

***For Crop Production 1999*** \_\_\_\_\_

# **SOYBEAN**

## **VARIETY TRIALS**

**Minnesota Agricultural Experiment Station — University of Minnesota  
December 1998**

This is a report on results of the annual soybean variety tests conducted by the Minnesota Agricultural Experiment Station. It has been prepared by James H. Orf (612-625-8275; <orfxx001@tc.umn.edu>), Philip J. Schaus (612-625-9263; schau002@tc.umn.edu), Leland L. Hardman and Arthur S. Killam, Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN 55108.

A recent Minnesota Agricultural Statistics Service survey indicates that more than 600 varieties of soybeans are available for planting in Minnesota. Since successful soybean production depends on selecting the best variety for any particular farm, the Minnesota Agricultural Experiment Station conducts annual tests of adapted public and private varieties.

Companies are charged a fee for each variety they enter and these fees are used to cover part of the costs of conducting these tests. One of the stipulations for entering a variety in the testing program is that the company is marketing or intends to begin marketing the variety in the next season.

Varieties are compared in trial plots on experiment station fields at Rosemount, Waseca, Lamberton, Morris, Crookston, and Grand Rapids, and on fields of cooperating farmers and agencies. Important old varieties and new varieties are grown in replicated plots at each location. These plots are handled so that the factors affecting yield and other characteristics are as nearly the same for all varieties at each location as is possible.

### **Crop Management Resources**

Management information for soybean production is available from your county extension office or from the Minnesota Soybean Research and Promotion Council, 360 Pierce Avenue, Suite 110, North Mankato, MN 56003 (888-896-9678, or [www.mnsoybean.org](http://www.mnsoybean.org)).

### **Seed Certification**

Soybean seed of many varieties may be eligible for certification, and the use of certified seed is suggested. However, certification does not imply recommendation. Registered and certified seed of some soybean varieties can be purchased from seed dealers or from growers listed in the *Minnesota Registered and Certified Seed Directory for 1999 Planting*. This directory is available without charge from the Minnesota Crop Improvement Association (1900 Hendon Avenue, St. Paul, MN 55108; 612-625-7766 or 800-510-6242). The soybean section of that publication is also reproduced in table 13 of this report.

## Using the Tables

Tables 1 to 3 present performance and characteristics 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 soybean maturity zone boundaries. All of these tests were planted between May 1 and May 25 at planting rates of 160,000 plants/acre. Preplant and post-emergence herbicides were used as necessary for good weed control. Row spacings were 30 inches at Becker and Fairmont and 10 inches at all other locations.

Tables 4 and 5 provide results from specific tests of Roundup Ready® varieties adapted to the central and southern production zones. Planting was done as described above, except that the only herbicide used was two applications of the labeled rates of Roundup®.

Table 6 provides results from the special performance tests of soybean cyst nematode resistant varieties in “infested” fields near East Chain, Waseca and St. James and “non-infested” fields near Fairmont, Lamberton, and Waseca. Planting techniques were the same as the regular performance tests.

Table 7 provides results from the special variety tests conducted in white mold infested field sites near Olivia and Lewisville.

Tables 8 and 9 provide results of the very early (northern Minnesota) and special southern Minnesota Public Variety tests. These locations were added to the program to provide data for environments not represented by the other location tests.

Table 10 provides results from the special-use soybean variety tests conducted at several locations. These tests provide reliable data for growers who are interested in producing these types of soybeans, which are typically grown under contract.

To better understand and use the data provided in this report's tables, it is important to have a good understanding of soybean maturity, yield and disease resistance (read below).

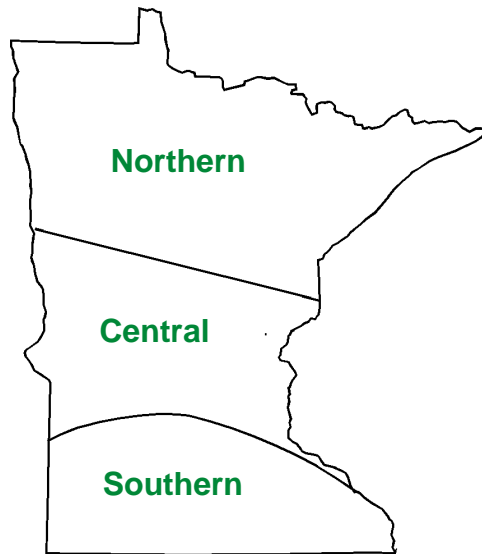
### **Relative Maturity and Calendar Dates of Maturity**

Soybeans respond to changing day length, so the actual calendar date of maturity is affected by latitude. Each soybean 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 1998 are provided in the performance tables. Harvest dates are typically 7 to 14 days later, depending upon drying conditions.

Relative maturity ratings are also provided for each variety in the tables. These ratings consist of a number for the maturity group designation (000, 00, 0, 1, 2) followed by a decimal

### **Soybean Maturity Zones**



and another number, ranging from 0-9. This second number indicates the variety's ranking within its maturity group.

For example, the variety Agassiz is indicated as 0.0, making it the earliest group 0 variety, while Hendricks, 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 1998 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, and within a three- to five-day range. 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.

The LSD (Least Significant Difference) values associated with the data in this report's tables are measures of variability within the trials. 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

These ratings are based on how much of the leaf area was yellowing in tests conducted on high lime (high pH) soils in southwest Minnesota in 1998. Comparing chlorosis scores of varieties permits you to estimate how well they performed relative to each other at this site. Actual chlorosis ratings can vary depending on the specific site and year of test.

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

<b>Numerical 1-5 Scale</b>		<b>Numerical 1-9 Scale</b>		<b>Rating (table key)</b>
1 – 2	=	1 – 2.5	=	Resistant (R)
2.1 – 3	=	2.6 – 5	=	Moderately Resistant (MR)
3.1 – 4	=	5.1 – 7.5	=	Moderately Susceptible (MS)
4.1 – 5	=	7.6 – 9	=	Susceptible (S)

## Protein and Oil

Protein and oil values were determined on mature seed using near infrared reflectance analysis equipment. Protein and oil values are expressed on a 13 percent moisture basis. The formulas which follows can be used to convert the protein and oil values to another moisture basis:

**Moisture Basis Conversion Formula for Protein and Oil Values**

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

**The value of a bushel of soybeans based on oil and protein content is calculated by:**

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

- Where:
- APV = approximate value of a bushel of soybeans
  - Po = soybean oil price (in \$ per pound)
  - Pm = price of 44% meal (in \$ per pound)
  - X = oil content at 13% moisture (in decimals)
  - Y = protein content at 13% moisture (in decimals)

And:  $\frac{\text{price of meal } \$/\text{ton}}{2000} = \$/\text{pound}$

The table values for protein and oil are for the 1998 season only. Absolute values of protein and oil can vary from year to year.

**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. The data tables in this report indicate which Phytophthora genes are present in each variety.

**Genes for resistance to races of Phytophthora root rot (shading indicates resistance)**

	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	■	■								■	■		■		■	■	■	■						■		■	■
Rps1b	■		■	■	■	■	■	■	■	■			■	■	■	■	■	■			■	■					
Rps1c	■	■	■							■	■		■		■						■	■	■	■		■	■
Rps1k	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■			■	■		■	■	■	■
Rps3	■	■	■	■	■			■	■	■	■		■	■		■						■			■		
Rps4	■	■	■	■						■		■	■	■	■	■	■	■	■	■	■					■	
Rps6	■	■	■	■						■	■	■	■	■	■	■	■	■	■	■	■					■	

## ***Soybean Cyst Nematode***

Soybean Cyst Nematode (SCN) was first identified in Minnesota in 1978 and is now known to occur in many Minnesota counties where 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.

The soybean cyst nematode does its damage underground when adult SCN females, which produce as many as 250 eggs, infect soybean roots when conditions are right. The eggs hatch to produce juveniles, which burrow into roots where they disrupt normal root development. By the time yellow and stunting symptoms appear the damage is done.

When SCN numbers are high, significant yield losses can occur. Rotations to non-host crops and planting of resistant varieties can assist in reducing nematode populations as well as reducing its impact on yield. Yield performance results of susceptible, moderately resistant, and resistant varieties planted in infested and non-infested fields in southern Minnesota are provided in tables 6.x.

Soil testing is an essential first step in controlling SCN. You can make a preliminary diagnosis of SCN, but the best way to determine SCN presence with certainty is by systematically testing your fields.

For a preliminary diagnosis, dig up plants with roots intact, carefully remove soil from the roots, and look for small, creamy white females. Do this from six weeks after planting until about five weeks prior to harvest. Sample areas of fields that seem to be less vigorous or less productive compared to others.

For the definitive laboratory test, free soil sampling kits—which include directions for collecting the sample, a sampling bag, and a coupon for \$5 off the testing fee at the University of Minnesota Soybean Nematology Lab, Southern Experiment Station, Waseca, MN 56093—are available at county extension offices throughout Minnesota, or by calling the Minnesota soybean office (888-896-9678). This test also estimates SCN population densities, and with this information you can select the most effective management strategies to reduce the impact of SCN infestation.

The SCN Coalition, a partnership of land grant universities and state soybean checkoff boards from ten North Central states, also offers soil test kits and information on SCN management (877-726-8378).

## ***White Mold***

This disease is also known as Sclerotinia stem rot. Accurate ratings for resistance to this disease are difficult to obtain because the infection process is very dependent on local environmental conditions during flowering. Because of this variability, a variety can appear to be resistant one year or in one location and be devastated elsewhere if conditions are more conducive to spread of the disease. Growers should plant varieties that consistently show less disease over several years of testing.

In 1997 and 1998 some varieties were evaluated under field conditions in two locations in the major soybean production area of Minnesota. These tests, reported in table 7, were conducted by Bruce Potter, Area Integrated Pest Management Specialist at Lamberton, Minn. He rated the percentages of infected plants present in the various plots during these growing seasons, and divided the tested varieties into four susceptibility categories: moderately resistant, slightly resistant, moderately susceptible, or susceptible.

Additional white mold management information is available from the Minnesota Soybean Research and Promotion Council, 360 Pierce Avenue, Suite 110, North Mankato, MN 56003 (888-896-9678, or [www.mnsoybean.org](http://www.mnsoybean.org)).

### ***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 also occur where soybeans are planted every other year. Resistant varieties, or longer rotations, assist in the management of this disease.

Several privately developed varieties are reported to be resistant to BSR. These are: IA 1006, Freeborn, Granite, Faribault, Archer, and IA2008R are available public varieties with resistance to BSR. CroPlan L1187, L1475, L2126, L1309CN, RT 1557, and Sands Exp 0927, 2204 and 9619. Some information is also available which refers to “tolerance” or “field resistance,” but reliable tests for such tolerance or field resistance have not yet been developed.

### ***Special-Use Varieties***

Recently there has been increased interest in producing soybeans with characteristics important to specialty food product manufacturers. In the past, soybean scientists developed special-use varieties which were made available to producers as public general releases. More recently, the developers have been releasing some of them under exclusive contracts to specific companies who contract with growers for their production.

Table 10 presents the most recent data available on the performance and characteristics of several special use varieties. Contact the owner/developer or exclusive marketing company, if you are interested in further information about these varieties.

### ***Publicly Developed Varieties***

Information about publicly developed varieties entered in 1998 tests is presented in tables 11 and 12.

### ***Privately Developed Varieties***

Contact addresses and brand names for privately developed varieties entered in these 1998 tests are:

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Agri-Tel, Box 808, Beause Jour, MB, Roe OCO (Agri-Tel)

AgriPro Seeds, 824 2nd Street South, PO Box 250, Brookings, SD 57006-0250 (AgriPro)

Albert Lea Seed House, PO Box 127, 1414 W. Main, Albert Lea, MN 56007 (Viking)

Asgrow, PO Box 447, Mapleton, MN 56065 (Asgrow)

Croplan Genetics, PO Box 64098, St. Paul, MN 55164-0089 (Croplan)

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Dahlco Seeds, 14730 15th St. S.W., Cokato, MN 55321 (Dahlco)

Dahlman Seeds, 73504 200th St., Dassel, MN 55325 (Dahlman)

Dairyland Seed Company, Inc., PO Box 958, 3570 Highway H, West Bend, WI 53095 (Dairyland)

DeKalb Genetics Corp., 3100 Sycamore Rd., DeKalb, IL 60115 (DeKalb)

Dennis Ewing Farm Seed, 6131 North Fork Road, Ames, IA 50010 (Yield King)

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Domestic Seed & Supply, Inc., 306 South Washington, Madison, SD 57042 (Mustang)  
Garst Seed Company, 2369 330th Street, Slater, IA 50244 (Garst)  
Gold Country Seed, Inc., 16506 Hwy. 15 N, PO Box 604, Hutchinson, MN 55350 (GCS)  
Golden Harvest Seeds, 100 J.C. Robinson Blvd., PO Box A, Waterloo, NE 68069 (Golden Harvest)  
Great Lakes Hybrids, Inc., 9915 W. M21, Ovid, MI 48866 (Great Lakes)

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Interstate Payco Seed Company, Box 338, 1215 Prairie Parkway, West Fargo, ND 58078 (Payco)  
Kaltenberg Seeds, PO Box 278, Waunakee, WI 53597 (Kaltenberg)  
Kruger Seed Company, Highway 20 East, Box A, Dike, IA 50624 (Kruger)  
KSC/Challenger, Box A, Dike, IA 50624 (KSC/Challenger)  
Latham Brothers Farm, 131 180th St., Alexander, IA 50420 (Latham)

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LG Seeds, 905 Dexter St., Box 216, Prescott, WI 54021 (LG Seeds)  
Midwest Seed Genetics, PO Box 518, Carroll, IA 51401 (Midwest Seed Genetics, MWSG)  
Mycogen Seeds, 1340 Corporate Center Curve, St. Paul, MN 55121-1428 (Mycogen Seeds)  
NorthStar Genetics, Box 40, Wanamingo, MN 55983 (North Star Genetics)  
Novartis Seeds, PO Box 959, Minneapolis, MN 55440-0959 (NK Brand, Novartis)

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Peterson Farms Seeds, Inc., 3104 164th Avenue SE, Harwood, ND 58042 (Peterson Farms Seed)  
Pioneer HiBred International, Inc., 130 SE Willmar Ave., Willmar, MN 56201 (Pioneer)  
Prairie Brand Research / Seed Company, 15 X Ave., Story City, IA 50248 (PBR / Prairie Brand)  
Profiseed, Inc., 1691 Highway 65, Hampton, IA 50441 (ProfiSeed)  
Ramy International, Ltd., 1329 N. Riverfront Dr., PO Box 3722, Mankato, MN 56002-3722 (Ramy)

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Renk Seed Company, 6800 Wilburn Rd., Sun Prairie, WI 53590 (Renk)  
Renze Hybrids, Inc., 27410 Kittyhawk Avenue, Carroll, IA 51401 (Renze)  
Sand Seed Service, Inc., 4765 Highway 143, Marcus, IA 51035 (Sands, SOI)  
Sansgaard Seed Farms, Inc., 15 X Avenue, Story City, IA 50248 (Sansgaard)  
Stine Seed Company / Seed Farm, 2225 Laredo Trail, Adel, IA 50003 (Stine)

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Terra Industries, Inc., PO Box 6000, Sioux City, IA 51102-6000 (Terra)  
Thompson Agronomics, Inc. / Thompson Seeds, Inc., 40321 130th Avenue, Leland, IA 50453 (Thompson)  
Top Farm Hybrids, 17177 60th Street SW, Cokato, MN 55321 (Top Farm)  
Trelay Seeds, 11623 State Road 80, Livingston, WI 53544 (Trelay, High Cycle)  
UAP Seeds/Dyna Gro, Box 55, Kasota, MN 56050 (Dyna Gro)

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Wensman Seed Company, PO Box 190, 102 Aldrich Avenue, Wadena, MN 56482 (Wensman)  
Ziller Seed Company, Inc., R.R. 1, Box 122, Bird Island, MN 55310 (Ziller)

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## Acknowledgements, Permissions and Caveats

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Publication project chair is Leland L. Hardman, professor, Agronomy and Plant Genetics. Web product manager for extension communications is Larry A. Etkin, senior editor.

