieties, central zone; Becker, Morris and Rosemount, 2004-2006.

Variety or Brand	Originator	Maturity Date	Yield, Percent of Mean			Percent of Mean	
			2004-2006	2005-2006	2006	Protein	Oil
MN0103SP	Minn. AES	9-9	-	-	72	101	102
MN0302	Minn. AES	9-11	107	108	111	97	107
Proto	Minn. AES	9-12	78	77	76	102	98
Lambert	Minn. AES	9-13	114	117	117	93	109
MN0402SP	Minn. AES	9-13	89	88	91	95	104
Panther	Earthwise	9-13	-	88	86	99	102
MN0603SP	Minn. AES	9-13	83	83	80	97	102
MK9532	Richland Organics	9-14	-	99	103	104	98
ToyoPro	Northland Organic	9-14	95	95	97	105	93
MN0501SP	Minn. AES	9-14	89	91	91	97	104
MN0207SP	Minn. AES	9-14	-	-	87	95	96
MinnPro	Northland Organic	9-14	89	87	83	109	93
MN0906SP	Minn. AES	9-15	95	96	93	98	100
MN0803SP	Minn. AES	9-15	84	88	92	104	97
MN0306SP	Minn. AES	9-15	-	-	88	101	99
Surge	Minn.& S.D. AES	9-16	115	121	126	102	106

Table 11b. Performance of special-use soybean varieties, central zone; Becker, Morris and Rosemount, 2004-2006 (continued).

Variety		Maturity	Yield, Percent of Mean			Percent of Mean	
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil
MN1011CN	Minn. AES	9-16	-	-	114	94	104
MN0903SP	Minn. AES	9-16	97	89	90	106	93
MN0805SP	Minn. AES	9-16	-	94	90	102	94
MN1005	Minn. AES	9-17	119	119	116	100	102
MN1004SP	Minn. AES	9-17	86	86	87	99	98
0909	Bluestem	9-18	-	-	115	100	104
MN1009	Minn. AES	9-18	-	112	106	96	103
MN1103SP	Minn. AES	9-18	105	105	106	105	102
AltaPro	Northland Organic	9-18	89	89	89	108	91
MN1203SP	Minn. AES	9-19	-	97	103	98	99
MK9061	Richland Organics	9-19	-	-	92	99	100
MN1201SP	Minn. AES	9-19	100	96	92	103	98
MN1101SP	Minn. AES	9-20	104	101	104	105	96
Kato	Minn. AES	9-20	105	103	100	106	97
MN1302	Minn. AES	9-21	124	128	118	98	101
MN1410	Minn. AES	9-22	-	-	126	99	101
Minori	Earthwise	9-22	-	107	115	103	96
MN1202SP	Minn. AES	9-22	-	-	108	98	102
MN1401	Minn. AES	9-22	-	-	105	97	103
MN1503SP	Minn. AES	9-23	113	110	112	94	104
Parker	Minn. AES	9-24	120	125	123	95	104
Mean		9-17	43.5 bu/a	46.9 bu/a	40.3 bu/a	38.3%	16.2%
LSD 20%			4%	6%	7%		

Table 12a. Characteristics of special-use soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2006.

