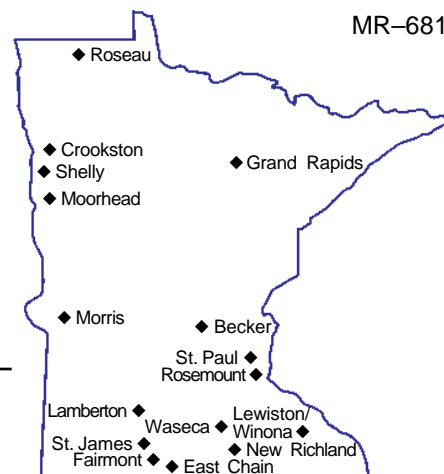


# Minnesota Agricultural Experiment Station

# VARIETY TRIALS

## Soybean



Locations of soybean trials.

Successful crop production depends to a considerable extent on selecting the best varieties for a particular farm. For that reason, varieties are compared in trial plots on experiment station fields at St. Paul, Rosemount, Waseca, Lambertson, Morris, Crookston, Grand Rapids and Becker, and on farmers' fields. 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.

### Variety Classifications

Varieties are classed into groups under headings such as "recommended," "not adequately tested," "special purpose," etc. Varietal descriptions are arranged alphabetically within groups. "Public" and "private" designations are also attached to some group headings.

Classifications of varieties as "recommended," "other" and "special purpose" are determined each year by the Experiment Station Crop Variety Review Committee. A variety is usually not "recommended" unless it has been better than other varieties in important characteristics in three years of testing.

Varieties from other public experiment stations and private plant breeders not sufficiently evaluated here are listed as "varieties not adequately tested." Available information is presented, but no conclusions are drawn regarding their suitability for Minnesota conditions.

Listings under "other varieties" are usually inferior in one or more characteristics, as demonstrated in comparative tests. Varieties in the "private" category are good performers, on which the MAES does not make recommendations.

Seed of varieties in all these groups may be eligible for certification, and the

use of certified seed is suggested. However, certification does not imply recommendation. Registered and certified seed of varieties described in this report can be purchased from seed dealers or from growers listed in the *Minnesota Registered and Certified Seed Directory for 1997 Planting*. This annual publication can be obtained without charge from the Minnesota Crop Improvement Association, 1900 Hendon Avenue, St. Paul, MN 55108, or from county extension agents' offices. The information is also available on-line at <<http://www.rtrade.org/mcia/>>.

### Interpreting the Tables

The LSD (Least Significant Difference) figures listed are statistical measures of variability within the trials. This statistic is used to determine whether the differences between two varieties are due primarily to genetic difference in the varieties.

If the quality difference between two varieties equals or exceeds the LSD value listed at the bottom of each column, you can conclude that the higher yielding variety was superior. If the difference is less, greater attention should be given to other traits which are also important in making your variety choices.

### Protection Act Changes

Varieties receiving their U.S. Plant Variety Protection Act registration beginning in 1995 are identified by the code "PVP(94)." These varieties may *not* be sold by a producer, not even to a relative or neighbor, without the express permission of the variety's developer/owner.

### Authors/Researchers

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Field work was supervised by Thomas R. Hoverstad, Steven R. Quiring, John V. Wiersma, and Russell D. Mathison.

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# SOYBEAN VARIETY TRIALS

Minnesota Agricultural Experiment Station — University of Minnesota  
December 1996

Results of Soybean Variety Tests Conducted by the Minnesota Agricultural Experiment Station. This report was prepared by James Orf, agronomist, Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN 55108. [phone: 612/625-8275; e-mail: <orfxx001@maroon.tc.umn.edu>].

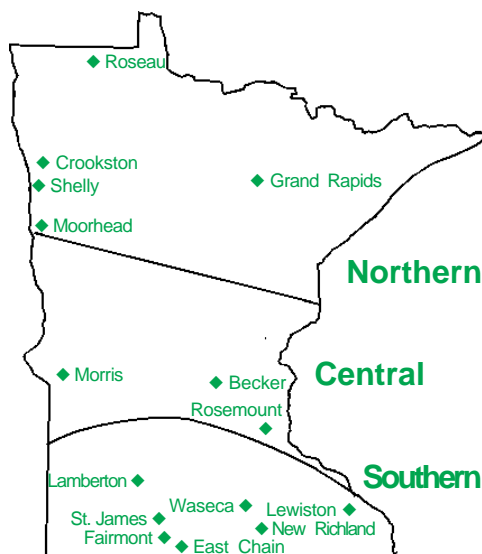
## SOYBEAN

Many soybean varieties are available in Minnesota, developed by public and/or private organizations. Important characteristics of these soybean varieties are presented in this section's tables.

Tables 2 to 7 deal with varieties developed by publicly supported institutions and are being considered for recommendation by Minnesota Agricultural Experiment Station. Tables 8 to 11 show performance characteristics of privately developed varieties as well as several public varieties.

Performance trials were conducted at various locations in the northern, central and southern zones (see map). Specific test locations for each zone are indicated in each table. Becker was the only irrigated test location. Trials were planted between May 5 and June 5 unless otherwise indicated. Row spacings vary in some tables.

### Soybean Maturity Zones



## Variety Selection Considerations

Several major factors need to be considered in selecting varieties, including maturity, yield, row spacing, plant height and lodging, chlorosis response, protein and oil values, and phytophthora gene, soybean cyst nematode and brown stem rot resistance.

**Maturity**—Soybeans are sensitive to day length, so date of maturity is affected by production zone latitude. Because of this, each soybean variety has a narrow range of adaptation.

Varieties that mature before the fall killing frost should be selected to obtain high yield and quality. A soybean variety is considered mature when 95 percent of the pods have reached their mature color. Harvesting would normally be done one to two weeks after this stage is reached, depending on drying conditions.

Relative maturity ratings are shown in the tables. These consist of a maturity group designation followed by a number (varying from 0-9) which indicates the ranking within each maturity group. For example, Agassiz with a relative maturity rating of 0.0, is the earliest group 0 maturity variety while Dassel with a rating of 0.9 is the latest. These rating designations are the result of our experience with the variety over years and test locations.

The relative maturity ratings in the tables for the private varieties were provided by the companies which market them.

**Yield**—Varieties in each table are listed in order to their actual 1996 maturity date and not on the basis of their long term relative maturity designation. Later maturing varieties are normally expected to have higher yield potential than earlier maturing varieties. Compare yields, by looking at varieties with a similar maturity rating. Yield comparisons are more reliable if data are available for several years. Data from different tables should not be compared. All yield data reported in these tables were obtained from replicated tests harvested with a plot combine.

The LSD figures listed at the bottom of table yield columns are measures of variability within the trials. If the yield difference between two varieties within a column exceeds this LSD value, one can assume that the higher yielding variety was truly superior. A 20 percent level of significance is used in the tables. This means that 80 percent of the time, yield differences exceeding the LSD value are real differences, the remaining 20 percent of the time the differences are due to chance.

**Row Spacing**—Research over many years and at many locations has shown that yields from narrow rows (10 inches to 18 inches) are higher than wide rows (20 inches to 40 inches). Although rankings of varieties can change with row spacing, top performers in a wide spacing should be among the top performers in a narrow spacing.