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**Table 1** — Performance and characteristics of public and private soybean varieties, northern zone; Crookston, Moorhead and Shelly, 1996-1998.

Variety	Brand or Originator	Mature Date	Yield Bushels/Acre			Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
			96-98	97-98	1998					
OAC Vision	Prograin	9-8	—	—	25	38	16	00.0	S	MS
5006	Mycogen	9-9	—	32	30	36	19	00.6	S	R
D085	Garst	9-9	—	—	30	35	19	0.8	Rps1k	MR
McCall	Minn. AES	9-11	35	33	31	35	18	00.7	S	MR
Jim	N.D. AES	9-13	—	38	40	36	18	00.8	S	R
Daksoy	N.D. AES	9-14	—	35	33	36	18	00.7	S	S
9007	Pioneer	9-16	33	31	28	35	18	00.7	Rps1a	MR
Glacier	Minn. AES	9-17	33	31	24	36	18	00.8	Rps6	MR
L0083	Croplan	9-17	—	—	24	35	18	0.1	S	MS
Agassiz	Minn. AES	9-18	33	28	20	36	18	0.0	Rps1a	MR
Aquilon	Agri-Tel	9-19	—	—	19	38	18	0.0	S	MS
Trail	N.D. AES	9-20	—	33	31	37	17	0.0	S	MR
9042	Pioneer	9-21	35	31	27	34	18	0.4	Rps1a	MR
MN0301	Minn. AES	9-23	38	36	29	34	18	0.3	Rps1a	MR
9041	Dahlco	9-23	—	—	28	35	18	0.4	S	MR
Ozzie	Minn. AES	9-23	32	29	21	37	17	0.3	Rps1a	MR
E-049	Mustang	9-24	—	—	31	35	18	0.4	S	MS
90B43	Pioneer	9-24	—	—	29	35	19	0.4	Rps1c	MR
X044	Golden Harvest	9-24	—	—	26	35	18	0.3	Rps1k	S
0201	Northstar	9-24	—	—	25	35	19	0.2	S	R
CX025	DeKalb	9-24	34	30	24	36	18	0.2	Rps1a	MR
9030	Dahlco	9-24	—	30	21	35	18	0.3	Rps1a	MR
90B21	Pioneer	9-25	—	—	31	34	18	0.2	Rps1k	MS
X89599	GSC	9-25'	—	—	26	34	18	0.4	S	MR
Dawson	Minn. AES	9-25	35	32	26	34	18	0.6	Rps1a	MR
Bygland	GSC	9-25	—	32	26	36	18	0.3	Rps1a	MR
Council	N.D. AES	9-25	35	32	25	35	18	0.5	Rps1 a	MS
EXP 0301	Sand	9-25	—	—	24	35	18	0.3	S	MS
013	Mycogen	9-25	36	33	24	36	18	0.1	Rps1a	MS
CX046	DeKalb	9-26	35	33	31	37	16	0.4	S	MR
Evans	Minn. AES	9-26	36	35	31	35	18	0.6	Rps1a	MR
TS036	Terra	9-26	—	—	27	36	18	0.3	S	S
Premia	Prograin	9-26	—	—	23	34	19	0.1	S	MS
0523	Northstar	9-26	—	—	21	37	18	0.5	S	MS
TF 6038	Topfarm	9-26	—	—	19	35	18	0.3	S	MS
0480	Stine	9-27	—	—	32	36	18	0.3	S	MR
D061	Garst	9-27	—	—	31	36	17	0.6	S	MR
M-0700	Mustang	9-27	—	—	30	35	18	0.7	Rps1a	MS
Lambert	Minn. AES	9-27	37	34	29	36	18	0.8	Rps1a	MS
Korada	Prograin	9-27	36	34	28	36	17	0.1	Rps1c	MS
CXO 7 5	D e Kalb	9-27	—	—	27	35	18	0.7	Rps1c	S
DSR-065	Dairyland	9-27	37	33	26	35	18	0.5	Rps1c	MR
M-0970	Mustang	9-28	—	—	32	35	18	0.9	Rps1c	MS
Windsor	GCS	9-28	—	33	27	35	18	0.6	S	MS
9609	Payco	9-28	—	—	26	35	18	0.9	S	MR
Ole	Peterson Forms	9-28	—	—	24	35	18	0.7	Rps1c	MS
DST1109	Dairyland	9-29	—	—	32	36	18	0.9	Rps1c	MR
M-0958	Mustang	9-29	—	—	32	36	17	0.9	S	MR
Hendricks	Minn. AES	9-29	—	—	31	36	18	0.9	Rps1a	MR
9809	Payco	9-29	—	—	31	36	18	0.9	S	MR
690	Ramy	9-29	37	35	29	33	18	0.3	Rps1c	MS
1073-0	Stine	9-29		35	29	35	18	0.3	Rps1c	S
9508	Payco	9-29	38	34	27	35	17	0.8	S	MR
9906	Payco	9-29	—	—	19	34	19	0.6	Rps1a	S
1090-6	Stine	9-30	—	—	34	36	17	0.3	S	MR

**Table 1 (continued)** — Performance and characteristics of public and private soybean varieties, northern zone; Crookston, Moorhead and Shelly, 1996-1998.

Variety	Brand or Originator	Mature Date	Yield Bushels/Acre			Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
			96-98	97-98	1998					
PB-097	Prairie Brand	9-30	40	38	33	35	18	0.9	S	MS
PB-098	Prairie Brand	9-30	—	35	31	35	18	0.9	S	MR
PB-091 X	Prairie Brand	9-30	—	—	26	35	18	0.9	S	MS
W3036	Wensman	9-30	—	29	20	36	18	0.3	S	S
PB-103X	Prairie Brand	9-31	—	—	23	35	18	1.0	S	MS
LSD 20%			1	1	3					

**Table 2** — Performance and characteristics of public and private soybean varieties, central zone; Becker, Morris and Rosemount, 1996-1998.

Variety	Brand or Originator	Mature Date	Yield Bushels/Acre			Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
			96-98	97-98	1998					
OAC Atwood	Agri-Tel	9-3	—	—	43	37	17	0.9	S	MS
Ozzie	Minn. AES	9-7	45	48	51	38	16	0.3	Rps1a	MR
5072	Mycogen	9-8	—	—	63	36	18	0.7	Rps1a	MS
990	Ramy	9-8	52	57	62	36	17	0.9	S	Ms
TF6078	Topfarm	9-8	—	—	61	37	18	0.7	Rps1a	S
W3078	Wensman	9-8	—	—	60	37	17	0.7	Rps1a	MS
TS067	Terra	9-8	—	—	60	36	18	0.6	Rps1c	S
H-1082	Golden Harvest	9-8	50	55	60	37	17	0.8	S	MS
KBO76	Kaltenberg	9-8	—	—	59	37	16	0.7	Rps1a	S
Lambert	Minn. AES	9-8	49	52	58	38	17	0.8	Rps1a	MS
Evans	Minn. AES	9-8	46	52	57	37	17	0.6	Rps1a	MR
MN0301	Minn. AES	9-8	—	52	55	37	17	0.3	Rps1a	MR
Council	N.D. AES	9-8	47	50	52	37	17	0.5	Rps1a	MR
9071	Pioneer	9-10	53	57	62	36	18	0.7	Rps1c	MR
91BO1	Pioneer	9-11	—	58	62	36	18	1.0	Rps1k	MS
Surge	Minn. & S.D. AES	9-12	—	58	64	37	17	1.3	Rps1a	MS
9610	Payco	9-12	52	56	62	37	17	1.0	S	MS
EXP 0927	Sands	9-12	—	—	62	37	17	0.9	Rps1k	MR
EXP20771	Ziller	9-12	—	—	62	37	17	0.9	S	MR
W3096	Wensman	9-12	—	56	61	37	17	0.9	S	S
D085	Garst	9-12	—	—	60	37	17	0.8	Rps1k	MR
095	Trelay	9-13	—	—	62	36	17	0.9	S	MS
5100	Mycogen	9-13	50	54	62	37	17	1.0	S	MR
E098	Terra	9-13	—	—	61	36	17	0.9	S	S
Hendricks	Minn. AES	9-13	50	55	59	38	17	0.9	Rps1a	MR
K-0999+	KSC/Challenger	9-14	—	—	69	38	16	0.8	S	MS
M-1128	Mustang	9-14	—	—	67	37	17	1.2	S	MR
K-0909+	Kruger	9-14	56	62	66	38	16	0.8	S	S
Julius	Dahlman	9-14	—	—	65	37	17	0.9	S	R
CX1 05	DeKalb	9-14	—	—	64	36	17	1.0	Rps1k	MS
TF6077	Topfarm	9-14	—	—	61	36	17	0.6	Rps1c	MS
3134	Dyna Gro	9-14	—	—	58	38	16	1.3	Rps1c	MS
A0868	Asgrow	9-15	—	—	66	37	17	0.8	Rps1k	MS
5121	Mycogen	9-15	—	—	66	37	17	1.2	Rps1k	MR
6091	LG Seeds	9-15	—	59	66	36	17	0.9	S	MR
SOI 101	Sands	9-15	—	—	65	37	17	1.0	Rps1c	MS
933	Northstar	9-15	—	—	64	38	16	0.9	S	MR
H-1103	Golden Harvest	9-15	—	—	64	38	16	1.0	Rps1c	MS
W3107	Wensman	9-15	—	57	62	37	17	1.0	Rps1c	MS
3095	Dyna Gro	9-15	—	—	60	38	16	0.9	Rps1k	MR

**Table 2 (continued)** — Performance and characteristics of public and private soybean varieties, central zone; Becker, Morris and Rosemount, 1996-1998.

Variety	Brand or Originator	Mature Date	Yield Bushels/Acre			Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
			96-98	97-98	1998					
EXP21175	Ziller	9-16	—	—	68	38	16	1.5	S	MS
9151	Dahlco	9-16	—	—	66	36	17	1.0	S	MR
K-0999	Kruger	9-16	55	62	66	37	17	0.8	Rps1a	S
KB128	Kaltenberg	9-16	—	58	65	37	17	1.2	Rps1c	MS
K-0999A	Yield King	9-16	—	—	64	36	17	0.8	Rps1a	MS
9140	Dahlco	9-16	—	57	63	39	16	1.4	Rps1k	S
5143	Mycogen	9-17	56	62	70	37	17	1.4	S	MR
K-1414	KSC/Challenger	9-17	—	—	69	38	16	1.2	S	MR
TS107	Terra	9-17	—	60	65	37	17	1.0	Rps1c	MS
9151	Pioneer	9-17	57	62	65	36	17	1.5	Rps1k	MR
9141	Dahlco	9-17	—	59	65	37	17	1.4	Rps1a	MR
X3812	GCS	9-17	—	—	63	38	16	1.2	Rps1k	MR
W3148	Wensman	9-18	—	—	77	37	17	1.4	S	MR
PB-146	Prairie Brand	9-18	—	67	74	38	16	1.4	S	MR
1386-6	Stine	9-18	—	66	74	38	17	1.3	S	MS
A1553	Asgrow	9-18	—	—	72	36	18	1.5	Rps1k	MS
1725	Ramy	9-18	—	—	72	37	16	1.5	Rps1a	S
PBR-159X	PBR	9-18	—	—	72	38	16	1.5	S	MS
X3814	GCS	9-18	—	—	71	38	17	1.4	S	MR
M-1138	Mustang	9-18	—	—	71	38	17	1.3	S	MR
PBR-133X	PBR	9-18	—	—	71	38	17	1.3	S	MR
M-1160	Mustang	9-18	—	62	70	37	16	1.6	S	MR
K-1333	Kruger	9-18	—	67	70	38	16	1.2	Rps1a	MR
1443	Northstar	9-18	—	—	70	38	17	1.4	S	MR
T-3142	Thompson	9-18	—	—	69	37	17	1.4	S	MR
S01177	Sands	9-18	57	63	69	37	16	1.4	S	S
1499	Profiseed	9-18	—	—	69	38	16	1.4	S	MR
6145	LG Seeds	9-18	56	62	69	36	17	1.4	S	MS
EXP 1444	Sands	9-18	—	—	69	38	17	1.4	S	MR
PB-140X	Prairie Brand	9-18	—	—	68	38	16	1.4	S	MR
1486	Stine	9-18	—	—	67	38	16	1.4	S	MS
E158	Terra	9-18	—	—	67	38	17	1.5	S	MR
9150	Dahlco	9-18	—	61	67	36	17	1.5	Rps1k	MS
D142	Garst	9-18	—	—	67	37	16	1.4	S	S
EX8124	Garst	9-18	—	—	67	37	16	1.4	Rps1c	MS
DSR-173	Dairyland	9-18	54	60	66	38	16	1.6	Rps1a	MS
KB145	Kaltenberg	9-18	—	—	66	37	17	1.4	S	MS
PBR-127	PBR	9-18	54	59	65	37	17	1.2	S	MS
CX173	DeKalb	9-18	—	61	64	36	16	1.7	Rps1c	MR
X93857	GCS	9-18	—	—	64	38	16	1.5	S	MR
L1187	Croplan	9-18	—	—	63	37	16	1.2	Rps1k	MR
9163	Pioneer	9-18	—	—	63	37	17	1.6	Rps1c	MS
MN1301	Minn. AES	9-18	—	56	63	38	16	1.3	Rps1c	MR
L1475	Croplan	9-18	—	—	60	36	17	1.4	Rps1a	MR
MN1401	Minn. AES	9-18	—	—	59	39	16	1.4	Rps1a	MR
EX-140	Latham	9-19	—	—	70	38	16	1.2	S	MR
K-1444+	Yield King	9-19	—	64	69	37	17	1.2	S	MS
DSR-158	Dairyland	9-19	—	61	68	38	16	1.5	S	MR
H-1147	Golden Harvest	9-19	—	—	66	38	16	1.4	Rps1a	MS
M-1167	Mustang	9-19	—	—	66	37	17	1.6	Rps1a	MS
T-3162	Thompson	9-19	53	60	65	38	16	1.5	S	MR
1525	Ramy	9-19	—	58	61	37	17	1.5	S	MR
Parker	Minn. AES	9-19	51	56	60	37	17	1.5	Rps1a	MS
KATO	Minn. AES	9-19	48	54	59	40	15	1.3	Rps1a	MS
K-1777	KSC/Challenger	9-20	59	67	74	37	16	1.5	S	S

**Table 2 (continued)** — Performance and characteristics of public and private soybean varieties, central zone; Becker, Morris and Rosemount, 1996-1998.