Variety		Maturity	Special	Hilum	Phytophthora	Chlorosis	
or Brand	Originator	Rating	Characteristics	Color	Gene	Score	Seeds/Lb.
Surge	Minn. & S.D AES	0.9	General Purpose	Imperfect Black	Rps1	4.0	2,270
MN1202SP	Minn. AES	1.2	Larger seed, Higher Protein	Imperfect Black	S	4.3	1,957
MN1004SP	Minn. AES	1.0	Low Sat., Low Linolenic Acid	Brown	Rps1	4.1	2,551
MN1101SP	Minn. AES	1.1	Larger seed, Higher Protein	Yellow	Rps1	4.3	2,045
MN1608SP	Minn. AES	1.6	Larger seed, Higher Protein	Buff	Rps1k	4.0	2,131
MN1302	Minn. AES	1.3	General Purpose	Buff	Rps1k	3.6	2,495
MN1409SP	Minn. AES	1.4	Larger seed, Higher Protein	Yellow		3.9	2,121
MN1502SP	Minn. AES	1.5	Larger seed, Higher Protein	Yellow	Rps1	4.4	2,236
MN1505SP	Minn. AES	1.5	Larger seed, Higher Protein	Yellow	Rps1	4.2	2,236
IA1021	Iowa AES	1.6	Low Linolenic Acid	Yellow	S	4.2	2,702
Parker	Minn. AES	1.5	General Purpose	Buff	Rps1	4.5	2,316
MN1607SP	Minn. AES	1.6	Larger seed, Higher Protein	Yellow	Rps1	4.1	2,172
MN1410	Minn. AES	1.4	General Purpose	Buff	Rps1k	4.4	2,551
MN1801	Minn. AES	1.8	General Purpose	Buff	Rps1c	4.4	3,007
MN1606SP	Minn. AES	1.6	Larger seed, Higher Protein	Yellow	Rps1	4.2	2,236
SurePro	Northland Organic Foods	1.9	Larger seed, Higher Protein	Yellow	S	3.8	2,027
RoyalPro	Northland Organic Foods	1.6	Larger seed, Higher Protein	Yellow	S	4.0	2,000
MN1503SP	Minn. AES	1.5	Larger seed, Higher Protein	Yellow	Rps1	4.0	2,259
SoyaPro	Northland Organic Foods	1.6	Larger seed, Higher Protein	Yellow	S	4.3	2,054
MN0804SP	Minn. AES	1.8	Larger seed, Higher Protein	Yellow	Rps1	3.9	1,892
MN1805SP	Minn. AES	1.8	Larger seed, Higher Protein	Yellow	Rps1	3.7	2,009
MN2001SP	Minn. AES	2.0	Larger seed, Higher Protein	Yellow	Rps1	4.2	2,009
Vinton 81	Iowa AES	2.0	Larger seed, Higher Protein	Yellow	Rps1c	4.3	2,102
1972	Viking	1.9	Larger seed, Higher Protein	Yellow	S	4.2	2,270
IA1010	Iowa AES	1.9	Larger seed, Higher Protein	Yellow	S	4.2	1,582
IA2016	Iowa AES	2.2	Larger seed, Higher Protein	Yellow	S	4.3	2,183
IA2067	Iowa AES	2.4	Larger seed, Higher Protein	Yellow	S	4.3	1,957
IA2073	Iowa AES	2.4	Low Linolenic Acid	Black	S	4.4	3,068

Table 12a. Characteristics of special-use soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2006 (continued).

Variety or Brand	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/Lb.
2300	Bluestem	2.3	Larger seed, Higher Protein	Yellow	S	4.3	2,009
L2109 Brand	Latham	2.1	Larger seed, Higher Protein	Yellow	S	4.2	1,853
323 Brand	Latham	2.3	Larger seed, Higher Protein	Yellow	S	4.2	2,162
IA2053	Iowa AES	2.5	Larger seed, Higher Protein	Yellow	S	4.3	2,083
K-231RR/LINO	Kruger	2.3	Low Linolenic Acid	Imperfect Black	Rps1c	4.5	2,702
K-230RR/LINO	Kruger	2.3	Low Linolenic Acid	Black	Rps1k	4.4	3,088

Table 12b. Performance of special-use soybean varieties, southern zone; Jackson, Lamberton and Waseca, 2004-2006.

Variety		Maturity	Yield, Percent of Mean			Percent of Mean	
or Brand	Originator	Date	2004-2006	2005-2006	2006	Protein	Oil
Surge	Minn. & S.D AES	9-17	102	101	100	101	107
MN1202SP	Minn. AES	9-17	89	89	94	98	97
MN1004SP	Minn. AES	9-17	84	83	88	104	98
MN1101SP	Minn. AES	9-20	93	91	89	108	95
MN1608SP	Minn. AES	9-21	103	101	104	102	102
MN1302	Minn. AES	9-22	114	117	112	90	108
MN1409SP	Minn. AES	9-22	96	95	92	99	102
MN1502SP	Minn. AES	9-23	92	93	90	97	105
MN1505SP	Minn. AES	9-23	-	-	110	107	101
IA1021	Iowa AES	9-23	-	-	110	94	102
Parker	Minn. AES	9-24	118	120	109	94	108
MN1607SP	Minn. AES	9-24	106	103	99	100	101
MN1410	Minn. AES	9-25	-	-	113	96	102
MN1801	Minn. AES	9-26	113	116	104	92	111
MN1606SP	Minn. AES	9-26	106	103	97	99	101
SurePro	Northland Organic	9-27	108	107	104	107	95
RoyalPro	Northland Organic	9-27	98	100	99	103	96
MN1503SP	Minn. AES	9-27	98	96	90	100	101
SoyaPro	Northland Organic	9-27	97	96	99	104	95
MN0804SP	Minn. AES	9-28	-	110	102	107	96
MN1805SP	Minn. AES	9-28	-	96	94	109	93
MN2001SP	Minn. AES	9-29	98	94	87	108	93
Vinton 81	Iowa AES	9-29	85	86	80	102	96
1972	Viking	9-29	-	-	107	94	108
IA1010	Iowa AES	9-29	-	-	92	99	95
IA2016	Iowa AES	9-29	-	-	104	101	98
IA2067	Iowa AES	9-29	-	-	98	105	98
IA2073	Iowa AES	9-29	-	-	114	91	102
2300	Bluestem	9-30	-	103	104	101	100
L2109 Brand	Latham	9-30	-	-	105	103	101
323 Brand	Latham	9-30	-	-	91	101	97
IA2053	Iowa AES	9-30	-	-	101	103	98
K-231RR/LINO	Kruger	10-1	-	-	110	92	102
K-230RR/LINO	Kruger	10-1	-	-	108	88	101
Mean		9-26	46.8 bu/a	49.8 bu/a	48.9 bu/a	38.2%	16.9%
LSD 20%			5%	6%	7%		