**Plant Height and Lodging**—These measurements indicate stem strength and standability of varieties. They relate somewhat to ease of combining. Actual height and lodging scores are influenced by environmental conditions, so values may vary from year to year. Use these values by comparing scores of newer varieties to scores of a familiar variety.

**Chlorosis**—Ratings for chlorosis are an indication of how much leaf yellowing occurs in tests conducted on a high lime (high pH) soil near Lamberton. They indicate how well varieties perform relative to each other on such soils. How these ratings relate to the numerical values used in soybean variety trial reports previous to 1995 is:

Pre-1995 Numerical Score	Current Rating Designation
1-2	Resistant (R)
2.1-3	Moderately Resistant (MR)
3.1-4	Moderately Susceptible (MS)
4.1-5	Susceptible (S)

**Phytophthora**—Phytophthora root rot can cause significant yield losses when susceptible varieties are planted in poorly drained fields. There are several races of this fungus, and it is important to know which are present in a field. Several genes can be incorporated into varieties to provide complete resistance to specific races.

Table 1. 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	
Rps1	■	■								■	■		■	■	■	■	■	■							■	
Rps1b	■		■	■	■	■	■	■	■	■			■	■	■			■	■			■	■			
Rps1c	■	■	■			■	■	■	■	■	■		■					■				■		■	■	
Rps1k	■	■	■	■	■	■	■	■	■	■			■	■	■			■	■				■	■	■	
Rps3	■	■	■	■	■			■	■	■		■	■	■			■		■				■		■	■
Rps4	■	■	■	■						■		■						■	■	■	■	■				■
Rps6	■	■	■	■						■		■		■	■	■		■	■	■	■	■				■

Some information refers to “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 genes present were determined based on data from greenhouse plants grown by scientists in the University of Minnesota Department of Plant Pathology, and on information supplied by the companies.

**Soybean Cyst Nematode**—SCN was first identified in Minnesota in 1978 and is now known to occur in 32 Minnesota counties, according to Cooperative Pest Survey Program data. Areas infested and numbers of nematodes both appear to be increasing. When SCN numbers are high, significant yield losses can occur. Several races of SCN are known to occur in Minnesota. Rotations to non-host crops and planting resistant varieties assist in managing nematode populations.

Results of a special performance test of public and private varieties resistant to soybean cyst nematode are provided in Tables 11A and 11B. These trials were conducted on “infested” sites near East Chain, New Richland and St. James and on “non-infested” sites at Fairmont, Lamberton and Waseca.

Additional details on the soybean cyst nematode and management of infested fields can be found in the publication *The Soybean Cyst Nematode* (AG-FO-3935), 1990, Minne-

sota Extension Service, University of Minnesota. It is available from County Extension offices or the Distribution Center, 3 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108.

**Brown Stem Rot**—Brown stem rot 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 out of soybeans, assist in the management of this disease. See text descriptions of public varieties for information about their resistance to this fungus.

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

**White Mold**—Sclerotinia stem rot was less damaging to the 1996 crop than it was in 1994. Ratings of varieties for resistance to Sclerotinia are difficult to obtain because infection is dependent upon environmental conditions during and after flowering. Varieties that appear to be resistant one year can be devastated by the disease the next year if conditions are right for the disease to spread. Growers should expect that varieties that consistently have less disease over several years will be the best performers under high disease pressure. A reliable test for resistance is not yet available.

**Protein and Oil**—Protein and oil values were determined using near infrared reflectance analysis. Protein and oil values are expressed on a 13 percent moisture basis. This formula converts the protein and oil value to another moisture basis:

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

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

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

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

## Recommended Publicly Developed Varieties

**Agassiz**—Northern zone. Relative maturity 0.0. Very good yield potential. Good lodging resistance. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural

Experiment Station. Released in 1992. Seed sale regulated by U.S. Plant Variety Protection Act.

**Archer**—Southern zone. Relative maturity 1.9. Yield, brown stem rot resistance and iron chlorosis resistance similar to BSR 101. *Rps1k and Rps6 genes for resistance to phytophthora*. Released 1989 by Iowa Agricultural Experiment Station. Seed Sale regulated by U.S. Plant Variety Protection Act.

**Bell**—Southern zone. Relative maturity 2.2. *Resistant to race 3 and race 14 of the Soybean Cyst Nematode*. Recommended as part of a management package for producers with a soybean cyst nematode problem. Fair yield potential. Susceptible to phytophthora. Released by Illinois Agricultural Experiment Station 1989. Seed sale regulated by U.S. Plant Variety Protection Act.

**Bert**—Southern zone. Relative maturity 1.8. High yield with taller than average plant height. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1991. Seed sale regulated by U.S. Plant Variety Protection Act.

**Council**—Northern zone. Relative maturity 0.5. High yield. *Rps1 gene for resistance to phytophthora*. Developed by North Dakota Agricultural Experiment Station. Released 1995. Seed sales regulated by U.S. Plant Variety Protection Act, PVP(94). Seed will be widely available in 1997.

**Evans**—Central zone. Relative maturity 0.6. *Rps1 gene for resistance to phytophthora*. A good variety for late season plantings in the southern zone. Developed by Minnesota Agricultural Experiment Station. Released 1974.

**Faribault**—Central and southern zones. Relative maturity 1.9. *Resistant to race 3 and moderately resistant to race 1 of soybean cyst nematode*. Different source of soybean cyst nematode resistance than Freeborn and Bell. Recommended as part of a management package for producers with a soybean cyst nematode problem. Good yield potential. Resistant to brown stem rot. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released in 1994. Seed sales regulated by U.S. Plant Variety Protection Act, PVP(94).

**Freeborn**—Central and southern zones. Relative maturity 1.6. *Resistant to race 3 of soybean cyst nematode*. Good yield potential. Resistant to brown stem rot. *Rps1 gene for resistance to phytophthora*. Recommended as part of a management package for producers with a soybean cyst nematode problem. Developed by Minnesota Agricultural Experiment Station. Released 1995. Seed sales regulated by U.S. Plant Variety Protection Act, PVP(94).

**Glacier**—Northern zone. Relative maturity 00.8. High yield. *Rps6 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1995. Seed sales regulated by U.S. Plant Variety Protection Act, PVP(94).

**Granite**—Central and southern zones. Relative maturity 1.8. High yield. Resistant to brown stem rot. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1995. Seed sales regulated by U.S. Plant Variety Protection Act, PVP(94).

**Hardin 91**—Southern zone. Relative maturity 2.0. Good yield potential. *Rps1k gene for resistance to phytophthora*. Developed by Iowa Agricultural Experiment Station. Released under royalty agreement by Iowa State University Research Foundation, 1991. License required for seed production.

**Hendricks**—Central zone. Relative maturity 0.9. High yield. Good lodging resistance. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released in 1994. Seed sales regulated by U.S. Plant Variety Protection Act.

**IA2008**—Southern zone. Relative maturity 2.2. High yield potential. *Rps1 gene for resistance to phytophthora*. Released 1991. Developed by Iowa Agricultural Experiment Station. Released under royalty agreement by Iowa State University Research Foundation, 1991. License required for seed production.