Variety	Brand or Originator	Mature Date	Yield Bushels/Acre			Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
			96-98	97-98	1998					
TF6147	Topfarm	9-20	—	—	71	39	16	1.4	S	M R
2500	Stine	9-20	—	66	71	38	16	1.5	S	M S
K-1990	Kruger	9-20	59	65	70	38	16	1.6	Rps1a	M S
EX8156	Garst	9-20	—	—	69	37	16	1.5	Rps1k	M R
EX6245	Thompson	9-20	—	67	69	38	16	1.5	S	M S
DSR-180/STS	Dairyland	9-20	—	62	69	38	16	1.9	S	MS
PBR-169+	Prairie Brand	9-21	—	70	73	38	16	1.6	S	MS
1680	Stine	9-21	—	68	73	37	16	1.5	S	S
K-2125	KSC/Challenger	9-21	—	—	73	37	16	1.6	S	MS
250 Brand	Latham	9-21	—	—	69	38	16	1.8	S	MS
PBR-177X	PBR	9-21	—	—	69	38	16	1.7	S	S
K-1515+	Yield King	9-21	—	—	68	37	17	1.2	S	MR
Freeborn	Minn. AES	9-21	—	—	62	39	16	1.6	Rps1a	MS
K-1943+	Yield King	9-22	—	—	75	37	16	1.8	S	MR
Granite	Minn. AES	9-22	—	—	61	38	16	1.8	Rps1a	MR
PB-1 73	Prairie Brand	9-25	—	65	67	39	16	1.7	S	MS
LSD 20%		1	1	2						

**Table 3** — Performance and characteristics of public and private soybean varieties, southern zone; Fairmont, Lamberton and Waseca, 1996-1998.

Variety	Brand or Originator	Mature Date	Yield Bushels/Acre			Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
			96-98	97-98	1998					
MN1301	Minn. AES	9-11	—	50	54	38	17	1.3	Rps1c	MR
Kato	Minn. AES	9-12	49	50	54	38	17	1.3	Rps1a	MS
MN1401	Minn. AES	9-13	—	—	57	37	17	1.4	Rps1a	MR
Stride	Minn. & S.D. AES	9-13	—	52	53	36	18	1.3	Rps1a	MS
D177N	Garst	9-14	—	—	57	37	17	1.7	Rps1k	MS
Parker	Minn. AES	9-14	51	52	54	36	18	1.5	Rps1 a	MS
W3148	Wensman	9-15	—	—	63	37	18	1.4	S	MS
GL1559	Great Lakes	9-15	—	55	59	38	16	1.5	Rps1a	MS
9163	Pioneer	9-15	52	54	56	36	18	1.6	Rps1c	MS
Freeborn	Minn. AES	9-15	48	52	55	38	17	1.6	Rps1 a	MR
EI 58	Terra	9-16	—	—	64	37	18	1.5	S	MR
9184	Dahlco	9-16	—	—	61	37	17	1.8	S	MR
EX7217	Thompson	9-16	—	—	60	36	18	1.9	S	S
9172	Pioneer	9-16	54	57	59	36	17	1.7	Rps1k	MS
AN 755	Agripro	9-16	—	—	59	36	17	1.7	Rps1c	MS
Russel	Dahlman	9-16	—	—	57	38	16	1.6	Rps1k	MS
Bert	Minn. AES	9-16	48	52	56	35	18	1.8	Rps1 a	MS
EXP21377	Ziller	9-17	—	—	63	37	17	1.8	S	MS
9190	Dahlco	9-17	—	50	63	36	17	1.9	S	S
168	Trelay	9-17	—	—	63	36	18	1.6	S	MS
1796	Viking	9-17	55	57	61	36	17	1.7	S	MS
Hardin 91	Iowa AES	9-17	52	55	59	37	18	2.0	Rps1k	S
Granite	Minn. AES	9-17	52	54	57	37	17	1.8	Rps1a	MR
S-190X	Sansgaard	9-18	—	—	67	38	17	1.9	S	S
H-1194	Golden Harvest	9-18	59	62	66	36	18	1.9	S	MS
GL1872	Great Lakes	9-18	59	61	65	37	17	1.8	S	MS
TS200	Terra	9-18	59	61	65	36	17	2.0	S	MS
9210	Dahlco	9-18	—	62	64	37	17	2.1	S	MR
410 Brand	Latham	9-18	58	60	64	37	17	1.9	S	MS
200	Mycogen	9-18	59	61	62	36	17	2.1	S	S
Kinbrae	GCS	9-18	—	58	61	37	17	2.0	Rps1k	MR
AI 923	Asgrow	9-18	—	—	59	37	17	1.9	Rps1k	MR
6192	LG Seeds	9-18	—	58	59	36	17	1.9	S	MR
IA1006	Iowa AES	9-18	—	56	58	36	18	1.6	S	MR
Archer	Iowa AES	9-18	49	50	53	36	18	1.9	Rps1k+6	MR
G1885	Midwest Seed	9-19	62	65	66	37	17	1.8	S	S
TS194	Terra	9-19	59	61	66	37	17	1.9	S	S
T-3193	Thompson	9-19	—	—	66	36	17	2.0	Rps1c	MR
3202	Dyna Gro	9-19	—	63	66	36	17	2.0	Rps1c	MR
H-1184	Golden Harvest	9-19	—	—	66	37	17	1.8	S	MS
Ex-330	Latham	9-19	—	62	65	36	17	1.9	Rps1c	R
207	Trelay	9-19	—	—	64	37	17	2.0	s	S
T-3203	Thompson	9-19	—	—	64	37	17	2.0	S	S
92B23	Pioneer	9-19	—	—	64	36	18	2.2	Rps1k	MS
2302	Northstar	9-19	—	61	63	37	17	2.3	S	S
E-201	Mustang	9-19	—	—	62	36	17	2.0	Rps1a	MS
DSR-180/STS	Dairyland	9-19	—	—	62	37	17	1.9	S	MS
DSR-1 95	Dairyland	9-19	57	60	61	37	17	1.9	S	MS
D189	Garst	9-19	—	—	61	36	18	1.8	Rps1k	MR
2098	Viking	9-19	—	—	60	36	18	1.8	Rps1a	MS
TF6197	Topfarm	9-19	—	—	59	37	17	1.9	S	MS
T-3229	Thompson	9-20	—	—	70	36	17	2.3	S	MS
K-2125	KSC/Challenger	9-20	—	—	69	36	17	1.6	S	MS
CX205	DeKalb	9-20	—	61	68	36	17	2.0	Rps1c	MR
660 Brand	Latham	9-20	60	62	67	37	17	2.3	S	MS

**Table 3 (continued)** — Performance and characteristics of public and private soybean varieties, southern zone; Fairmont, Lambertson and Waseca, 1996-1998.

Variety	Brand or Originator	Mature Date	Yield Bushels/Acre			Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
			96-98	97-98	1998					
R2098	Renze	9-20	—	—	66	38	17	2.0	S	MS
T-3227	Thompson	9-20	58	61	65	36	17	2.3	S	MS
Ex-510	Latham	9-20	—	—	65	38	17	2.1	S	MS
H-1228	Golden Harvest	9-20	—	—	65	36	17	2.2	Rps1a	MR
TF6188	Topfarm	9-20	—	—	64	36	17	1.8	Rps1a	MS
KB221	Kaltenberg	9-20	—	—	64	36	17	2.2	Rps1k	MS
K-2242	Kruger	9-20	—	—	64	36	17	2.0	S	S
K-2022	KSC/Challenger	9-20	—	—	64	36	17	—	Rps1a	MS
DST2124	Dairyland	9-20	—	—	63	36	17	2.1	S	MR
3188	Dyna Gro	9-20	—	—	63	37	17	1.8	S	MS
PB-194	Prairie Brand	9-20	—	61	62	37	17	1.9	S	MS
S-199X	Sansgaard	9-20	—	—	61	38	17	1.9	S	MS
EXP 2027	Sands	9-20	—	—	61	36	18	2.0	S	MS
TF6168	Topfarm	9-20	—	—	61	35	18	1.7	Rps1c	MS
EXP 2204	Sands	9-20	—	—	60	37	17	2.2	Rps1c	MR
Sturdy	Minn. AES	9-20	52	56	60	37	17	2.0	Rps1a	MS
Titan	Mich. AES	9-20	—	—	59	36	17	2.0	S	S
AP2329	Agripro	9-20	—	—	56	36	17	2.3	Rps1b	MS
392 Brand	Latham	9-21	—	65	71	37	17	1.9	S	MS
W3207	Wensman	9-21	—	—	71	37	17	2.0	S	MS
2180	Stine	9-21	—	66	70	37	16	2.1	S	S
9222	Dahlco	9-21	—	—	69	36	17	2.2	S	MS
2002	Northstar	9-21	—	65	68	36	17	1.9	S	MS
T-3222	Thompson	9-21	—	64	68	36	17	2.2	S	MS
KB208	Kaltenberg	9-21	—	62	68	36	17	2.0	S	MS
J-251	Mycogen	9-21	59	62	68	37	17	2.4	S	MS
X3721	GCS	9-21	—	65	68	37	17	2.1	S	MS
S01169	Sand	9-21	62	64	67	36	17	1.9	S	S
G2112	Midwest Seed	9-21	—	65	67	37	17	2.1	S	MS
2195	Ramy	9-21	60	64	66	37	17	2.1	S	MS
PB-197	Prairie Brand	9-21	61	63	66	37	17	1.9	S	MS
A2247	Asgrow	9-21	—	—	66	37	17	2.2	Rps1k	MR
L2126	Croplan	9-21	—	63	65	37	17	2.1	S	MS
K-2303	Kruger	9-21	—	—	65	37	17	2.1	Rps1a	MS
9233	Pioneer	9-21	59	61	65	37	17	2.3	S	MS
1970	Stine	9-21	60	63	65	37	17	1.9	S	MS
W3177	Wensman	9-21	—	—	65	37	17	1.7	S	S
H-1214	Golden Harvest	9-21	—	—	63	37	17	2.1	S	MS
TF6227	Topfarm	9-21	—	—	63	37	17	2.2	S	S
PBR-218	PBR	9-21	—	59	63	36	17	2.1	S	MS
KB169	Kaltenberg	9-21	—	—	62	36	18	1.6	Rps1a	S
CX195	DeKalb	9-21	—	—	61	37	17	1.9	Rps1k	MS
Ex8208	Garst	9-21	—	—	60	37	17	2.0	Rps1c	MR
324STS Brand	Latham	9-21	—	—	59	37	17	1.9	S	MR
K-2323STS	Yield King	9-21	—	—	59	36	17	2.1	Rps1k	MS
DSR-220/STS	Dairyland	9-21	55	58	59	37	17	2.4	S	S
2198	Ramy	9-22	—	—	72	36	17	2.1	S	S
S-237X	Sansgaard	9-22	—	—	72	36	17	2.4	S	MS
PBR-216	PBR	9-22	—	65	71	37	16	2.1	S	MS
K2525A	Yield King	9-22	—	—	70	36	18	2.3	S	MS
K-2625+	Kruger	9-22	—	66	70	37	17	2.4	S	S
2557	Profiseed	9-22	—	—	69	37	16	2.4	S	MS
K-2343	KSC/Challenger	9-22	61	64	69	36	17	2.1	S	MR
K-2425	Yield King	9-22	—	66	69	36	16	2.2	Rps1a	MS
K-2525+	Kruger	9-22	—	—	68	36	18	2.3	S	MS

**Table 3 (continued)** — Performance and characteristics of public and private soybean varieties, southern zone; Fairmont, Lamberton and Waseca, 1996-1998.