Table 13. Characteristics of publicly developed soybean varieties entered in 2006 tests.

Variety or Brand	Originator	Maturity Rating	Phytophthora Gene	BSR Reaction	SCN Reaction	Chlorosis Score
MN0071	Minn. AES	00.7	Rps1	S	S	3.9
Glacier	Minn. AES	00.8	Rps6	S	S	4.2
Jim	N.D. AES	00.8	S	S	S	3.6
Traill	N.D. AES	0.0	Rs1	S	S	3.4
MN0101	Minn. AES	0.1	Rps1	-	S	3.8
MN1501SP	Minn. AES	0.1	Rps1c	-	S	4.3
MN0201	Minn. AES	0.2	Rps1	R	S	3.8
MN0206RR	Minn. AES	0.2	Rps1k	-	S	4.0
Walsh	N.D. AES	0.2	Rps6	S	S	3.5
MN0302	Minn. AES	0.3	Rps1k	S	S	2.6
MN0304	Minn. AES	0.3	Rps1k+Rps6	R	S	3.6
MN0305RR	Minn. AES	0.3	Rps1k	-	S	3.9
MN0401	Minn. AES	0.4	Rps1	-	S	3.6
Lambert	Minn. AES	0.7	Rps1	S	S	3.1
MN0902CN	Minn. AES	0.9	Rps1	R	R	3.7
MN0904RR	Minn. AES	0.9	Rps1k	-	S	3.3
Surge	Minn.& S.D. AES	0.9	Rps1	S	S	4.0
MN1005	Minn. AES	1.0	Rps1k	S	S	3.6
MN1006CN	Minn. AES	1.0	Rps1	S	R	3.7
MN1009	Minn. AES	1.0	Rps1k	-	S	3.1
MN1011CN	Minn. AES	1.0	Rps1	-	R	2.2
Kato	Minn. AES	1.3	Rps1	S	S	2.8
MN1302	Minn. AES	1.3	Rps1k	R	S	3.5
MN1401	Minn. AES	1.4	Rps1	-	S	3.0
MN1410	Minn. AES	1.4	Rps1k	R	S	3.5
MN1504RR	Minn. AES	1.5	Rps1k	-	S	3.9
Parker	Minn. AES	1.5	Rps1	S	S	3.6
Freeborn	Minn. AES	1.6	Rps1	R	R	3.8
IA1006	Iowa AES	1.6	S	R	S	4.2
MN1801	Minn. AES	1.8	Rps1c	S	S	4.4
MN1803RR	Minn. AES	1.8	Rps1	-	S	3.5
IA1008	Iowa AES	2.0	S	S	R	4.1
Sturdy	Minn. AES	2.0	Rps1	S	S	4.1
IA2008R	Iowa AES	2.1	Rps1k	R	S	4.1
IA2050	Iowa AES	2.1	S	S	S	4.4
IA2068	Iowa AES	2.1	S	S	R	4.4
Turner	S.D. AES	2.3	S	S	R	4.0

Planting Rate and Date

Rates are based on seed of normal size and good quality and normal seedbed. Actual rates used will vary widely, depending on seed cost, desired stand, expected mortality, emerging ability, seed weight, seed germination, seedbed condition, depth of planting and planting equipment.