**IA2008R**—Southern zone. Relative maturity 2.2. High yield potential. Resistant to brown stem rot. Similar to IA2008 except *Rps1k gene for resistance to phytophthora*. Developed by Iowa Agricultural Experiment Station. Released under royalty agreement by Iowa State University Research Foundation, 1995. License required for seed production. Seed will be widely available in 1997.

**IA2021**—Southern zone. Relative maturity 2.1. High yield potential. *Rps1k gene for resistance to phytophthora*. Developed by Iowa Agricultural Experiment Station. Released under royalty agreement by Iowa State University Research Foundation, 1995. License required for seed production. Seed will be widely available in 1997.

**Kato**—Central and southern zones. Relative maturity 1.3. Outstanding protein level. Very good lodging resistance. Good iron chlorosis resistance. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1989. Seed sale regulated by U.S. Plant Variety Protection Act.

**Lambert**—Central zone. Relative maturity 0.8. Excellent yield potential. Good lodging resistance. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released in 1992. Seed sale regulated by U.S. Plant Variety Protection Act.

**McCall**—Northern zone. Relative maturity 0.7. High yield. Tall. Good lodging resistance in its maturity class. Susceptible to phytophthora. Developed by Minnesota Agricultural Experiment Station. Released 1978.

**Ozzie**—Northern and central zones. Relative maturity 0.3. High yield. Good lodging resistance for its maturity. *Rps1 gene for resistance to Phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1983. Seed sale regulated by U.S. Plant Variety Protection Act.

**Parker**—Southern zone. Relative maturity 1.5. Excellent yield potential. Lodging resistance similar to Corsoy 79. *Rps1 gene for phytophthora resistance*. Developed by Minnesota Agricultural Experiment Station. Released in 1992. Seed sale regulated by U.S. Plant Variety Protection Act.

**Sturdy**—Southern zone. Relative maturity 2.1. High yield potential. Good lodging resis-

tance and iron chlorosis resistance. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1989. Seed sale regulated by U.S. Plant Variety Protection Act.

## Not Adequately Tested Publicly Developed Variety

**IA1006**—Southern zone. Relative maturity 1.6. Excellent yield potential. Good lodging resistance. *Resistant to brown stem rot*. Developed by Iowa Agricultural Experiment Station. Released under royalty agreement by Iowa State University Research Foundation, 1996. License required for seed production. Seed will be widely available in 1998.

## Other Publicly Developed Varieties

**BSR 101**—Southern zone. Relative maturity 1.9. High yield potential, *resistant to brown stem rot*. Acceptable iron chlorosis score. *Rps1 gene for resistance to phytophthora*. Developed by Iowa Agricultural Experiment Station. Released 1985.

**Corsoy 79**—Southern zone. Relative maturity 2.2. Very good yield performance. *Rps1c gene for phytophthora resistance*. Poor chlorosis ratings, somewhat lodging susceptible. Developed by Illinois Agricultural Experiment Station. Released 1979.

**Dassel**—Central zone. Relative maturity 0.9. Yield similar to Evans. Good lodging resistance. *Rps6 gene for resistance to phytophthora*. Highly susceptible to the herbicide metribuzin. Developed by Minnesota Agricultural Experiment Station. Released 1986. Seed sale regulated by U.S. Plant Variety Protection Act.

**Dawson**—Central zone. Relative maturity 0.6. Very good tolerance to iron chlorosis on high lime soils. Good yield and lodging resistance. *Rps1 gene for resistance to phytophthora but quite susceptible to race 3*. Developed by Minnesota Agricultural Experiment Station. Released 1983. Seed sale regulated by U.S. Plant Variety Protection Act.

**Harden**—Southern zone. Relative maturity 1.7. Good yield performance. *Rps1 gene for resistance to phytophthora*. Developed by Iowa Agricultural Experiment Station. Released 1980. Seed sale regulated by U.S. Plant Variety Protection Act.

**Hodgson 78**—Central and southern zones. Relative maturity 1.4. Average yield. *Rps1 gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1978.

**Kasota**—Central and Southern zones. Relative maturity 1.3. Very good yield potential. High protein level. Good lodging resistance. *Rps1c gene for resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1990. Seed sale regulated by U.S. Plant Variety Protection Act.

## Special Purpose Publicly Developed Varieties

**Chico**—Small-seeded variety for specialty markets. Relative maturity 0.2. Seed weight is about 5 grams per 100 seeds less than Agassiz. Yields less than Agassiz. *Rps1 gene for*

*resistance to phytophthora*. Developed by Minnesota Agricultural Experiment Station. Released 1983.

**Danatto**—Small-seeded variety for specialty markets. Relative maturity 0.4. Seed size similar to Minnatto. Developed by North Dakota Agricultural Experiment Station. Released in 1996. Seed sales regulated by U.S. Plant Variety Protection Act PVP (94).

**Grande**—Relatively large seeded variety for specialty markets. Relative maturity 0.6. Seed weight about 6 grams per 100 seeds greater than Evans. Yields less than Evans. Developed by Minnesota Agricultural Experiment Station. Released 1976.

**Minnatto**—Small-seeded variety for specialty markets. Relative maturity 0.7. Seed weight about 4 grams per 100 seeds less than Chico. Similar in yield to Chico. *Rps1 gene for phytophthora resistance*. Developed by Minnesota Agricultural Experiment Station. Released 1989. Seed sale regulated by U.S. Plant Variety Protection Act. (Contact Sigco Sun Products, Inc., Breckenridge, MN, for information).

**Proto**—Very high protein variety for specialty markets. Relative maturity 0.6. Protein content 3 to 5 percent higher than other varieties. Yields less than Evans. Susceptible to phytophthora. Developed by Minnesota Agricultural Experiment Station. Released 1989.

**Toyopro**—Very high protein variety for specialty markets. Relative maturity 0.8. Protein content 3 percent to 5 percent higher than other varieties. Yields less than Lambert. Developed by Minnesota Agricultural Experiment Station. Released 1995. Seed sale regulated by U.S. Plant Variety Protection Act, PVP(94) (contact Northland Organic Foods, St. Paul, MN for information).

**Vinton 81**—Large-seeded, special purpose variety. Relative maturity 1.8. Seed weight 6 to 8 grams per 100 seeds greater than Hardin. *Rps1 gene for resistance to phytophthora*. Developed by Iowa Agricultural Experiment Station. Released 1981.

## Privately Developed Varieties

These private companies entered varieties in the 1996 Minnesota tests. Brand names are noted in parentheses ( ). List is sorted alphabetically by company name.