Variety	Brand or Originator	Mature Date	Yield Bushels/Acre			Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
			96-98	97-98	1998					
PBR-202	PBR	9-22	61	64	68	37	17	2.0	S	MS
621 Brand	Latham	9-22	—	—	67	37	17	2.3	S	MS
S-220X	Sansgaard	9-22	—	—	67	37	17	2.2	S	MR
2509	Profiseed	9-22	—	—	66	36	17	2.4	S	MR
M-2218	Mustang	9-22	—	—	66	37	16	2.1	S	MS
M-2238	Mustang	9-22	—	—	66	36	17	2.3	S	MS
PB-2120	Prairie Brand	9-22	61	64	65	36	17	2.3	S	MS
R2297	Renze	9-22	—	63	65	37	17	2.1	S	MS
IA2008R	Iowa AES	9-22	56	59	64	36	17	2.2	Rps1k	MS
CX229	DeKalb	9-22	59	60	64	36	17	2.2	Rps1c	MS
EX7331	Thompson	9-22	—	—	64	36	17	2.2	S	MS
X3823	GCS	9-22	—	—	63	36	17	2.3	S	S
IA2021	Iowa AES	9-22	55	60	61	36	18	2.2	Rps1k	MS
6212	LG Seeds	9-22	—	—	61	38	17	2.1	S	MS
M-2200	Mustang	9-22	60	61	60	37	17	2.0	S	MS
2490-1	Stine	9-23	—	—	70	36	17	2.4	S	MR
2550	Ramy	9-23	—	64	66	37	17	2.4	S	S
2498	Ramy	9-23	—	—	64	37	17	2.4	S	MS
IA2038	Iowa AES	9-23	—	—	63	37	17	2.4	S	S
EXP 2435	Sands	9-24	—	—	71	38	17	2.4	S	MS
2413	Profiseed	9-24	—	—	67	37	17	2.4	S	MS
K-2535+	Yield King	9-24	—	63	67	38	17	2.3	S	MS
PBR-213X	PBR	9-24	—	—	66	38	17	2.1	S	MS
PB-235	Prairie Brand	9-24	—	63	66	38	17	2.3	S	MS
KB248	Kaltenberg	9-24	—	—	65	37	17	2.4	S	MS
E248	Terra	9-24	—	—	65	38	16	2.4	S	MS
EX7705	Thompson	9-24	—	—	65	38	17	2.2	S	MS
GL2451	Great Lakes	9-24	—	—	65	36	16	2.4	S	MS
2499-0	Stine	9-25	—	65	67	38	17	—	S	MS
640 Brand	Latham	9-25	—	62	67	38	16	2.3	S	MS
K-2535	KSC/Challenger	9-25	—	—	65	38	17	—	S	MS
LSD 20%			1	1	2					

**Table 4** — Performance and characteristics of Roundup Ready soybean varieties, central zone; Morris and Rosemount, 1998.

Variety	Brand or Originator	Maturity Date	Yield Bu/A	Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
90B93	Pioneer	9-11	58	37	17	0.9	Rps1c	MS
DSR-046/RR	Dairyland	9-11	53	36	18	0.4	S	MS
PB-0999RR	Prairie Brand	9-13	62	36	17	0.9	Rps1k	MS
E0981RR	Terra	9-13	60	36	17	0.9	S	MR
K-09RR	Yield King	9-13	59	36	17	0.8	S	MR
91B02	Pioneer	9-13	59	37	17	1.0	S	MS
980RR	Ramy	9-13	57	36	17	0.9	Rps1k	MS
BT7109RR	Ziller	9-13	56	37	17	1.0	S	MS
AG0901	Asgrow	9-13	55	36	18	0.9	Rps1k	MS
KB069RR	Kaltenberg	9-13	54	37	17	0.6	S	S
90B72	Pioneer	9-13	54	37	17	0.7	S	MR
M-090	Mustang	9-13	52	37	17	0.9	S	MS
W 2098RR	Wensman	9-14	58	36	17	0.9	Rps1c	MR
1080RR	Ramy	9-15	60	37	17	1.0	S	MS
PBR-1093RR	PBR	9-15	58	38	17	1.2	S	MR
K-10RR	KSC/Challenger	9/15	57	37	17	1.1	Rps1k	MR
W2058RR	Wensman	9-15	54	36	18	0.5	S	MR
PB-1190RR	Prairie Brand	9-16	60	37	17	1.4	Rps1K	MS
1455RR	Ramy	9-16	57	38	17	1.4	S	MS
E1181RR	Terra	9-17	62	37	17	1.1	S	MR
M-111	Mustang	9-17	61	37	17	1.1	S	MR
W2118RR	Wensman	9-17	60	37	17	1.1	Rps1a	MS
RT1557	Croplan	9-17	58	37	17	1.5	Rps1k	MR
91B52	Pioneer	9-18	59	36	18	1.5	S	S
EXP 1557RR	Sands	9-18	57	38	16	1.3	Rps1k	MS
X9712RR	NK Brand	9-18	54	37	18	1.5	Rps1c	MS
3142	Dyna Gro	9-19	55	39	16	—	S	MS
1555RR	Ramy	9-19	55	38	16	1.5	Rps1k	MS
KB099RR	Kaltenberg	9-20	64	38	17	0.9	S	MS
PB-1490RR	Prairie Brand	9-20	63	38	17	1.4	S	MS
M-144	Mustang	9-20	63	38	17	1.4	S	MS
BT7149RR	Ziller	9-20	63	38	17	1.4	S	MR
DSR-152/RR	Dairyland	9-20	61	38	17	1.5	S	MS
1496-4	Stone	9-20	58	38	17	1.4	S	MS
S14-M7RR	NK Brand	9-20	58	38	17	1.5	Rps1c	MR
PBR-1752RR	PBR	9-20	58	36	18	1.5	Rps1k	MS
PB-1790RR	Prairie Brand	9-21	63	37	17	1.7	S	MS
K-14RR	Krueger	9-21	62	38	17	1.4	S	MS
W 2148RR	Wensman	9-21	62	38	17	1.4	S	MS
E1481RR	Terra	9-21	61	38	17	1.4	S	MS
M-174	Mustang	9-21	61	37	17	1.7	S	MR
X-141RR	Golden Harvest	9-21	60	37	18	1.4	S	MS
1794	Stine	9-21	57	37	17	1.5	S	MS
DSR-182/RR	Dairyland	9-21	57	38	17	1.8	S	MS
K-191RR	Yield King	9-22	55	36	17	1.6	Rps1c	MR
S-18XRR	Sansgaard	9-23	64	37	17	1.5	Rps1k	MS
K-19CRR	KSC/Challenger	9-23	63	38	16	1.6	S	MR
K-19DRR	KSC/Challenger	9-23	62	38	17	1.6	Rps1k	MS
EXP 1882RER	Sands	9-23	62	39	16	1.5	S	MR
KB119RR	Kaltenberg	9-23	59	38	16	1.1	Rps1k	MR
E)580RER	Terra	9-23	58	38	16	0.5	S	MR
K-20RR	Kruger	9-24	69	37	17	1.9	S	MS
S-14XRR	Sansgaard	9-24	67	38	16	1.4	S	MR
K-1494RR	Kruger	9-24	67	37	17	1.7	S	S
KB 149RR	Kaltenberg	9-24	65	37	16	1.5	S	MS

**Table 4 (continued)** — Performance and characteristics of Roundup Ready soybean varieties, central zone; Morris and Rosemount, 1998.

Variety	Brand or Originator	Maturity Date	Yield Bu/A	Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
PBR-1921RR	PBR	9-24	64	37	16	1.5	S	S
K-19FRR	Kruger	9-24	62	37	17	1.7	S	MS
EX-316RR	Latham	9-24	62	37	17	1.5	S	MS
K-21RR	Yield King	9-24	61	37	17	1.7	S	S
K-190RR	Yield King	9-24	56	36	17	1.6	S	MS
S-19XRR	Sansgaard	9-25	62	38	17	1.5	Rps1k	MS
S-15XRR	Sansgaard	9-25	61	37	17	1.5	S	MR
K-21ARR	KSC/Challenger	9-25	60	37	17	1.7	Rps1k	MR
LSD 20%			2					

**Table 5** — Performance and characteristics of Roundup Ready soybean varieties, southern zone; Lamberton and Waseca, 1998.

Variety	Brand or Originator	Maturity Date	Yield Bu/A	Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
91B64	Pioneer	9-14	63	36	18	1.6	Rps1c	MS
816RR	Dahlman	9-14	58	37	17	1.6	S	MS
92B05	Pioneer	9-15	66	36	17	2.0	Rps1k	MS
91B91	Pioneer	9-15	62	36	17	1.9	S	MR
818RR	Dahlman	9-15	61	38	17	1.8	S	MR
DSE182RR	Dairyland	9-15	60	38	17	1.8	S	MR
T-3178RR	Thompson	9-15	58	35	18	1.7	Rps1k	MS
2172RR	High Cycle	9-16	63	37	18	1.7	S	MS
W 2178RR	Wensman	9-16	63	36	18	1.7	S	MS
AG1901	Asgrow	9-16	60	35	18	1.9	Rps1k	S
E-1481RR	Terra	9-16	60	37	17	1.4	S	MR
WQ 2148RR	Wensman	9-16	60	37	17	1.4	S	MS
S-14-M7RR	NK Brand	9-16	57	37	17	1.5	Rps1c	MR
DSR-215RR	Dairyland	9-17	63	37	17	2.2	S	MS
K-19CRR	KSC/Challenger	9-17	62	38	17	1.6	S	MR
AG2101	Asgrow	9-17	62	37	17	2.1	Rps1k	MR
406RR Brand	Latham	9-17	60	37	17	1.8	S	MR
K-19DRR	KSC/Challenger	9-18	63	36	17	1.6	Rps1k	MS
4222	Proifiseed	9-18	62	37	17	1.9	S	MS
S-2100RR	Sansgaard	9-18	61	37	17	2.1	S	MR
2023RR	Northstar	9-18	57	37	17	2.0	S	MR
K-19HRR	Yield King	9-19	68	37	17	1.7	Rps1a	MR
165RR	Golden Harvest	9-19	67	36	17	1.6	S	MR
92B21	Pioneer	9-19	65	36	17	2.2	S	S
DSR-241/RR	Dairyland	9-19	64	37	17	2.4	Rps1k	MS
AG2201	Asgrow	9-19	64	37	17	2.2	S	MS
1980-4	Stine	9-19	62	37	16	1.5	S	MS
H-1238RR	Golden Harvest	9-19	62	38	16	2.4	Rps1k	MS
PBR-200XRR	PBR	9-19	62	37	17	2.0	S	MS
K-22RR	KSC/Challenger	9-19	62	37	17	1.9	S	MS
S22-N2RR	NK Brand	9-19	61	38	17	2.2	S	MS
PBR-1920RR	PBR	9-20	68	35	17	2.1	S	MR
BT7189RR	Ziller	9-20	67	36	17	1.8	Rps1c	MR
K-24ARR	Kruger	9-20	65	36	17	2.4	Rps1a	MS
CX191RR	DeKalb	9-20	65	36	17	1.9	Rps1c	MR

**Table 5 (continued)** — Performance and characteristics of Roundup Ready soybean varieties, southern zone; Lamberton and Waseca, 1998.

Variety	Brand or Originator	Maturity Date	Yield Bu/A	Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
K-19FRR	Yield King	9-20	65	37	17	1.7	S	MS
R1909R	Renze	9-20	64	37	16	2.1	S	MS
X160RR	Kaltenberg	9-20	63	36	17	2.3	S	MS
EX-656RR	Latham	9-20	63	37	17	2.4	Rps1k	MS
EX-416RR	Latham	9-20	63	37	17	2.0	S	MS
S-245XRR	Sansgaard	9-20	62	37	17	2.4	Rps1k	MS
K-21RR	Yield King	9-20	62	37	17	1.7	S	S
KB180RR	Kaltenberg	9-20	61	37	17	1.8	Rps1k	MS
1995RR	Ramy	9-20	60	37	17	1.9	S	MS
3173RR	Dyna Gro	9-20	60	37	17	—	S	MR
E2081RR	Terra	9-20	60	37	17	2.0	S	S
PBR-2122RR	PBR	9-20	59	37	17	2.1	S	S
M-208	Mustang	9-20	59	36	17	2.0	Rps1c	MR
R2109R	Renze	9-20	57	37	17	2.1	S	MS
M-238	Mustang	9-20	55	37	17	2.2	S	MS
GL2100RR	Great Lakes	9-21	70	36	17	2.1	Rps1c	MR
EXP 9619RR	Sands	9-21	67	35	17	1.9	Rps1c	MR
4201	Profiseed	9-21	67	36	17	2.1	S	S
PB-2124R	Prairie Brand	9-21	67	37	17	2.1	S	MS
PBR-1997RR	PBR	9-21	67	37	17	1.9	S	MS
1991-4	Stine	9-21	66	37	17	1.9	S	MS
E1980RR	Terra	9-21	66	37	17	1.9	S	MS
T-3215RR	Thompson	9-21	66	35	17	2.1	Rps1c	MR
K-24RR	Kruger	9-21	65	36	17	2.4	S	S
T-3228RR	Thompson	9-21	65	37	17	2.2	S	MS
W2198RR	Wensman	9-21	65	37	17	1.9	S	S
K-191RR	KSC/Challenger	9-21	65	36	17	1.6	Rps1c	MR
BT7199RR	Ziller	9-21	65	38	17	1.9	S	MS
821RR	Dahlman	9-21	64	36	18	2.1	Rps1k	MR
3214	Dyna Gro	9-21	63	35	17	—	S	S
S-2161RR	Sansgaard	9-21	61	37	17	2.5	S	S
H-1207RR	Golden Harvest	9-21	60	36	17	2.1	Rps1c	MR
AG2301	Asgrow	9-21	60	38	17	2.3	Rps1k	MR
819RR	Dahlman	9-21	59	36	17	1.9	Rps1k	MS
K-26RR	Kruger	9-22	66	37	17	—	S	MS
KB209RR	Kaltenberg	9-22	64	37	17	2.0	S	S
M-202	Mustang	9-22	64	38	16	2.1	S	MS
2195RR	Ramy	9-22	63	38	16	2.1	S	S
5214	Mycogen	9-22	60	37	17	2.1	S	MS
E2181RR	Terra	9-22	58	38	16	2.1	S	MS
2190-R	Stone	9-22	55	37	17	2.1	S	MS
4190	Profiseed	9-23	68	37	17	1.9	S	MS
G1998RR	Midwest Seed	9-23	66	37	17	1.9	S	MR
EX-426RR	Latham	9-23	65	37	17	2.0	S	MS
2085RR	Ramy	9-23	65	37	17	2.0	S	MS
R2009R	Renze	9-23	65	38	17	2.0	S	MS
K-20RR	Yield King	9-23	64	37	17	1.9	Rps1a	MS
2003RR	Northstar	9-23	64	37	17	2.0	S	MS
PB-2197RR	Prairie Brand	9-23	64	38	16	2.1	S	S
KB159RR	Kaltenberg	9-23	63	37	17	1.5	S	S
T-3208RR	Thompson	9-23	63	37	17	2.0	S	MS
SOI245RR	Sands	9-23	63	37	16	2.4	S	MS
SOI 242RR	Sands	9-23	62	36	17	2.4	S	MS
S-233XRR	Sansgaard	9-23	62	38	17	2.3	S	S
2091-4	Stine	9-23	61	37	17	2.0	S	MS

**Table 5 (continued)** — Performance and characteristics of Roundup Ready soybean varieties, southern zone; Lamberton and Waseca, 1998.