Crop	Bushel Weight (Pounds)[1]	Seeds / Pound (Number)	Rate / Acre (Pounds)	Rate (Seeds)	Planting Date
Barley	48	14,300	85	28 / sq. ft.	Early spring
Corn	56	–		33,000 / acre	April 15 / May 5
Fieldbean					
Black turtle soup	60	2,300	45	105,000 / acre	May 20 / June 15
Great northern	60	1,000	100	90,000 / acre	May 20 / June 15
Kidney	60	900	90-115	90,000 / acre	May 20 / June 15
Navy	60	2,500	42	105,000 / acre	May 20 / June 15
Navy, rows 6 to 14 in.	60		60	150,000 / acre	May 20 / June 15
Pinto	60	1,300	80	90,000 / acre	May 20 / June 15
Small red	60	1,400	75	100,000 / acre	May 20 / June 15
Small white	60	3,000	35	105,000 / acre	May 20 / June 15
Flax	56	88,000	42	85 / sq. ft.	April 15 / May 15
Forage grasses, perennial					
Bromegrass alone	14	136,000	16	50 / sq. ft.	Early spring or late summer
Bromegrass in mixtures			5	15 / sq. ft.	Use date for legumes
Orchardgrass, alone	14	653,000	10	150 / sq. ft.	Early spring or late summer
Orchardgrass, in mixtures			3	45 / sq. ft.	Use date for legumes
Reed canarygrass alone	46	526,000	7	85 / sq. ft.	Early spring or late summer
Reed canarygrass, in mixtures			5	60 / sq. ft.	Use date for legumes
Tall fescue, alone	25	229,000	15	75 / sq. ft.	Early spring or summer
Tall fescue, in mixtures			5	20 / sq. ft.	Use date for legumes
Timothy	45	1,234,000	3	85 / sq. ft.	Use date for legumes
Forage legumes, perennial					
Alfalfa alone	60	220,000	13	55 / sq. ft.	Late April-early May / Late June-early August
Alfalfa with grass			5 to 10	35 / sq. ft.	Late April-early May / Late June-early August
Alsike clover	60	653,000	2	30 / sq. ft.	Early spring to August 10
Birdsfoot trefoil alone	60	372,000	8	70 / sq. ft.	Early spring or summer
Birdsfoot trefoil in mixtures			6	50 / sq. ft.	Early spring or summer
Cicer milkvetch	60	122,000	18	50 / sq. ft.	Early spring or summer
Ladino clover	60	784,000	1	18 / sq. ft.	Early spring to August 10
Red clover alone	60	272,000	9	55 / sq. ft.	Early spring to September 1
Red clover with grass			5	30 / sq. ft.	Use date for legumes
Oat	32	16,200	80	28 / sq. ft.	Early spring
Rye	56	18,200	60	25 / sq. ft.	September 1
Sorghum, rows 18 to 40 in.	56	15,000	10	150,000 / acre	May 20 to June 5 for grain
Sorguhum, rows 6 to 14 in.			15	5 / sq. ft.	
Soybean, 7-in. rows	60	2,800	56	2 / ft. of row	May 1 to May 10
10-in. rows				3 / ft. of row	
20-in. rows				6 / ft. of row	
22-in. rows				7 / ft. of row	
30-in. rows				9 / ft. of row	
Sunflower, nonoilseed	24	4,300	4	17,000 / acre	May 1–June 15
Sunflower, oilseed	27	7,700	3	23,000 / acre	May 1–June 15
Wheat, durum	60	12,100	90	25 / sq. ft	Early spring
Wheat, hard red spring[2]	60	14,000	113	28 / sq. ft	Early spring
Wheat, hard red winter	60	14,500	75+	25 / sq. ft	August 20 / September 20
Other Crops					
Annual canarygrass	50	58,000	30	40 / sq. ft.	Early spring
Buckwheat	48	14,900	50	17 / sq. ft.	June 15 / July 20
Canola, *B napus*	50	80,000 to 160,000	3 to 5	6 to 9	Early spring
Crambe	22	65,000	15	23 / sq. ft.	Late April / early May
Fieldpea	60	2,300	180	9 / sq. ft.	Early spring
Fieldpea with 1½ to 2 bu. oat			70	4 / sq. ft.	Early spring
Fababean, medium size	60	1,300	180	5 / sq. ft.	Early spring
Fababean, with 2 bu. oat			60	2 / sq. ft.	Early spring
Lentil, small	60	15,600	55	20 / sq. ft.	Early spring
Millet, foxtail	48	218,000	15	75 / sq. ft.	June 15 / July 15
Millet, proso	56	65,000	20	30 / sq. ft.	June 15 / July 15
Sudangrass, rows 6 to 14 in.	40	44,000	25	25 / sq. ft.	May 20 / June 10
Sweetclover	60	240,000	10	55 / sq. ft.	Early spring
Wildrice (wet)	25	7,900	33	6 / sq. ft.	Late fall

[1] U.S. legal bushel weight or, if not established, the weight most widely accepted. [2] See wheat section for best way to calculate hard red spring wheat planting rate.