AgriPro Seeds, Inc., R.R. 2, Highway 30 East, Ames, IA 50010 (AgriPro)  
Albert Lea Seed House, P.O. Box 127, 1414 W. Main, Albert Lea, MN 56007 (Viking)  
Cenex/Land O'Lakes, 2827 8th Ave. South, Fort Dodge, IA 50501 (Cenex/LOL)  
Ciba Seeds, 211 Landmark Drive, Suite D4, Normal, IL 61761 (Ciba)  
Dahlman Seeds, 73504 200th St., Dassel, MN 55325 (Dahlman)

Dairyland Seed Co., Inc., P.O. Box 958, 3570 Highway H, West Bend, WI 53095  
(Dairyland)  
DEKALB Genetics Corp., 3100 Sycamore Rd., DeKalb, IL 60115 (DEKALB)  
Dennis Ewing Farm Seed, R.R. 2, Box 272T, Ames, IA 50010 (Yield King)  
Domestic Seed & Supply, Box 466, Madison, SD 57042 (Mustang)  
Ehrich Seed Farms, Inc., R.R. 1, Box 47, Elmore, MN 56027 (Ehrich)

Gold Country Seed, 220 W. Elm St., Norwood, MN 55368 (GCS)  
Golden Harvest Seeds, The J.C. Robinson Seed Co., 100 J.C. Robinson Blvd., P.O. Box  
A, Waterloo, NE 68069 (Golden Harvest)  
Great Lakes Hybrids, Inc., 9915 W. M-21, Ovid, MI 48866 (Gr. Lks.)  
Hy-Vigor Seeds, Inc., 4970 Redwood Ave., Paullina, IA 51046 (Hy-Vigor)  
ICI Seeds, 2369 330th St., Box 500, Slater, IA 50244 (ICI)

Interstate Payco Seed Company, Box 338, 1215 Prairie Parkway, West Fargo, ND 58078  
(Payco)  
Jacobsen Hybrid Corn Co., Inc., 129 9th St., Box 379, Lake View, IA 51450 (Jacobsen)  
Kaltenberg Seed Farms, Inc., 5506 Highway 19, P.O. Box 278, Waunakee, WI 53597  
(Kaltenberg)  
Kruger Seed Company, Highway 20 East, Dike, IA 50624 (Kruger)  
KSC/Challenger, Box A, Dike, IA 50624 (KSC/Challenger)

Latham Seed Company, 131 180th St., Alexander, IA 50420 (Latham)  
Latham Brothers Farm, 131 180th St., Alexander, IA 50420 (Latham)  
LG Seeds, 925 Dexter St., Box 216, Prescott, WI 54021 (LG Seeds)  
Midwest Seed Genetics, P.O. Box 518, Carroll, IA 51401 (MSG)  
Mycogen Seeds, P.O. Box 21428, St. Paul, MN 55121-1428 (Mycogen)

Northrup King, 7500 Olson Mem. Hy., Golden Valley, MN 55427 (NK)  
Pioneer Hi-Bred Int'l, Inc., 130 SE Willmar Ave., Willmar, MN 56201 (Pioneer)  
Prairie Brand Seed Company, 15 X Ave., Story City, IA 50248 (Prairie Brand)  
Prairie Brand Research, 15 X Ave., Story City, IA 50248 (PBR)  
Profiseed, Inc., 1691 Highway 65 North, Hampton, IA 50441 (Profiseed)

Ramy International, LTD., P.O. Box 3722, 1329 N. Riverfront Drive, Mankato, MN 56001  
(Ramy)  
Renk Seed Co., 6800 Wilburn Rd., Sun Prairie, WI 53590 (Renk)  
Sand Seed Service, Inc., 4765 Highway 143, Marcus, IA 51035 (Sands)  
Sansgaard Seed Farms, Inc., 15 X Ave., Story City, IA 50248 (Sansgaard)  
Semences Prograin, Inc., 145 Bas Riviere Nord, St.-Cesaire, Quebec, Canada J0L 1T0  
(Semences)

Star Brand Seed, 4765 Highway 143, Marcus, IA 51035 (Star)  
Stine Seed Farm, 2225 Laredo Trail, Adel, IA 50003 (Stine)  
Stine Seed Co., 2225 Laredo Trail, Adel, IA 50003 (Stine)  
Terra International, Inc., 600 4th St., P.O. Box 6000, Sioux City, IA 51102-6000 (Terra)  
Thompson Agronomics, Inc., 40321 130th Ave., Leland, IA 50453 (Thompson)

Thompson Seeds, Inc., 40321 130th Ave., Leland, IA 50453 (Thompson)  
UAP Seed Company, P.O. Box 5015, 1230 40th St. NW, Fargo, ND 58105-5015 (Dyna-  
Gro)  
UAP Seeds/Dyna-Gro, P.O. Box 55, Kasota, MN 56050 (Dyna-Gro)  
Ziller Seed Co., Inc., Rte 1, Box 122, Bird Island, MN 55310 (Ziller)

Table 2. Yields in bushels per acre of publicly developed soybean varieties in northern zone (1992-96). Sorted by growing zone maturity date, earliest to latest.

Note Key:

[1] 1994-96 data adjusted to 5 year average.

[2] 1993-96 data adjusted for 5 year average.

[3] 1992-94, 1996 data.

[4] 1994, 1996 data adjusted for 4 year average.

[5] 1993, 1994, 1996 data adjusted to 4 year average.

Locations: Cr=Crookston; GRap=Grand Rapids; Mor=Moorhead; Rou=Roseau; Sh=Shelly.

Variety	Cr	GRap	Mor	Rou	Sh [3]
McCall	36	19	28	25	39
Glacier	38 [1]	22	38 [1]	28	35 [4]
Agassiz	41	23	27	25	40
Ozzie	35	—	33	—	36
Council	—	—	39 [2]	—	42 [5]
Dawson	44	—	33	—	40
Evans	44	—	36	—	34
Lambert	47	—	35	—	44
Hendricks	42 [1]	—	40 [1]	—	40 [4]
Toyopro	42 [1]	—	32 [1]	—	37 [5]
LSD 0.20	2	1	2	1	1

Table 3. Yields in bushels per acre of publicly developed soybean varieties in central zone (1992-96). Sorted by growing zone maturity date, earliest to latest.

Note Key:

[1] Grown in 10-inch rows.

[2] Grown in 30-inch rows.

Locations: Ros=Rosemount; Mor=Morris; Be=Becker; AVG=average for all three sites.

Variety	Ros [1]	Mor [1]	Be [2]	AVG
Ozzie	39	43	44	42
Evans	40	46	42	43
Dawson	42	46	41	43
Lambert	45	49	51	49
Hendricks	44	47	48	46
Kato	41	46	43	44
Parker	45	52	48	48
Bert	46	50	46	47
LSD 0.20	2	2	2	1

Table 4. Yields in bushels per acre of publicly developed soybean varieties in southern zone (1992-96). Sorted by growing zone maturity date, earliest to latest.

Note Key:

[1] 1993-96 data, adjusted to 5-year average.

[2] 1994-96 data, adjusted to 5-year average.

[3] 1995-96 data, adjusted to 5-year average.

[4] 1993-96 data.

[5] 1995-96 data, adjusted to 4-year average.

[6] Mid-May planting.

[7] Mid-June planting.

[8] Grown in 10-inch rows.

[9] Grown in 30-inch rows.

Locations: Was=Waseca, Lam=Lamberton, Fai=Fairmont, Lew=Lewiston, AVG=average for all sites.