Variety	Brand or Originator	Maturity Date	Yield Bu/A	Protein %	Oil %	Maturity Rating	Phytophthora Gene	Chlorosis Score
EX-456RR	Latham	9-23	61	38	16	2.1	S	MS
G2210RR	Midwest Seed	9-23	59	38	16	2.1	S	MS
W 2218RR	Wensman	9-23	58	38	17	2.1	S	S
EXP 2121RR	Sands	9-23	57	38	16	2.1	S	MS
PB-2090RR	Prairie Brand	9-24	67	38	17	2.0	S	MS
GL2000RR	Great Lakes	9-24	64	37	17	2.0	S	MS
PB-2490RR	Prairie Brand	9-24	62	37	17	2.4	S	MS
K-24BRR	Kruger	9-24	62	37	17	2.4	S	MS
4249	Profiseed	9-24	57	38	16	2.4	S	S
2550RR	Ramy	9-25	59	37	16	2.4	S	S
M-244	Mustang	9-25	58	38	16	2.4	S	S
LSD 20%			3					

**Table 6.1** — Relative maturity and yield performance (bushels/acre) of public and private soybean varieties in tests on soybean cyst nematode infested (East Chain, St. James, Waseca) and non-infested (Fairmont, Lamberton, Waseca) sites, 1996-1998.

Variety	Brand or Originator	Relative Maturity	Infested Site Yields			Non-Infested Site Yields		
			96-98	97-98	1998	96-98	97-98	1998
Parker	Minn. AES.	1.5	40	44	45	47	46	49
L1309CN	Croplan	1.3	—	—	51	—	—	55
CX160C	DeKalb	1.6	—	54	59	—	50	54
Freeborn	Minn. AES	1.6	46	51	56	46	48	52
Faribault	Minn. AES	1.9	43	46	46	45	47	49
PB-188CN	Prairie Brand	1.8	—	55	60	—	52	54
K-2212SCN	Kruger	2.0	—	—	57	—	—	57
K-2444SCN	Kruger	2.2	49	52	56	50	51	54
K-2120SCN	Kruger	1.9	—	56	58	—	52	54
A2069	Asgrow	—	—	—	57	—	—	61
S18-11	NK Brand	1.8	—	—	52	—	—	55
T-3219CN	Thompson	2.2	—	—	59	—	—	59
1802CN	Northstar	1.8	—	—	58	—	—	57
352CN Brand	Latham	1.9	—	—	55	—	—	60
CX202C	DeKalb	—	—	—	57	—	—	59
T-3216CN	Thompson	2.1	—	—	57	—	—	58
Bell	Ill. AES	2.2	44	49	53	44	46	52
2397CN	Ramy	2.3	—	—	58	—	—	58
AG2201	Asgrow	2.2	—	—	57	—	—	58
2123CN	Northstar	2.1	—	—	56	—	—	59
PB-215CN	Prairie Brand	2.1	—	56	53	—	53	58
522CN Brand	Latham	2.1	45	50	52	47	50	55
T-3236CN	Thompson	2.2	—	—	60	—	—	59
CX235C	DeKalb	2.3	—	56	60	—	54	58
K-2220SCN	Kruger	2.0	50	53	58	54	56	61
IA2036	Iowa AES	2.2	—	51	54	—	51	55
IA2021	Iowa AES	2.1	48	52	53	53	55	60
1882-1	Stine	1.8	50	56	60	53	56	62
9234	Pioneer	2.2	49	54	56	48	52	55
PB-221CN	Prairie Brand	2.1	—	—	54	—	—	57
LSD 20%			1	1	2	1	1	2

**Table 6.2** — Disease resistance, maturity date, and protein and oil yield of public and private soybean varieties in tests on soybean cyst nematode infested (East Chain, St. James, Waseca) and non-infested (Fairmont, Lamberton, Waseca) sites, 1996-1998.

Variety	Maturity Date	Phytophthora Gene	Chlorosis Score	SCN Rating	Protein %	Oil %
Parker	9-14	Rps1a	MR	S	37	17
L1309CN	9-15	S	MR	S	37	17
CX160C	9-17	S	MS	MR	36	18
Freeborn	9-17	Rps1a	MR	R	39	16
Faribault	9-17	Rps1c	MS	R	36	18
PB-188CN	9-19	S	MS	S	37	17
K-2212SCN	9-19	Rps1a	MS	S	37	17
K-2444SCN	9-19	Rps1a	MS	MR	37	17
K-2120SCN	9-20	Rps1a	MS	S	37	17
A2069	9-20	Rps1k	MS	S	37	17
S18-11	9-20	S	MR	MR	40	16
T-3219CN	9-21	S	MS	S	37	17
1802CN	9-21	S	MS	S	37	17
352CN Brand	9-21	S	MS	S	37	17
CX202C	9-22	S	MS	MR	38	17
T-3216CN	9-22	S	S	S	38	17
Bell	9-22	S	MR	R	37	17
2397CN	9-23	S	MS	S	37	17
AG2201	9-23	S	MS	MR	37	17
2123CN	9-23	S	MS	MR	37	17
PB-215CN	9-23	S	MS	S	37	17
522CN Brand	9-23	S	MS	S	38	17
T-3236CN	9-24	S	MR	S	36	17
CX235C	9-24	S	MS	MR	36	18
K-2220SCN	9-24	Rps1k	MS	MR	36	17
IA2036	9-24	S	MR	R	38	17
IA2021	9-24	Rps1k	MS	S	36	18
1882-1	9-25	S	MS	MR	36	17
9234	9-25	Rps1a	MR	R	37	17
PB-221CN	9-25	S	MS	MR	36	17

**Table 7** — White mold ratings, listed alphabetically by brand or originator, and grouped by 1998 combined scores of sensitivity to infection: 1 = moderately resistant; 2 = slightly resistant; 3 = moderately susceptible; 4 = susceptible.

Brand or Originator	Variety	1998 Lewisville	1998 Olivia	1997 Combined
<b><u>Moderately Resistant</u></b>				
AgriPro	1394	—	1	—
DeKalb	CX195	1	1	—
Gold Country	Kinbrae	1	1	3
Golden Harvest	1147	—	1	—
Golden Harvest	1184	1	1	—
Kruger	1990	1	—	1
Kruger	2242	1	—	—
Latham	250	1	1	3
Pioneer	9132	—	1	—
<b><u>Slightly Resistant</u></b>				
AgriPro	1995	3	1	3
Asgrow	1901	2	1	—
Great Lakes	1559	1	2	—
Novartis	1811	2	1	3
Novartis	1990	2	1	3
Prairie Brand	194	1	2	3
<b><u>Moderately Susceptible</u></b>				
Croplan	L1849	2	3	—
Croplan	L1984	1	3	—
Dairyland	DSR-173	3	1	—
Garst	D163N	—	3	—
Garst	EX8208	2	—	—
Kruger	K1444	—	3	—
Kruger	1333	—	3	—
MWGS	G1400	3	3	—
Novartis	2091	2	3	1
Pioneer	9163	—	3	1
Pioneer	9172	3	—	—
Prairie Brand	227	2	3	—
<b><u>Susceptible</u></b>				
Gold Country	X3719	1	4	—
MWGS	G1885	1	4	3
Mycogen	5121	1	4	—
NC+	1A48	4	2	1
SOI	260	1	4	1
AgriPro	2220	4	—	3
Asgrow	2101	2	4	—
Dairyland	DSR-195	—	4	3
Dairyland	DSR-215RR	4	—	—
Garst	D189	4	4	—
Golden Harvest	1214	4	—	—
Latham	410	3	—	3
MPS	Sturdy	4	4	—
Mycogen	J181	4	4	3
Stine	615974	—	4	—
Stine	616474	—	4	—

**Table 8** — Performance of very early maturing soybean varieties, 1994-1998.

Variety	Maturity Rating	Yield			Protein %	Oil %	Phytophthora Gene	Chlorosis Score
		Grand Rapids	Roseau	Average				
Daksoy	00.6	26	26	26	37	17	S	MS
McCall	00.7	23	26	24	36	17	S	MR
Jim	00.7	27	28	28	37	18	S	MS
Glacier	00.8	23	26	24	37	17	Rps6	MS
Agassiz	0.0	26	26	26	37	18	Rps1a	MR
Traill	0.0	22	23	23	37	17	S	MS
LSD 20%		1	1	1				

**Table 9** — Performance of southern zone soybean varieties, Southeast Minnesota sites, 1994-1998.

Variety	Maturity Rating	Yield bushels/acre	Protein %	Oil %	Phytophthora Gene	Chlorosis Score
Hendricks	0.9	45	36	18	Rps1a	MS
Kato	1.3	47	39	15	Rps1a	MR
Bert	1.8	50	35	18	Rps1a	MR
Freeborn	1.6	48	36	17	Rps1a	MR
Parker	1.5	48	35	18	Rps1a	MS
Hardin 91	2.0	53	37	17	Rps1k	S
Granite	1.8	49	36	17	Rps1a	MS
Faribault	1.9	47	35	18	Rps1c	MS
Sturdy	2.0	54	37	16	Rps1a	MR
Archer	1.9	46	36	17	Rps1k + 6	MR
IA2021	2.1	55	35	18	Rps1k	S
IA2008R	2.2	48	35	17	Rps1k	MS
LSD 20%		1				

**Table 10.1** — Performance of special use soybean varieties, 1996-1998. Results for Danatto, Minnatto, Lambert, Toyopro and Kato from Morris and Rosemount. Results for all other varieties from Lambert and Waseca.

Variety	Originator	Mature Date	—Yield, Bushel/Acre —			Protein %	Oil %
			1996-98	1997-98	1998		
Danatto	N.D. AES	9-13	29	28	33	37	17
Minnatto	Minn. AES	9-13	26	26	25	39	16
Lambert	Minn. AES	9-13	40	42	47	39	17
Toyopro	Minn. AES	9-16	35	36	38	42	15
Kato	Minn. AES	9-17	40	44	48	39	17
IA1005	Iowa AES	9-18	—	—	55	38	17
IA1007	Iowa AES	9-18	—	—	53	39	16
IA1006	Iowa AES	9-18	—	—	53	36	17
HP204	Iowa AES	9-20	—	—	48	39	17
Vinton 81	Iowa AES	9-20	38	38	44	39	17
IA2021	Iowa AES	9-20	49	54	63	36	17
IA2011	Iowa AES	9-21	—	—	59	38	17
IA2019	Iowa AES	9-21	—	—	57	38	17
IA2012	Iowa AES	9-21	—	—	54	39	17
IA2017	Iowa AES	9-21	—	—	49	39	17
IA2016	Iowa AES	9-21	—	—	48	39	16
IA2020	Iowa AES	9-22	—	—	51	39	16
IA2025	Iowa AES	9-22	—	—	49	40	16
IA2030	Iowa AES	9-22	—	—	49	39	16
IA2028	Iowa AES	9-23	—	—	52	38	17
IA2027	Iowa AES	9-23	—	—	47	38	17
IA2033	Iowa AES	9-23	—	—	46	39	16
IA2029	Iowa AES	9-23	—	—	44	39	16
IA2035	Iowa AES	9-23	—	—	42	39	16
IA2023	Iowa AES	9-23	—	—	41	40	15
IA2034	Iowa AES	9-24	—	—	59	39	16
IA2032	Iowa AES	9-24	—	—	50	39	16
IA2024	Iowa AES	9-24	—	—	37	38	16
LSD 20%			2	3	4		

**Table 10.2** — Characteristics of special-use soybean varieties, 1998.

Variety	Originator	Maturity Rating	Special Characteristics	Hilum Color	Phytophthora Gene	Chlorosis Score	Seeds/lb.
Danatto	N.D. AES	0.4	Small Seed	Yellow	S	MR	4,365
Lambert	Minn. AES	0.8	General Purpose	Buff	Rps1a	MR	2,873
Minnatto	Minn. AES	0.7	Small Seed	Yellow	Rps1a	MR	4,365
Toyopro	Minn. AES	0.8	High Protein	Yellow	S	S	2,802
Kato	Minn. AES	1.3	High Protein	Black	Rps1a	MR	2,112
IA1005	Iowa AES	1.9	Large Seed, High Protein	—	—	—	2,259
IA1007	Iowa AES	1.9	Large Seed	—	—	—	1,610
IA1006	Iowa AES	1.6	General Purpose	Black	S	MS	2,719
HP204	Iowa AES	2.0	Large Seed, High Protein	Yellow	—	—	2,000
VINTON 81	Iowa AES	2.0	Large Seed, High Protein	Yellow	Rps1a	—	1,948
IA2021	Iowa AES	2.1	General Purpose	Black	Rps1k	MS	2,580
IA2016	Iowa AES	2.2	Large Seed, High Protein	Yellow	—	—	1,948
IA2011	Iowa AES	2.2	Lacks Lipoxygenase 2	—	—	—	2,162
IA2012	Iowa AES	2.2	Large Seed	—	—	—	1,503
IA2017	Iowa AES	2.2	Large Seed, High Protein	—	—	—	1,991
IA2019	Iowa AES	2.2	Large Seed	—	—	—	1,593
IA2020	Iowa AES	2.3	Large Seed, High Protein	—	—	—	1,802
IA2030	Iowa AES	2.3	Lipoxygenase Free	—	—	—	1,908
IA2025	Iowa AES	2.4	Lipoxygenase Free	—	—	—	1,908
IA2028	Iowa AES	2.4	Lipoxygenase Free	—	—	—	1,846
IA2023	Iowa AES	2.4	Small Seed	—	—	—	5,974
IA2027	Iowa AES	2.4	Lipoxygenase Free	—	—	—	1,846
IA2033	Iowa AES	2.4	Lipoxygenase Free	—	—	—	1,900
IA2029	Iowa AES	2.4	Lipoxygenase Free	—	—	—	1,948
IA2035	Iowa AES	2.4	Small Seed	—	—	—	5,896
IA2032	Iowa AES	2.5	Lipoxygenase Free	—	—	—	1,726
IA2024	Iowa AES	2.5	Small Seed	—	—	—	6,053
IA2034	Iowa AES	2.5	Large Seed, High Protein	—	—	—	1,900