Variety	Was and Lam [6]	Lam [7]	Fai [6,9]	Was [6,8]	Lam [6,8]	Lew [4,6,9]	AVG
McCall	—	28	—	—	—	—	—
Agassiz	—	33	—	—	—	—	—
Ozzie	43	30	29	43	43	—	38
Dawson	49	33	31	48	50	46	44
Council	50 [3]	—	33 [3]	50 [3]	50 [3]	—	44 [3]
Evans	47	34	30	47	47	47	43
Lambert	52	39	34	49	55	51	47
Hendricks	52 [1]	38 [2]	36 [1]	49 [1]	54 [1]	52 [2]	48 [1]
Kato	—	39	42	52	55	52	50
Parker	61	44	42	59	63	53	54
Freeborn	50	—	42	50	51	54 [2]	49
Hardin 91	59	39	39	58	59	58	53
Bert	55	41	39	53	57	58	54
Granite	59	37 [2]	39	58	60	55	53
Faribault	52	33 [2]	40	48	55	53 [2]	49
Sturdy	58	35	42	55	60	58	54
Archer	56	36	38	54	58	50	50
IA2021	63 [3]	—	45 [3]	58 [3]	68 [3]	59 [5]	57 [3]
IA2008	62	38	42	60	64	59	56
IA2008R	62 [3]	—	43 [3]	57 [3]	66 [3]	—	55 [3]
LSD 0.20	1	1	1	2	2	2	1

Table 5. Characteristics of publicly developed soybean varieties (1996) for northern zone. Sorted by maturity date for mid-May planting.

Note Key:

[1] Maturity date, from mid-May planting date.

[2] Maturity date, from mid-June planting date.

[3] Lodging score: 1=excellent, 5=very poor.

[4] Height expressed in inches.

[5] PR=Phytophthora resistance: Rps#=gene present, S=susceptible,

[6] Protein and oil percentages, based on 13% moisture.

[7] CR=Chlorosis rating: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible.

Variety	Maturity Date		Lodging [3]	Height [4]	PR [5]	Protein [6]	Oil [6]	CR [7]
	[1]	[2]						
McCall	9-12	—	1.2	31	S	34.5	17.6	MR
Glacier	9-18	—	1.7	35	Rps6	35.9	17.3	MS
Chico	9-19	—	1.5	33	Rps1	36.4	18.7	MS
Agassiz	9-23	—	1.2	33	Rps1	34.7	17.4	MR
Danatto	9-27	—	2.7	34	S	35.1	16.8	MR
Ozzie	9-28	—	1.2	35	Rps1	37.5	16.6	MR
Council	9-29	—	1.2	38	Rps1	34.4	17.6	MR
Dawson	9-29	—	1.8	39	Rps1	33.9	18.0	MR
Proto	9-29	—	2.2	34	S	37.5	16.7	S
Evans	10-1	—	2.2	41	Rps1	34.5	18.2	MS
Lambert	10-2	—	1.7	38	Rps1	35.1	18.0	MR
Hendricks	10-3	—	1.0	39	Rps1	35.8	17.5	MS
Toyopro	10-3	—	1.2	36	S	38.0	16.1	S
Minnatto	10-4	—	1.0	35	Rps1	35.3	17.4	MR

Table 6. Characteristics of publicly developed soybean varieties (1996) for central zone. Sorted by maturity date for mid-May planting.

Note Key:

[1] Maturity date, from mid-May planting date.

[2] Maturity date, from mid-June planting date.

[3] Lodging score: 1=excellent, 5=very poor.

[4] Height expressed in inches.

[5] PR=Phytophthora resistance: Rps#=gene present, S=susceptible,

[6] Protein and oil percentages, based on 13% moisture.

[7] CR=Chlorosis rating: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible.

Variety	Maturity Date		Lodging [3]	Height [4]	PR [5]	Protein [6]	Oil [6]	CR [7]
	[1]	[2]						
McCall	9-4	—	1.3	30	S	34.7	18.2	MR
Glacier	9-7	—	1.7	30	Rps6	35.9	17.7	MS
Chico	9-9	—	2.0	34	Rps1	35.3	17.6	MS
Agassiz	9-10	—	1.3	33	Rps1	35.1	18.0	MR
Danatto	9-11	—	3.0	33	S	34.5	17.4	MR
Ozzie	9-12	—	1.3	33	Rps1	36.2	17.0	MR
Proto	9-13	—	1.5	27	S	38.7	16.6	S
Council	9-13	—	1.3	32	Rps1	34.7	18.1	MR
Evans	9-14	—	2.0	37	Rps1	35.0	18.2	MS
Dawson	9-14	—	1.8	34	Rps1	34.6	18.4	MR
Lambert	9-15	—	1.5	34	Rps1	34.6	18.5	MR
Toyopro	9-16	—	1.3	32	S	39.0	16.4	S
Hendricks	9-17	—	1.5	32	Rps1	35.8	17.7	MS
Minnatto	9-18	—	2.0	31	Rps1	36.7	16.9	MR
Kato	9-19	—	1.7	37	Rps1	38.9	16.5	MS
Parker	9-21	—	2.2	41	Rps1	35.1	17.9	S
Bert	9-24	—	2.2	42	Rps1	34.4	18.0	MS
IA2021	9-25	—	1.7	34	S	35.9	18.1	S
Faribault	9-26	—	2.0	36	Rps1	34.3	18.1	MS
Marcus 95	9-26	—	2.0	35	Rps1k	36.0	17.8	S
Freeborn	9-26	—	2.2	36	Rps1	36.7	17.0	MR
Hardin 91	9-27	—	2.0	41	Rps1k	35.4	18.1	MS
Granite	9-28	—	2.3	38	Rps1	36.2	17.4	MS
Sturdy	9-29	—	1.8	37	Rps1	36.2	17.2	MS

Table 7. Characteristics of publicly developed soybean varieties (1996) for southern zone. Sorted by maturity date for mid-May planting.

Note Key:

[1] Maturity date, from mid-May planting date.

[2] Maturity date, from mid-June planting date.

[3] Lodging score: 1=excellent, 5=very poor.

[4] Height expressed in inches.

[5] PR=Phytophthora resistance: Rps#=gene present, S=susceptible,

[6] Protein and oil percentages, based on 13% moisture.

[7] CR=Chlorosis rating: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible.

Variety	Maturity Date		Lodging [3]	Height [4]	PR [5]	Protein [6]	Oil [6]	CR [7]
	[1]	[2]						
McCall	9-5	9-15	2.2	26	S	35.2	17.5	MR
Glacier	9-10	9-18	2.3	26	Rps6	35.6	17.8	MS
Agassiz	9-10	9-20	1.7	26	Rps1	35.7	18.1	MR
Ozzie	9-13	9-24	1.7	27	Rps1	36.2	17.2	MR
Proto	9-14	—	2.7	25	S	38.4	15.9	S
Council	9-16	—	1.8	29	Rps1	35.6	17.6	MR
Dawson	9-16	9-25	2.7	28	Rps1	35.6	17.5	MR
Evans	9-17	9-29	2.3	29	Rps1	35.4	17.9	MS
Toyopro	9-18	—	1.7	29	S	39.4	15.5	S
Lambert	9-20	9-30	2.0	29	Rps1	35.4	18.0	MR
Minnatto	9-21	—	2.0	28	Rps1	37.7	16.0	MR
Hendricks	9-22	10-1	2.5	31	Rps1	36.1	17.8	MS
Kato	9-24	10-3	2.2	32	Rps1	38.6	16.1	MS
Parker	9-26	10-3	3.0	35	Rps1	34.8	17.9	S
Faribault	9-28	10-9	2.3	33	Rps1	33.9	18.0	MS
Freeborn	9-28	—	2.5	34	Rps1	37.0	16.6	MR
Bert	9-28	10-5	3.2	35	Rps1	34.7	17.5	MS
Granite	9-29	10-10	2.3	35	Rps1	36.3	17.5	MS
IA2021	9-30	10-8	2.0	32	Rps1k	34.1	18.4	S
Hardin 91	9-30	10-9	3.0	33	Rps1	34.9	17.6	S
Sturdy	10-1	10-10	2.7	32	Rps1	35.4	17.6	MS
Archer	10-1	10-10	2.8	35	Rps1k+6	35.5	17.1	MS
Marcus 95	10-2	—	2.2	34	Rps1k	35.5	17.6	MS
IA2008	10-3	10-11	3.0	38	Rps1	34.8	16.7	MS
IA2008R	10-4	10-12	2.7	38	Rps1k	34.3	16.9	MS

Table 8A. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the northern zone (1994-96; Crookston, Moorhead, Shelly).

Note Key:

[1] Relative maturity rating provided by originator. Number before decimal represents maturity group. Number after decimal represents ranking within maturity group.

[2] Date represents the number of days after August 31 that variety reaches maturity.

[3] Blend; information furnished by originator.

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
9004	PIONEER	00.4	14	—	40	42
MCCALL	MINN. A.E.S.	00.7	16	36	38	41
GLACIER	MINN. A.E.S.	00.8	20	39	38	40
9007	PIONEER	00.7	20	37	38	38
AGASSIZ	MINN. A.E.S.	0.0	23	42	44	45
SOO-66	NK	00.6	23	—	42	43
CX025	DEKALB	0.2	25	—	—	46
013	MYCOGEN	0.1	26	—	45	45
X6503	GCS	0.3	27	—	—	47
OZZIE	MINN. A.E.S.	0.3	27	42	42	41
KORADA	SEMENCES	0.0	28	—	46	45
3044	DYNA-GRO	0.5	28	—	41	43
X 039	GOLDEN HARVEST	0.3	28	—	—	38
TRACKER	GCS	0.5	29	45	46	45
9042	PIONEER	0.4	29	43	41	44
DSR-035	DAIRYLAND	0.3	29	42	42	43
CX046	DEKALB	0.4	29	—	42	43
UAPX206	DYNA-GRO	00.3	30	—	—	47
COUNCIL	ND A.E.S.	0.5	30	—	44	45
DAWSON	MINN. A.E.S.	0.6	30	44	44	44
3056	CIBA	0.5	30	—	41	39
9071	PIONEER	0.7	31	47	49	48
040	MYCOGEN	0.4	31	46	46	44
3036	CIBA	0.3	32	—	—	46
LAMBERT	MINN. A.E.S.	0.8	32	45	45	46
GL0735	GRT. LKS.	0.7	32	48	45	45
9606	PAYCO	0.6	32	—	—	43
DSR-068 [3]	DAIRYLAND	0.3	32	44	44	42
0653	STINE	0.3	33	50	49	48
0670	STINE	0.3	33	49	47	47
3075	CIBA	0.7	33	—	46	45
0586	STINE	0.3	33	—	—	44
EVANS	MINN. A.E.S.	0.6	33	44	44	42
PB-094	PRAIRIE BRAND	0.9	34	—	47	45
0470	STINE	0.3	34	—	—	45
700	RAMY	0.3	34	—	—	43
CX076	DEKALB	0.7	34	44	42	42
CX096	DEKALB	0.9	34	42	43	41
9508	PAYCO	0.6	35	—	—	47
PB-097	PRAIRIE BRAND	0.9	35	—	—	46

Table 8A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the northern zone (1994-96; Crookston, Moorhead, Shelly).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
690	RAMY	0.3	35	—	—	44
DST0805	DAIRYLAND	0.3	35	—	—	43
9609	PAYCO	0.8	35	—	—	43
L0727	CENEX/LOL	0.7	35	—	—	41
LSD 0.20			112			

Table 8B. Disease resistance, protein and oil characteristics of public and private soybean varieties for the northern zone (1994-96; Crookston, Moorhead, Shelly).

Note Key:

[1] PR=Phytophthora resistance: Rps#=gene present, S=susceptible, M=mixture of resistant and susceptible.

[2] C=Chlorosis rating: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible.

[3] Protein and oil percentages, based on 13% moisture.

[4] 2-year average.

[5] 1-year data.

[6] Blend; information furnished by originator.

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
9004	S	MR [4]	—	36.0	36.7	—	17.1	17.3
MCCALL	S	MR	33.5	35.6	34.8	18.2	16.7	17.3
GLACIER	Rps6	MS	33.8	35.9	35.3	18.2	16.7	17.3
9007	Rps1	MS	33.0	34.7	34.4	18.7	17.5	18.1
AGASSIZ	Rps1	MR	34.4	35.8	35.0	17.9	17.0	17.4
SOO-66	Rps1	MR [4]	—	35.1	34.2	—	17.2	18.1
CX025	Rps1	S [5]	—	—	34.1	—	—	18.0
013	Rps1	S [4]	—	35.9	34.9	—	16.9	17.6
X6503	Rps1	MS [5]	—	—	35.3	—	—	17.5
OZZIE	Rps1	MS	35.1	36.6	35.9	17.5	16.5	17.3
KORADA	S	MS [4]	—	35.9	35.2	—	17.1	17.5
3044	Rps1	MS [4]	—	35.5	35.2	—	17.3	17.8
X 039	S	S [5]	—	—	36.2	—	—	17.8
TRACKER	S	MS	34.2	34.8	34.5	17.6	17.0	17.5
9042	Rps1	MS	34.2	34.8	34.7	18.0	17.5	18.0
DSR-035	S	MS	34.8	36.7	36.2	17.8	16.5	16.8
CX046	S	MR [4]	—	36.6	35.8	—	16.0	16.8
UAPX206	M	MS [5]	—	—	33.3	—	—	18.1
COUNCIL	Rps1	MR [4]	—	34.7	34.3	—	17.3	17.8
DAWSON	Rps1	MR	32.4	34.1	33.6	18.8	17.3	17.9

Table 8B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the northern zone (1994-96; Crookston, Moorhead, Shelly).