**Table 11** — Publicly developed varieties entered in 1998 tests.

Variety	Originator	Maturity Rating	Phytophthora Gene	BSR Reaction	SCN Reaction	Chlorosis Score
Daksoy	N.D. AES	00.6	S	S	S	MS
McCall	Minn. AES	00.7	S	S	S	MR
Jim	N.D. AES	00.7	S	S	S	MS
Glacier	Minn. AES	00.8	Rps6	S	S	MS
Agassiz	Minn. AES	0.0	Rps1	S	S	MR
Trail	N.D. AES	0.0	S	S	S	MS
Ozzie	Minn. AES	0.3	Rps1	S	S	MR
MNO301	Minn. AES	0.3	Rps1	S	S	MS
Council	N.D. AES	0.5	Rps1	S	S	MR
Evans	Minn. AES	0.6	Rps1	S	S	MS
Dawson	Minn. AES	0.6	Rps1	S	S	R
Lambert	Minn. AES	0.8	Rps1	S	S	MR
Hendricks	Minn. & S.D. AES	0.9	Rps1	S	S	MS
Surge	Minn. & S.D. AES	0.9	Rps1	S	S	MS
Kato	Minn. AES	1.3	Rps1	S	S	MR
MN1301	Minn. AES	1.3	Rps1c	S	S	MR
Stride	Minn. & S.D. AES	1.3	Rps1	S	S	MS
MN1401	Minn. AES	1.4	Rps1	S	S	MS
Parker	Minn. AES	1.5	Rps1	S	S	S
IA1006	Iowa AES	1.6	S	R	S	MS
Freeborn	Minn. AES	1.6	Rps1	R	R	MR
Bert	Minn. AES	1.8	Rps1	S	S	MS
Granite	Minn. AES	1.8	Rps1	R	S	MS
Faribault	Minn. AES	1.9	Rps1	R	R	MS
Archer	Iowa AES	1.9	Rps1k +6	R	S	MR
Hardin 91	Iowa AES	2.0	Rps1k	S	S	S
Sturdy	Minn. AES	2.1	Rps1	S	S	MR
IA2021	Iowa AES	2.1	Rps1k	S	S	S
Titan	Mich. AES	2.1	S	S	S	MS
IA2008R	Iowa AES	2.2	Rps1k	R	S	MS
Bell	Illinois AES	2.2	S	S	R	MS
IA2036	Iowa AES	2.2	S	S	R	MS
IA2038	Iowa AES	2.3	S	S	S	MS

**Table 12** — Special-use publicly developed varieties entered in 1998 tests.

Variety	Originator / Licensees	Approximate Relative Maturity	Special Traits	Other Characteristics
Dannatto	N.D. AES	0.4	Small	
Proto	Minn. AES	0.6	High Protein	
Minnatto	Minn. AES / Sigco Sun Products	0.7	Small	Rps1 Phytophthora Gene
Toyopro	Minn. AES / Northland Organic Foods	0.8	High Protein	
Kato	Minn. AES	1.3	High Protein	
Black Kato	Minn. AES / Seed America Inc.	1.3	High Protein	Black Seed Coat
IA1005	Iowa AES / ISURF	1.9	Large, High Protein	
IA1007	Iowa AES / ISURF	1.9	Large	
Vinton81	Iowa AES	2.0	Large, High Protein	Rps1 Phytophthora Gene
HP204	Iowa AES / ISURF	2.0	Large, High Protein	
IA2011	Iowa AES / ISURF	2.2	Lacks Lipoxigenase 2	
IA2012	Iowa AES / ISURF	2.2	Large	
IA2016	Iowa AES / ISURF	2.2	Large, High Protein	
IA2017	Iowa AES / ISURF	2.2	Large, High Protein	
IA2019	Iowa AES / ISURF	2.2	Large	
IA2020	Iowa AES / ISURF	2.3	Large, High Protein	
IA2025	Iowa AES / ISURF	2.3	Lipoxigenase Free	
IA2030	Iowa AES / ISURF	2.3	Lipoxigenase Free	
IA2023	Iowa AES / ISURF	2.4	Small	
IA2027	Iowa AES / ISURF	2.4	Lipoxigenase Free	
IA2028	Iowa AES / ISURF	2.4	Lipoxigenase Free	
IA2029	Iowa AES / ISURF	2.4	Lipoxigenase Free	
IA2033	Iowa AES / ISURF	2.4	Lipoxigenase Free	
IA2035	Iowa AES / ISURF	2.4	Small	
IA2024	Iowa AES / ISURF	2.5	Small	
IA2032	Iowa AES / ISURF	2.5	Lipoxigenase Free	
IA2034	Iowa AES / ISURF	2.5	Large, High Protein	

**Locations of Originating Institutions / Licensees**

Sigco Sun Products  
Breckenridge MN 56520

Northland Organic Foods Corp.  
462 Holly Avenue  
St. Paul MN 55102

Seed America, Inc.  
PO Box 226  
Breckenridge MN 56520

ISURF  
Iowa State University Research Foundation  
310 Lab of Mechanics  
Ames IA 50011

Iowa Agricultural Experiment Station  
Iowa State University  
Ames, Iowa 50011

North Dakota Agricultural Experiment Station  
North Dakota State University,  
Fargo ND 58105

Minnesota Agricultural Experiment Station  
University of Minnesota  
St. Paul, MN 55108

**Table 13** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

The listing of registered / certified sources is not to be construed as an offer for sale by grower, nor is it to be considered as public advertising or as a posting of public notice in any manner. Fields of registered / certified growers have, however, been sampled, tested and inspected by the MCIA. Contact the MCIA for further information, caveats, and considerations.

***Registered / certified seed (R = Registered; C = Certified)***

Agassiz	Clay	Anderson, Edmund L.	Ulen	218-596-8605	C
	Clay	Heartland Seeds	Moorhead	218-585-4621	RC
	Clay	Johnson, Brian M.	Hawley	218-962-3316	C
	Clay	Oberg Farms	Moorhead	218-236-9856	C
	Clay	Petermann Seed Farms	Hawley	218-483-3302	RC
	Mahnomen	Bursch Farms, Inc.	Mahnomen	218-935-5353	R
	Mahnomen	Pazdernik Farms, Inc.	Waubun	218-473-2232	RC
	Marshall	Sczepanski, Thomas	Stephen	218-478-2462	C
	Norman	Chisholm, Keith P.	Gary	218-356-8674	R
	Norman	Hanson, Corey, M.	Gary	218-356-8678	R
	Norman	Peppel Bros. Donald & Dennis	Borup	218-582-3242	C
	Norman	Ramstad Brothers	Ada	218-784-7190	C
	Polk	Barrett, John M.	East Grand Forks	218-773-0338	C
	Polk	Bauer Farms	Erskine	218-687-5356	C
	Polk	Brule, David A.	Crookston	218-281-2944	C
	Polk	Clementson, Jon	Erskine	218-687-2345	C
	Polk	Fosston Co-op Seed House	Fosston	218-435-6222	C
	Polk	Holy, Mark	East Grand Forks	218-773-8832	C
	Polk	Kovar, Frank & Duane	East Grand Forks	218-773-9238	C
	Polk	Larson Farms, Inc., Owen	Grand Forks	701-775-3546	C
	Polk	Larson Farms, Jerry Larson	Climax	218-857-3345	R
	Polk	Larson, Arlan Farms, Inc.	Climax	218-857-2535	R
	Polk	Larson, Roger O.	Euclid	218-281-5697	C
	Polk	Mid-Valley Grain Cooperative	Climax	218-857-2275	C
	Polk	Novak, James	Angus	218-745-5048	C
	Polk	Ostenaar, Sidney & DeWayne	Mc Intosh	218-563-7395	RC
	Polk	Peterson, D.W., Inc.	Warren	218-745-4507	RC
	Polk	Ross Seed Co.	Fisher	218-891-2211	C
	Polk	Thorson Farm, Inc., J. O.	East Grand Forks	218-893-2285	RC
	Polk	Vig Farms Inc.	Fosston	218-435-1316	RC
	Red Lake	Swenson Seed Farm	Brooks	218-796-5285	RC
	Wilkin	Nelson, Bradley	Wolverton	218-995-2299	C
	Wilkin	Steenblock Farms, Dale	Campbell	218-630-5500	RC
BSR 101	Faribault	Watowan Farm Service	Kiester	507-294-3697	C
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
Bert	Kandiyohi	Loge, Alan	Willmar	320-235-4178	C
	Renville	Enestvedt Bros.	Sacred Heart	320-765-2728	RC
Corsoy 79	Faribault	Willette Seed Farm, Inc.	Delavan	507-854-3595	C
Council	Becker	Hein Farms, Inc.	Audubon	218-439-6621	C
	Becker	Steffl, William D.	Callaway	218-375-2283	C
	Chippewa	Milan Farmers Elevator	Milan	320-734-4435	C
	Chippewa	Ruiter Seed Farm	Clara City	320-847-3536	C
	Clay	Fuglie, Duane	Ulen	218-596-8528	C
	Clay	Johnson, Brian M.	Hawley	218-962-3316	C
	Clay	Lee Seed Farm	Borup	218-494-3330	C
	Clay	Nord, Donald & John	Hawley	218-937-5783	C
	Clay	Petermann Seeds, Inc.	Hawley	218-483-3302	R
	Clay	Peterson Farm, Sherwood E.	Baker	218-789-7378	RC
	Clay	Wagner, Robert T.	Barnesville	218-789-7212	C
	Clay	Zimmerman, Wayne	Ulen	218-596-8628	C
	Douglas	Sward Seed Farm	Nelson	320-762-0143	C
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	C
	Grant	Adams Seed	Wendell	218-458-2151	RC

**Table 13 (continued)** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

Council	Grant	Thiel Seed Service	Wendell	218-458-2415	C
	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	R
	Marshall	Sczepanski, Thomas	Stephen	218-478-2462	C
	Norman	Chisholm, Keith P.	Gary	218-356-8674	R
	Norman	Ellingson Farms	Borup	218-861-6605	R
	Otter Tail	Brenden, Selvin C.	Rothsay	218-867-2134	R
	Polk	Barrett, John M.	East Grand Forks	218-773-0338	C
	Renville	Kiecker Seed, Lanny	Fairfax	507-426-7534	C
	Stevens	Haberer Seed Farm	Morris	320-795-2468	C
	Swift	Nelson Seed Company	Benson	320-843-3610	C
	Todd	Faust, Kevin	Long Prairie	320-732-3361	C
	Wilkin	Haugrud Seed Plant	Rothsay	218-493-4275	RC
	Wilkin	Nelson, Bradley	Wolverton	218-995-2299	C
	Wilkin	Nordick, J & R	Rothsay	218-867-2605	C
Wilkin	Torkelson, Dennis & Brent	Foxhome	218-736-4607	R	
DSR 133	Le Sueur	Dairyland/Cannon Val.Coop	LeCenter	507-357-6841	C
DSR 178	Brown	Dairyland/Rossbach Seed	Hanska	507-794-7698	C
DSR 180/STS	Le Sueur	Dairyland/Cannon Val. Coop	LeCenter	507-357-6841	C
Daksoy	—	MCIA	St. Paul	800-510-6242	—
Evans	Becker	Hein Farms, Inc.	Audubon	218-439-6621	C
	Brown	Rossbach Lakeside Seeds, Inc.	Hanska	507-794-7698	RC
	Clay	Johnson, Brian M.	Hawley	218-962-3316	C
	Clay	Nord, Donald & John	Hawley	218-937-5783	C
	Clay	Petermann Seeds, Inc.	Hawley	218-483-3302	R
	Douglas	Sward Seed Farm	Nelson	320-762-0143	C
	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	RC
	Meeker	Johnson Seeds of Dassel, Inc.	Dassel	320-275-2430	RC
	Norman	Circle C Seeds	Gary	218-356-8214	C
Wright	Dahlco Seeds, Inc.	Cokato	320-286-5982	C	
Freeborn	Big Stone	Olson, Wesley E.	Clinton	320-325-5565	C
	Faribault	Ehrich Seed Farm	Elmore	507-943-3762	C
	Faribault	Willette Seed Farm, Inc.	Delavan	507-854-3595	RC
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
Glacier	Kittson	Petersen, Ronald L.	Lake Bronson	218-754-4631	C
	Marshall	Kowalski, James	Stephen	218-455-3894	R
	Marshall	Sczepanski, Thomas	Stephen	218-478-2462	RC
	Otter Tail	Brenden, Bruce L.	Rothsay	218-867-2410	R
	Polk	McIntosh Farm Services	McIntosh	218-563-3735	C
Granite	Dodge	Wright Seed Service	West Concord	507-527-2737	C
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
	Lac qui Parle	Buer, Reid	Canby	507-223-7946	RC
	Le Sueur	Haas Seed Farm	Le Sueur	507-665-3683	C
	Lincoln	Deutz, Daniel	Lake Benton	507-368-9234	RC
	Lincoln	Popowski, John	Ivanhoe	507-694-1593	RC
	Lyon	Olson, Jonathan	Cottonwood	507-423-5338	RC
	Scott	Hauer Farms, Inc.	Shakopee	612-445-7554	C
	Wright	Terning Seeds, Inc.	Cokato	320-286-2168	C
HP204	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	R
	Waseca	Galler Seeds	Elysian	507-267-4328	R
	Wright	Dahlco Seeds, Inc.	Cokato	320-286-5982	R
Hardin	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	RC
Hardin 91	Blue Earth	Wendlandt, Gene	Garden City	507-549-3191	C
	Blue Earth	Wendlandt, Tim	Garden City	507-546-3843	C
	Dakota	Hoffman, Paul D.	Hampton	612-463-4394	C
	Dakota	May, Jr., William	Farmington	612-463-8541	C
	Dodge	Wright Seed Service	West Concord	507-527-2737	C