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
3056	Rps1c	MS [4]	—	36.6	35.5	—	16.1	16.4
9071	Rps1c	MS	31.6	33.3	33.1	19.3	18.1	18.6
040	Rps1c	S	32.4	33.9	33.5	18.8	17.6	18.0
3036	S	S [5]	—	—	33.8	—	—	17.8
LAMBERT	Rps1	MR	34.1	34.6	34.6	18.1	17.8	18.3
GL0735	Rps1c	MS	33.5	34.2	33.3	18.1	17.3	17.9
9606	S	S [5]	—	—	35.2	—	—	17.0
DSR-068 [6]	S	MS	34.6	36.0	35.4	17.6	16.6	17.0
0653	Rps1c	MS	34.5	34.8	33.9	17.6	17.3	17.7
0670	S	MS	33.0	34.2	34.2	18.6	17.8	18.2
3075	Rps1c	MS [4]	—	35.1	34.1	—	17.2	17.7
0586	S	MS [5]	—	—	36.4	—	—	16.6
EVANS	Rps1	MS	33.2	34.6	34.2	18.5	17.4	18.0
PB-094	M	MS [4]	—	35.1	34.4	—	17.1	17.4
0470	S	S [5]	—	—	34.3	—	—	18.0
700	Rps1c	MS [5]	—	—	33.9	—	—	17.8
CX076	S	MS	34.6	35.6	34.9	17.8	17.2	17.8
CX096	Rps1	MS	34.2	35.3	35.0	17.9	17.0	17.6
9508	M	MS [5]	—	—	33.9	—	—	17.5
PB-097	S	S [5]	—	—	34.0	—	—	17.9
690	Rps1	S [5]	—	—	33.9	—	—	17.8
DST0805	Rps1c	MS [5]	—	—	32.7	—	—	18.4
9609	S	MS [5]	—	—	33.9	—	—	18.6
L0727	Rps1k	MS [5]	—	—	35.5	—	—	17.1

Table 9A. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the central zone (1994-96; Becker, Morris, Rosemount).

Note Key:

[1] Relative maturity rating provided by originator. Number before decimal represents maturity group. Number after decimal represents ranking within maturity group.

[2] Date represents the number of days after August 31 that variety reaches maturity.

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
OZZIE	MINN. A.E.S.	0.3	16	44	44	44
DAWSON	MINN. A.E.S.	0.6	17	45	45	40
COUNCIL	ND A.E.S.	0.5	18	—	47	44
EVANS	MINN. A.E.S.	0.6	18	45	44	38
LAMBERT	MINN. A.E.S.	0.8	19	52	51	47

Table 9A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the central zone (1994-96; Becker, Morris, Rosemount).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
9071	PIONEER	0.7	19	—	52	47
0010	PAYCO	1.0	19	47	47	43
M-0995	MUSTANG	0.9	20	—	50	47
1073	STINE	1.0	20	—	—	47
EX-150	LATHAM	1.3	20	—	—	46
PB-104	PBR	1.0	20	—	50	46
3106	CIBA	1.0	20	—	—	46
84	PROFISEED	1.0	20	—	—	45
9610	PAYCO	1.0	20	—	51	45
UAPX194	DYNA-GRO	1.0	20	—	—	44
H-1082	GOLDEN HARVEST	0.8	20	—	48	43
H-1078	GOLDEN HARVEST	0.8	20	49	47	43
HENDRICKS	MINN. A.E.S.	0.9	20	48	47	42
D138	ICI	1.3	21	54	52	48
3103	CIBA	1.0	21	53	51	48
GOODWIN	GCS	1.2	21	51	50	48
3096	CIBA	0.9	21	—	51	47
111	MYCOGEN	1.1	21	—	50	47
E084	TERRA	0.8	21	—	49	47
EXP 14831	ZILLER	1.0	21	—	—	46
RS0995	RENK	0.9	21	—	—	46
9091	PIONEER	0.9	21	49	48	46
990	RAMY	0.9	21	—	—	45
CX145	DEKALB	1.4	21	—	51	45
5100	MYCOGEN	1.0	21	—	—	44
9132	PIONEER	1.3	21	—	48	43
CX096	DEKALB	0.9	21	48	46	42
5091	MYCOGEN	0.9	21	—	—	41
K-0909+	KRUGER	0.7	22	—	—	48
UAPX195	DYNA-GRO	1.0	22	—	—	48
PB-097	PBR	0.9	22	—	—	47
JULIUS	DAHLMAN	0.9	22	—	—	47
D111	ICI	1.1	22	52	52	46
S08-80	NK	0.8	22	—	—	46
AP 1394	AGRIPRO	1.3	22	—	51	45
DSR-133	DAIRYLAND	1.3	22	51	51	45
EXP1305	DAHLMAN	1.3	22	—	—	44
M-0998	MUSTANG	0.9	22	—	—	44
TS093	TERRA	0.9	22	—	47	41
9151	PIONEER	1.5	23	—	52	47
G1400	MSG	1.4	23	—	53	47
3120	DYNA-GRO	1.2	23	—	—	47
S12-49	NK	1.3	23	—	51	47
CX121	DEKALB	1.2	23	52	50	45
RAYDOR	GCS	1.0	23	—	—	41

Table 9A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the central zone (1994-96; Becker, Morris, Rosemount).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
KATO	MINN. A.E.S.	1.3	23	46	45	41
9514	PAYCO	1.4	24	—	—	49
EXP 165	SANDS	1.5	24	—	52	46
K-0999	KRUGER	0.7	24	54	51	44
3144	CIBA	1.4	24	49	47	44
L1499	CENEX/LOL	1.4	25	—	—	51
M-1133	MUSTANG	1.3	25	—	53	49
5143	MYCOGEN	1.4	25	—	—	47
RS1493	RENK	1.4	25	—	—	46
EXP 15134	ZILLER	1.4	25	—	—	46
T-3162	THOMPSON	1.4	25	—	—	43
170 BRAND	LATHAM	1.3	25	48	46	43
DSR-173	DAIRYLAND	1.5	26	51	51	46
PARKER	MINN. A.E.S.	1.5	26	50	50	46
KANDI	GCS	1.4	26	—	—	45
H-1140	GOLDEN HARVEST	1.4	26	52	48	43
PBR-127	PBR	1.2	27	—	53	49
KB145	KALTENBERG	1.4	27	—	53	46
K-1313+	YIELD KING	1.1	28	—	—	50
M-1144	MUSTANG	1.4	28	—	—	48
G-1610	MSG	1.6	28	—	—	47
K-1414+	YIELD KING	1.2	28	—	—	47
EXP 9614	SANDS	1.4	28	—	—	47
EXP1529	DAHLMAN	1.5	28	—	—	44
BERT	MINN. A.E.S.	1.8	28	49	49	44
DST1221	DAIRYLAND	1.5	28	—	—	43
PB-166	PBR	1.5	28	—	—	42
SOI 177	SANDS	1.4	29	—	—	51
PBR-143X	PBR	1.4	29	—	—	48
1470	STINE	1.4	29	54	51	47
LG6145	LG SEEDS	1.4	29	—	—	46
DST1220	DAIRYLAND	1.5	29	—	—	46
T-3172	THOMPSON	1.5	29	—	52	46
HIGHLAND	GCS	1.7	29	—	49	43
1134	HY-VIGOR	1.0	29	—	—	43
T-3184	THOMPSON	1.5	29	—	—	43
SOI 260	SANDS	1.5	30	58	56	52
IA1006	IOWA A.E.S.	1.6	30	—	—	49
K-1777	KSC/CHALLENGER	1.4	30	—	—	48
3152	DYNA-GRO	1.6	30	—	—	47
K-1929	KSC/CHALLENGER	1.5	30	—	—	47
GL1559	GRT. LKS.	1.5	30	—	—	43
K-1819	YIELD KING	1.5	31	58	56	50
K-1990	KRUGER	1.5	31	—	55	50
K-1909	KRUGER	1.5	31	55	53	49