**Table 13 (continued)** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

Hardin 91	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
	Freeborn	Angell Seed Farm	Blooming Prairie	507-583-7581	RC
	Le Sueur	Braun Farms	Le Sueur	507-665-3095	C
	Le Sueur	Cannon Valley Cooperative	Le Center	507-357-6841	C
	Le Sueur	Dick Stangler Farm Seed	Kilkenny	507-595-2883	C
	Le Sueur	Goettl Farms	Le Center	507-357-6509	RC
	Le Sueur	Haas Seed Farm	Le Sueur	507-665-3683	RC
	Meeker	Anderson Seeds	Dassel	320-286-2700	C
	Meeker	Miller Seed Farm	Dassel	320-275-2463	RC
	Meeker	Smith, Steven	Darwin	320-693-6769	C
	Meeker	Wigen Seed Farm	Litchfield	320-693-8182	C
	Mower	Grass & Sons Seed Service	Leroy	507-324-5820	C
	Renville	Fredrickson, Lester	Hector	320-848-2601	R
	Renville	Kiecker Seed Company	Hector	507-426-8167	RC
	Rice	Werner Farm Seeds	Dundas	507-645-7995	C
	Scott	Hauer Farms, Inc.	Shakopee	612-445-7554	C
	Waseca	Byron Farm Store, Inc.	Waseca	507-835-1120	C
	Wright	Borg, Loren Seed Farms	Cokato	320-286-2222	C
	Wright	Dahlco Seeds, Inc.	Cokato	320-286-5982	C
Wright	Terning Seeds, Inc.	Cokato	320-286-2168	C	
Hendricks	Chippewa	Ruiter Seed Farm	Clara City	320-847-3536	C
	Meeker	Johnson Seeds of Dassel, Inc.	Dassel	320-275-2430	RC
Hodgson 78	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	R
	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	RC
IA1006	Blue Earth	Wendlandt, William	Garden City	507-546-3847	C
	Cottonwood	Bondhus, Barry N.	Storden	507-445-3226	RC
	Dakota	Hoffman, Paul D.	Hampton	612-463-4394	C
	Dakota	May, Jr., William	Farmington	612-463-8541	C
	Dodge	Koss, William	Dodge Center	507-374-6786	R
	Dodge	Wright Seed Service	West Concord	507-527-2737	C
	Faribault	Watowan Farm Service	Kiester	507-294-3697	C
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
	Freeborn	Kuiters, Keith S.	Clarks Grove	507-256-4300	RC
	Jackson	Brunk Bros., Gene or William	Brewster	507-842-5471	C
	Jackson	Pietz Farms, Inc.	Lakefield	507-662-6309	C
	Kandiyohi	Bredeson Seed Farm	Willmar	320-235-7315	C
	Kandiyohi	Loge, Alan	Willmar	320-235-4178	C
	Le Sueur	Cannon Valley Cooperative	Le Center	507-357-6841	C
	Le Sueur	Dick Stangler Farm Seed	Kilkenny	507-595-2883	RC
	Le Sueur	Haas Seed Farm	Le Sueur	507-665-3683	RC
	Lincoln	Jerzak, Jerome	Ivanhoe	507-694-1582	R
	Lincoln	Jerzak, John	Ivanhoe	507-694-1834	RC
	Lincoln	Jerzak, William W.	Ivanhoe	507-694-1736	C
	Lincoln	Oerter, Donald	Tyler	507-247-3839	C
	Lyon	Huso, Elroy & Howard	Minneota	507-872-6821	R
	McLeod	Dammann Seed Farms	Plato	320-864-3004	C
	Meeker	Anderson Seeds	Dassel	320-286-2700	R
	Meeker	Miller Seed Farm	Dassel	320-275-2463	RC
	Meeker	Smith, Steven	Darwin	320-693-6769	C
	Meeker	Wigen Seed Farm	Litchfield	320-693-8182	RC
	Mower	Zimmerman Seeds	Racine	507-378-2077	C
	Murray	Ziemke Farms	Walnut Grove	507-629-3285	C
	Nicollet	Anderson & Sons	St. Peter	507-246-5032	RC
	Pipestone	Spronk, Art & Sons Seed Farm	Edgerton	507-442-5334	R
	Redwood	Lange, Robert A.	Windom	507-831-4065	C
	Redwood	Petersen, Rick D.	Redwood Falls	507-644-5440	C
	Renville	Enestvedt Bros.	Sacred Heart	320-765-2728	R
	Renville	Kiecker Seed Company	Hector	507-426-8167	RC
	Rice	Werner Farm Seeds	Dundas	507-645-7995	C
	Wabasha	Zabel Seeds	Plainview	507-534-2487	C

**Table 13 (continued)** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

IA1006	Waseca	Byron Farm Store, Inc.	Waseca	507-835-1120	C
	Wright	Terning Seeds, Inc.	Cokato	320-286-2168	C
	Yellow Med.	Rosetter, Richard D.	Granite Falls	320-564-3620	C
IA2008	Brown	Rossbach Lakeside Seeds, Inc.	Hanska	507-794-7698	C
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
	Le Sueur	Birr Brothers, Mark & Gene	Kasota	507-931-2218	RC
	Le Sueur	Dick Stangler Farm Seed	Kilkenny	507-595-2883	R
	Nicollet	Anderson & Sons	St. Peter	507-246-5032	RC
	Waseca	Byron Farm Store, Inc.	Waseca	507-835-1120	C
IA2008R	Faribault	Ehrich Seed Farm	Elmore	507-943-3762	C
	Faribault	Watonwan Farm Service	Kiester	507-294-3697	C
	Faribault	Willette Seed Farm, Inc.	Delavan	507-854-3595	C
	Jackson	Tusa, Bill & Jim	Jackson	507-847-3746	C
	Le Sueur	Haas Seed Farm	Le Sueur	507-665-3683	RC
	Lincoln	Deutz, Daniel	Lake Benton	507-368-9234	RC
	Mower	Zimmerman Seeds	Racine	507-378-2077	C
	Renville	Enestvedt Bros.	Sacred Heart	320-765-2728	C
	Renville	Kiecker Seed, Lanny	Fairfax	507-426-7534	R
	Scott	Hauer Farms, Inc.	Shakopee	612-445-7554	C
	IA2011	Wright	Dahlco Seeds, Inc.	Cokato	320-286-5982
IA2012	Cottonwood	Bondhus, Barry N.	Storden	507-445-3226	R
	Dodge	Frontier Commodities	Byron	507-634-6060	R
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	R
IA2016	Blue Earth	Ramy Seed Co.	Mankato	507-387-4091	R
	Cottonwood	Bondhus, Barry N.	Storden	507-445-3226	R
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	R
	Waseca	Galler Seeds	Elysian	507-267-4328	R
IA2020	Cottonwood	Bondhus, Barry N.	Storden	507-445-3226	R
	Dodge	Frontier Commodities	Byron	507-634-6060	R
	Waseca	Galler Seeds	Elysian	507-267-4328	R
IA2021	Blue Earth	Knewton Seed Co.	Good Thunder	507-278-4087	C
	Brown	Rossbach Lakeside Seeds, Inc.	Hanska	507-794-7698	RC
	Cottonwood	Bondhus, Barry N.	Storden	507-445-3226	RC
	Dakota	May, Jr., William	Farmington	612-463-8541	C
	Dodge	Koss, William	Dodge Center	507-374-6786	R
	Dodge	Wright Seed Service	West Concord	507-527-2737	C
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
	Freeborn	Kuiters, Keith S.	Clarks Grove	507-256-4300	RC
	Jackson	Brunk Bros., Gene or William	Brewster	507-842-5471	C
	Jackson	Pietz Farms, Inc.	Lakefield	507-662-6309	RC
	Jackson	Tusa, Bill & Jim	Jackson	507-847-3746	C
	Le Sueur	Birr Brothers, Mark & Gene	Kasota	507-931-2218	RC
	Le Sueur	Dick Stangler Farm Seed	Kilkenny	507-595-2883	R
	Le Sueur	Goettl Farms	Le Center	507-357-6509	RC
	Le Sueur	Haas Seed Farm	Le Sueur	507-665-3683	RC
	Lincoln	Oerter, Donald	Tyler	507-247-3839	C
	Lyon	Huso, Elroy & Howard	Minneota	507-872-6821	R
	Lyon	Olson, Jonathan	Cottonwood	507-423-5338	C
	Mower	Zimmerman Seeds	Racine	507-378-2077	C
	Nicollet	Anderson & Sons	St. Peter	507-246-5032	RC
	Nobles	Haberman, F. Anthony	Brewster	507-842-5312	R
	Pipestone	Spronk, Art & Sons	Edgerton	507-442-5334	RC
	Redwood	Sawvell's Seed, Inc.	Clements	507-692-2240	R
	Renville	Kiecker Seed, Lanny	Fairfax	507-426-7534	RC
	Rice	Werner Farm Seeds	Dundas	507-645-7995	C
	Scott	Hauer Farms, Inc.	Shakopee	612-445-7554	C
	Wabasha	Zabel Seeds	Plainview	507-534-2487	C
	Waseca	Byron, Mark	Waseca	507-835-7194	C

**Table 13 (continued)** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

IA2034	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	R
	Lyon	Olson, Jonathan	Cottonwood	507-423-5338	R
	Waseca	Galler Seeds	Elysian	507-267-4328	R
IA2035	Waseca	Galler Seeds	Elysian	507-267-4328	R
IA2036	Brown	Gluth, William	Morgan	507-249-3970	R
	Faribault	Willette Seed Farm, Inc.	Delavan	507-854-3595	R
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	R
	Goodhue	Stenlund, Neal	Goodhue	651-923-4379	R
	Jackson	Brunk Bros., Gene or William	Brewster	507-842-5471	R
	Jackson	Hartman Bros.	Okabena	507-853-4702	R
	Jackson	Pietz Farms, Inc.	Lakefield	507-662-6309	R
	Jackson	Rubis, Craig	Lakefield	507-662-6494	R
	Lac qui Parle	Buer, Reid	Canby	507-223-7946	R
	Mower	Zimmerman Seeds	Racine	507-378-2077	R
	Nobles	Haberman, F. Anthony	Brewster	507-842-5312	R
Jim	—	MCIA	St. Paul	800-510-6242	—
Kato	Blue Earth	Knewton Seed Co.	Good Thunder	507-278-4087	RC
	Blue Earth	Ramy Seed Co., Michael Ramy	Mankato	507-387-4091	C
	Chippewa	Milan Farmers Elevator	Milan	320-734-4435	C
	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	RC
	Kandiyohi	Loge, Alan	Willmar	320-235-4178	C
	Lyon	Olson, Jonathan	Cottonwood	507-423-5338	RC
	Meeker	Johnson Seeds of Dassel, Inc.	Dassel	320-275-2430	C
	Meeker	Wigen, Marlow E.	Litchfield	320-693-8182	C
	Renville	Wertish, Thomas R.	Hector	320-848-2453	C
	Scott	Hauer Farms, Inc.	Shakopee	612-445-7554	C
	Swift	Falk Seed Farm	Murdock	320-875-4341	RC
	Swift	Gordon Farms, Inc.	Murdock	320-875-3132	C
	Wright	Dahlco Seeds, Inc.	Cokato	320-286-5982	C
Lambert	Clay	Arneson Farms	Hawley	218-483-4165	RC
	Clay	Heartland Seeds	Moorhead	218-585-4621	C
	Clay	Oberg Farms	Moorhead	218-236-9856	C
	Dakota	May, Jr., William	Farmington	612-463-8541	C
	Douglas	Sward Seed Farm	Nelson	320-762-0143	C
	Douglas	Thompson Farms	Kensington	320-965-2486	C
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
	Grant	Adams Seed	Wendell	218-458-2151	RC
	Grant	Backman Seeds	Herman	320-677-2231	C
	Grant	Thiel Seed Service	Wendell	218-458-2415	C
	Hennepin	Coleman, Craig	Edina	612-924-9161	R
	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	RC
	Kandiyohi	Bredeson Seed Farm	Willmar	320-235-7315	RC
	Kandiyohi	Loge, Alan	Willmar	320-235-4178	C
	Le Sueur	Haas Seed Farm	Le Sueur	507-665-3683	RC
	Meeker	Anderson Seeds	Dassel	320-286-2700	C
	Meeker	Johnson Seeds of Dassel, Inc.	Dassel	320-275-2430	C
	Meeker	Miller Seed Farm	Dassel	320-275-2463	C
	Meeker	Wigen Seed Farm	Litchfield	320-693-8182	RC
	Renville	Kiecker Seed Company	Hector	507-426-8167	RC
	Renville	Kiecker Seed, Lanny	Fairfax	507-426-7534	C
	Scott	Hauer Farms, Inc.	Shakopee	612-445-7554	C
	Stevens	Haberer Seed Farm	Morris	320-795-2468	C
	Swift	Falk Seed Farm	Murdock	320-875-4341	C
	Wabasha	Zabel Seeds	Plainview	507-534-2487	C
	Wilkin	Knapp Seed Farm, Inc.	Foxhome	218-739-3366	C
	Wilkin	Nordick, J & R	Rothsay	218-867-2605	C
	Wright	Borg, Loren Seed Farms	Cokato	320-286-2222	C
	Wright	Dahlco Seeds, Inc.	Cokato	320-286-5982	C
	Wright	Terning Seeds, Inc.	Cokato	320-286-2168	C

**Table 13 (continued)** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

MN0301	Becker	Enget, Larry	Audubon	218-439-6179	C
	Clay	Heartland Seeds	Moorhead	218-585-4621	C
	Clay	Lee Seed Farm	Borup	218-494-3330	C
	Clay	Petermann Seeds, Inc.	Hawley	218-483-3302	C
	Clay	Peterson Farm, Sherwood E.	Baker	218-789-7378	C
	Clay	Tobolt Seed	Moorhead	218-287-2904	C
	Clay	Zimmerman, Wayne	Ulen	218-596-8628	C
	Douglas	Sward Seed Farm	Nelson	320-762-0143	C
	Grant	Thiel Seed Service	Wendell	218-458-2415	C
	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	C
	Mahnomen	Pazdernik Farms, Inc.	Waubun	218-473-2232	C
	Marshall	Peterson, Maynard	Stephen	218-478-3859	C
	Marshall	Sczepanski, Thomas	Stephen	218-478-2462	C
	Norman	Chisholm, Keith P.	Gary	218-356-8674	C
	Norman	Ellingson Farms	Borup	218-861-6605	C
	Norman	Kraft, John	Gary	218-584-8521	C
	Norman	Kveno, Harry	Gary	218-356-8278	C
	Otter Tail	Brenden, Bruce L.	Rothsay	218-867-2410	C
	Otter Tail	Brenden, Selvin C.	Rothsay	218-867-2134	C
	Out of State	Anderson, Gerald D	Grand Forks	701-775-8766	C
	Polk	Ostenaar, Sidney & DeWayne	Mc Intosh	218-563-7395	C
	Polk	Skaug, M.R. Farm, Inc.	Beltrami	218-926-5545	C
	Polk	Vig Farms Inc.	Fosston	218-435-1316	C
	Wilkin	Haugrud Seed Plant	Rothsay	218-493-4275	C
MN1301	Cottonwood	Bondhus, Barry N.	Storden	507-445-3226	C
	Dodge	Koss, William	Dodge Center	507-374-6786	C
	Douglas	Sward Seed Farm	Nelson	320-762-0143	C
	Grant	Jennen, Richard J. & Sons	Elbow Lake	218-685-4903	C
	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	C
	Kandiyohi	Bredeson Seed Farm	Willmar	320-235-7315	C
	Kandiyohi	Loge, Alan	Willmar	320-235-4178	C
	Lac qui Parle	Hermanson Seed Plant	Boyd	320-855-2527	C
	Lac qui Parle	Madison Farmers Mill & Elev.	Madison	320-598-7351	C
	Le Sueur	Haas Seed Farm	Le Sueur	507-665-3683	C
	Lyon	Olson, Jonathan	Cottonwood	507-423-5338	C
	Meeker	Wigen Seed Farm	Litchfield	320-693-8182	C
	Renville	Enestvedt Bros.	Sacred Heart	320-765-2728	C
	Renville	Kiecker Seed Company	Hector	507-426-8167	C
	Stevens	Haberer Seed Farm	Morris	320-795-2468	C
	Swift	Falk Seed Farm	Murdock	320-875-4341	C
	MN1401	Brown	Rossbach Lakeside Seeds, Inc.	Hanska	507-794-7698
Freeborn		Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
Freeborn		Angell Seed Farm	Blooming Prairie	507-583-7581	R
Goodhue		Stenlund, Arne H. & Son	Goodhue	651-923-4107	R
Kandiyohi		Behm Seed Company	Atwater	320-974-3003	R
Kandiyohi		Bredeson Seed Farm	Willmar	320-235-7315	C
Kandiyohi		Loge, Alan	Willmar	320-235-4178	R
Lac qui Parle		Buer, Reid	Canby	507-223-7946	R
Lac qui Parle		Hermanson Seed Plant	Boyd	320-855-2527	R
Lac qui Parle		Kemen, Robert & Sons	Madison	320-769-4413	R
Lac qui Parle		Madison Farmers Mill & Elev.	Madison	320-598-7351	R
Le Sueur		Goettl Farms	Le Center	507-357-6509	R
Le Sueur		Haas Seed Farm	Le Sueur	507-665-3683	RC
Lincoln		Anderson, Merv	Porter	507-223-7981	R
Lincoln		Oerter, Donald	Tyler	507-247-3839	C
Meeker		Johnson Seeds of Dassel, Inc.	Dassel	320-275-2430	C
Meeker		Miller Seed Farm	Dassel	320-275-2463	R
Meeker		Smith, Steven	Darwin	320-693-6769	R
Meeker		Wigen Seed Farm	Litchfield	320-693-8182	R
Nicollet		Anderson & Sons	St. Peter	507-246-5032	R

**Table 13 (continued)** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

MN1401	Renville	Enestvedt Bros.	Sacred Heart	320-765-2728	R	
	Renville	JSF, Inc.	Sacred Heart	320-765-2225	C	
	Renville	Kiecker Seed Company	Hector	507-426-8167	R	
	Stevens	Schaefer Bros.	Hancock	320-392-5380	R	
	Swift	Busse Seeds	Appleton	320-394-2315	RC	
	Swift	Falk Seed Farm	Murdock	320-875-4341	R	
	Swift	Lee's Seed Farm	Benson	320-843-2857	RC	
	Traverse	Johnson, David A.	Wheaton	320-563-4533	R	
	Yellow Med.	Brusven, Mitcheal V.	Clarkfield	320-669-4654	RC	
McCall	Clay	Fuglie, Duane	Ulen	218-596-8528	C	
	Clay	Olek, Vernard	Felton	218-494-3440	C	
	Clay	Petermann Seeds, Inc.	Hawley	218-483-3302	R	
	Clay	Wetterlin, Jerry	Glyndon	218-494-3339	C	
	Marshall	Riopelle, Jack L.	Argyle	218-437-8147	R	
	Marshall	Robertson Farms, Inc.	Argyle	218-437-6300	C	
	Marshall	Sczepanski, Thomas	Stephen	218-478-2462	C	
	Red Lake	Swenson Seed Farm	Brooks	218-796-5285	C	
	Wilkin	Knapp Seed Farm, Inc.	Foxhome	218-739-3366	R	
Minnatto	Wilkin	Friederichs Farm	Foxhome	218-643-2363	C	
Norpro	Clay	Petermann Seed Farms	Hawley	218-483-3302	R	
Ozzie	Becker	Steffl, William D.	Callaway	218-375-2283	C	
	Clay	Fischer, Wilbert & Dale	Glyndon	218/98-2741	C	
	Clay	Zimmerman, Wayne	Ulen	218-596-8628	RC	
Parker	Chippewa	Milan Farmers Elevator	Milan	320-734-4435	C	
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC	
	Jackson	Hartman Bros.	Okabena	507-853-4702	C	
	Jackson	Pietz Farms, Inc.	Lakefield	507-662-6309	C	
	Kandiyohi	Behm Seed Company	Atwater	320-974-3003	RC	
	Lac qui Parle	Hermanson Seed Plant	Boyd	320-855-2527	C	
	Lac qui Parle	Madison Farmers Mill & Elev.	Madison	320-598-7351	C	
	Le Sueur	Birr Brothers, Mark & Gene	Kasota	507-931-2218	RC	
	Lincoln	Anderson, Merv	Porter	507-223-7981	C	
	Lincoln	Jerzak, John	Ivanhoe	507-694-1834	RC	
	Lincoln	Jerzak, William W.	Ivanhoe	507-694-1736	C	
	Lincoln	Oerter, Donald	Tyler	507-247-3839	C	
	Lincoln	Popowski, John	Ivanhoe	507-694-1593	RC	
	Nobles	Haberman, F. Anthony	Brewster	507-842-5312	R	
	Pipestone	Spronk, Art & Sons Seed Farm	Edgerton	507-442-5334	R	
	Redwood	Tauer, Dennis	Springfield	507-723-5866	RC	
	Redwood	Zeug Farm Seeds	Lucan	507-747-2731	C	
	Renville	Enestvedt Bros.	Sacred Heart	320-765-2728	C	
	Rice	Werner Farm Seeds	Dundas	507-645-7995	C	
	Scott	Hauer Farms, Inc.	Shakopee	612-445-7554	C	
	Yellow Med.	Antony, David N.	Porter	507-223-7144	C	
	Yellow Med.	Rosetter, Richard D.	Granite Falls	320-564-3620	R	
	Sturdy	Brown	Krueger, Matthew	Springfield	507-723-4484	C
		Brown	Rossbach Lakeside Seeds, Inc.	Hanska	507-794-7698	C
Cottonwood		Imker, Brent	Lamberton	507-752-7697	C	
Dakota		Hoffman, Paul D.	Hampton	612-463-4394	C	
Freeborn		Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC	
Lac qui Parle		Buer, Reid	Canby	507-223-7946	RC	
Lac qui Parle		Hermanson Seed Plant	Boyd	320-855-2527	C	
Lac qui Parle		Kemen, Robert & Sons	Madison	320-769-4413	RC	
Lac qui Parle		Madison Farmers Mill & Elev.	Madison	320-598-7351	C	
Le Sueur		Birr Brothers, Mark & Gene	Kasota	507-931-2218	RC	
Le Sueur		Haas Seed Farm	Le Sueur	507-665-3683	C	
Redwood		Sawvell's Seed, Inc.	Clements	507-692-2240	R	
Redwood		Tauer, Dennis	Springfield	507-723-5866	RC	
Redwood		Zeug Farm Seeds	Lucan	507-747-2731	C	

**Table 13 (continued)** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

Sturdy	Renville	Kiecker Seed Company	Hector	507-426-8167	RC	
	Renville	Nelson, Kenneth B.	Fairfax	507-426-7853	C	
	Scott	Hauer Farms, Inc.	Shakopee	612-445-7554	C	
	Yellow Med.	Antony, David N.	Porter	507-223-7144	C	
	Yellow Med.	Rosetter, Richard D.	Granite Falls	320-564-3620	R	
Surge	Big Stone	Clinton Ag Service, Inc.	Clinton	320-325-5203	R	
	Chippewa	Caspers, Bryan	Raymond	320-847-3539	C	
	Clay	Heartland Seeds	Moorhead	218-585-4621	C	
	Dakota	Hoffman, Paul D.	Hampton	612-463-4394	C	
	Douglas	Sward Seed Farm	Nelson	320-762-0143	R	
	Goodhue	Stenlund, Arne H. & Son	Goodhue	651-923-4107	C	
	Grant	Adams Seed	Wendell	218-458-2151	RC	
	Grant	Biss, Larry	Wendell	218-458-2205	RC	
	Kandiyohi	Loge, Alan	Willmar	320-235-4178	C	
	Lac qui Parle	Buer, Reid	Canby	507-223-7946	R	
	Lac qui Parle	Kemen, Robert & Sons	Madison	320-769-4413	RC	
	Lincoln	Deutz, Daniel	Lake Benton	507-368-9234	RC	
	Lincoln	Popowski, John	Ivanhoe	507-694-1593	C	
	Lyon	Huso, Elroy & Howard	Minneota	507-872-6821	C	
	Meeker	Wigen Seed Farm	Litchfield	320-693-8182	C	
	Otter Tail	Walkup, John	Campbell	218-739-2580	C	
	Redwood	Tauer, Dennis	Springfield	507-723-5866	R	
	Renville	Enestvedt Bros.	Sacred Heart	320-765-2728	RC	
	Renville	Kiecker Seed, Lanny	Fairfax	507-426-7534	R	
	Rice	Werner Farm Seeds	Dundas	507-645-7995	C	
	Stevens	Haberer Seed Farm	Morris	320-795-2468	C	
	Stevens	Schaefer Bros.	Hancock	320-392-5380	C	
	Stevens	Sperr, Duane & Rollie	Donnelly	320-246-3496	C	
	Swift	Busse Seeds	Appleton	320-394-2315	C	
	Swift	Lee's Seed Farm	Benson	320-843-2857	C	
	Swift	Nelson Seed Company	Benson	320-843-3610	C	
	Traverse	Rinke, David	Wheaton	320-563-4864	R	
	Wilkin	Knapp Seed Farm, Inc.	Foxhome	218-739-3366	C	
	Yellow Med.	Kuehn, Daryl	Echo	507-925-4236	C	
	Swift	Douglas	Sward Seed Farm	Nelson	320-762-0143	R
	Traill	Becker	Enget, Larry	Audubon	218-439-6179	C
		Becker	Hein Farms, Inc.	Audubon	218-439-6621	R
Clay		Anderson, Lynn	Moorhead	218-287-1765	R	
Clay		Arneson Farms	Hawley	218-483-4165	R	
Clay		Heartland Seeds	Moorhead	218-585-4621	C	
Clay		Lee Seed Farm	Borup	218-494-3330	RC	
Clay		Olsgaard, Inc., Harold	Moorhead	218-585-4535	R	
Clay		Peterson Farm, Sherwood E.	Baker	218-789-7378	R	
Clay		Zimmerman, Wayne	Ulen	218-596-8628	C	
Kittson		Weinlaeder Seed Company	Drayton	701-454-6427	RC	
Mahnomen		Haugo, David	Waubun	218-473-2254	R	
Marshall		Gostanzik, Stan	Argyle	218-437-8149	C	
Marshall		Kowalski, James	Stephen	218-455-3894	R	
Marshall		Riopelle, Earl & Brent	Argyle	218-437-8291	C	
Marshall		Rivard's Quality Seeds, Inc.	Argyle	218-437-6638	RC	
Marshall		Sczepanski, Thomas	Stephen	218-478-2462	R	
Marshall		Widner, Neil	Stephen	218-478-3616	R	
Marshall		Yutrzenka, Don and Mark	Argyle	218-437-8428	C	
Norman		Brandt, Robert	Ada	218-784-4093	R	
Norman		Brandt, Robert Jr.	Ada	218-784-4093	C	
Norman		Brandt, Wayne & John	Ada	218-784-4774	R	
Norman		Chisholm, Joseph R.	Gary	218-356-8282	C	
Norman		Chisholm, Keith P.	Gary	218-356-8674	RC	
Otter Tail		Brenden, Bruce L.	Rothsay	218-867-2410	C	
Otter Tail		Brenden, Selvin C.	Rothsay	218-867-2134	C	

**Table 13 (continued)** — Potential 1999 registered and certified soybean seed sources known to the Minnesota Crop Improvement Association.

Trail	Out of state	Anderson, Gerald D	Grand Forks	701-775-8766	C
	Polk	Balstad, Scott	Fosston	218-435-6311	R
	Polk	H & J Farms, Inc.	Warren	218-745-5018	R
	Polk	Mid-Valley Grain Cooperative	Crookston	218-281-2881	C
	Polk	Peterson, D.W., Inc.	Warren	218-745-4507	R
	Polk	Peterson, Douglas	East Grand Forks	218-773-9120	R
	Polk	Ross Seed Co.	Fisher	218-891-2211	RC
	Polk	Thorson Farm, Inc., J. O.	East Grand Forks	218-893-2285	RC
	Polk	Vig Farms Inc.	Fosston	218-435-1316	C
	Polk	Wentzel, Walton Farms, Inc.	Fisher	218-281-2207	R
	Red Lake	Swenson Seed Farm	Brooks	218-796-5285	R
	Red Lake	Whalen, Greg	Oklee	218-796-5379	C
	Wilkin	Blilie, Steve	Wolverton	218-995-2815	R
	Wilkin	Larson Farms/Eldon	Rothsay	218-867-2674	R
	Wilkin	Nelson, Bradley	Wolverton	218-995-2299	C
Vinton 81	Blue Earth	Ramy Seed Co., Michael Ramy	Mankato	507-387-4091	C
	Cottonwood	Bondhus, Barry N.	Storden	507-445-3226	R
	Dodge	Frontier Commodities	Byron	507-634-6060	R
	Faribault	Willette Seed Farm, Inc.	Delavan	507-854-3595	RC
	Fillmore	Moeller, Virgil	Spring Valley	507-346-2057	C
	Freeborn	Albert Lea Seed House, Inc.	Albert Lea	507-373-3161	RC
	Lyon	Olson, Jonathan	Cottonwood	507-423-5338	C
	Mower	Grass & Sons Seed Service	Leroy	507-324-5820	RC
	Waseca	Galler Seeds	Elysian	507-267-4328	R
	Wright	Dahlco Seeds, Inc.	Cokato	320-286-5982	R

## Soybean Planting Rate and Date

Rates are based on normal seedbeds and on normal size, good quality seed. Rates used will vary greatly depending on seed cost, desired stand, expected mortality, emerging ability, seed weight, seed germination, seedbed condition, depth of planting and planting equipment. Weight given is the most widely accepted in the U.S.

Use	Bushel Weight (pounds)	Seeds/pound (number)	Rate/acre (pounds)	Rate (seeds)	Planting Date
7-inch rows	60	2,800	56	2/foot of row	May 5 to May 25
10-inch rows				3/foot of row	
20-inch rows				6/foot of row	
22-inch rows				9/foot of row	
30-inch rows				12/foot of row	