Table 9A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the central zone (1994-96; Becker, Morris, Rosemount).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
1800	RAMY	1.5	31	—	—	47
PBR-154X	PBR	1.5	31	—	52	47
EX-220	LATHAM	1.6	31	—	—	46
K-2025	YIELD KING	1.5	31	54	53	46
PB-167	PBR	1.5	31	—	—	45
FREEBORN	MINN. A.E.S.	1.6	31	—	46	42
2002	HY-VIGOR	1.5	31	—	46	39
1980	STINE	1.5	32	—	—	49
1570	STINE	1.5	32	—	—	49
K-2022	KSC/CHALLENGER	1.5	32	—	—	46
1990	RAMY	1.5	32	—	—	45
EX2034	THOMPSON	1.5	32	—	—	44
PBR-169X	PBR	1.5	33	—	—	50
1580	STINE	1.5	33	—	52	47
2000	RAMY	1.5	33	—	—	45
K-1777+	KSC/CHALLENGER	1.4	33	—	—	43
GRANITE	MINN. A.E.S.	1.8	33	—	47	43
2002	RAMY	1.5	33	—	—	45
LSD 0.20				1	1	2

Table 9B. Disease resistance, protein and oil characteristics of public and private soybean varieties for the central zone (1994-96; Becker, Morris, Rosemount).

Note Key:

[1] PR=Phytophthora resistance: Rps#=gene present, S=susceptible, M=mixture of resistant and susceptible.

[2] CR=Chlorosis rating: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible.

[3] Protein and oil percentages, based on 13% moisture.

[4] 2-year average.

[5] 1-year data.

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
OZZIE	Rps1	MS	37.1	37.6	36.4	16.5	16.0	17.2
DAWSON	Rps1	MR	35.2	35.6	34.4	17.6	17.2	18.1
COUNCIL	Rps1	MR	—	35.4	34.5	—	17.2	18.1
EVANS	Rps1	MS	35.6	35.9	35.0	17.5	17.2	18.2
LAMBERT	Rps1	MR	36.0	36.3	35.6	17.4	17.3	18.6
9071	Rps1c	MS [4]	—	34.8	33.8	—	17.7	18.4
0010	Rps1	MR	36.5	36.9	35.5	16.7	16.4	17.5
M-0995	S	MS [4]	—	35.5	34.3	—	17.6	18.5
1073	S	S [5]	—	—	34.4	—	—	18.4
EX-150	S	S [5]	—	—	34.4	—	—	18.3

Table 9B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the central zone (1994-96; Becker, Morris, Rosemount).

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
PB-104	S	MS [4]	—	35.5	34.5	—	17.6	18.5
3106	S	S [5]	—	—	34.2	—	—	18.4
84	S	S [5]	—	—	33.8	—	—	18.5
9610	S	MS [4]	—	35.9	34.7	—	17.3	18.0
UAPX194	S	S [5]	—	—	33.5	—	—	18.4
H-1082	M	MS [4]	—	36.0	34.8	—	17.4	18.3
H-1078	Rps1	MR	34.9	35.3	34.5	17.7	17.2	17.9
HENDRICKS	Rps1	MS	35.7	36.2	35.9	17.6	17.2	17.9
D138	S	MS	36.9	37.2	36.3	16.9	16.8	17.9
3103	S	MS	36.7	37.2	35.5	16.8	16.5	17.6
GOODWIN	Rps1k	S	34.4	34.7	34.1	18.0	17.5	18.3
3096	S	MS [4]	—	35.2	34.3	—	17.7	18.4
111	Rps1	MS [4]	—	34.6	33.5	—	17.4	18.4
E084	Rps1c	MS [4]	—	35.8	34.5	—	17.2	18.1
EXP 14831	S	MS [5]	—	—	34.2	—	—	18.2
RS0995	S	MS [5]	—	—	34.5	—	—	18.6
9091	S	MS	35.9	36.4	35.9	17.2	16.8	17.3
990	S	MR [5]	—	—	34.7	—	—	18.1
CX145	S	S [4]	—	37.0	35.7	—	17.0	17.9
5100	S	MS [5]	—	—	35.4	—	—	18.3
9132	Rps1c	MS [4]	—	35.4	34.7	—	17.5	18.3
CX096	Rps1	MS	36.4	36.8	35.3	16.8	16.4	17.5
5091	S	MS [5]	—	—	34.8	—	—	18
K-0909+	S	S [5]	—	—	34.6	—	—	17.7
UAPX195	S	S [5]	—	—	35.6	—	—	17.8
PB-097	S	S [5]	—	—	34.7	—	—	18.4
JULIUS	S	S [5]	—	—	34.6	—	—	18.0
D111	Rps1	MS	35.0	35.6	34.7	18.0	17.5	18.7
S08-80	Rps1c	S [5]	—	—	35.1	—	—	18.0
AP 1394	Rps1c	MS [4]	—	36.3	35.6	—	17.1	17.6
DSR-133	Rps1	MS	34.9	35.1	33.8	17.5	17.1	18.0
EXP1305	Rps1c	MR [5]	—	—	35.3	—	—	18
M-0998	S	MS [5]	—	—	35.1	—	—	18.4
TS093	Rps1	MS [4]	—	35.7	35.3	—	17.3	18.0
9151	Rps1k	MS [4]	—	36.3	35.4	—	17.0	18.0
G1400	S	MS [4]	—	37.3	35.6	—	16.2	17.2
3120	S	S [5]	—	—	35.6	—	—	18.0
S12-49	Rps1c	S [4]	—	36.2	35.3	—	16.9	17.8
CX121	Rps1	MS	35.1	35.8	35.9	17.7	17.1	17.7
RAYDOR	Rps6	MR [5]	—	—	34.7	—	—	17.9
KATO	Rps1	MS	38.9	39.0	39.1	15.9	16.2	16.4
9514	S	MS [5]	—	—	36.1	—	—	17.2
EXP 165	Rps1k	MS [4]	—	36.5	35.3	—	17.1	18.2
K-0999	S	S	34.6	35.2	34.3	18.0	17.4	18.1
3144	S	MR	35.8	35.9	34.5	17.3	17.1	18.1

Table 9B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the central zone (1994-96; Becker, Morris, Rosemount).

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
L1499	Rps1k	S [5]	—	—	36.3	—	—	18.2
M-1133	Rps1	S [4]	—	37.0	36.0	—	16.9	18.3
5143	S	S [5]	—	—	34.4	—	—	19.0
RS1493	Rps1k	MS [5]	—	—	36.9	—	—	17.5
EXP 15134	S	MS [5]	—	—	36.6	—	—	17.2
T-3162	S	MS [5]	—	—	34.9	—	—	17.5
170 BRAND	S	MR	35.6	36.1	34.8	17.4	17.1	17.8
DSR-173	Rps1	S	36.6	36.9	36.1	17.1	16.9	17.6
PARKER	Rps1	S	34.8	35.1	33.8	17.9	17.6	18.6
KANDI	Rps1k	S [5]	—	—	37.1	—	—	17.6
H-1140	Rps1k	S	37.8	37.9	37.4	16.6	16.6	17.4
PBR-127	S	MS [4]	—	36.2	35.4	—	17.2	18.2
KB145	Rps1	MS [4]	—	36.4	35.1	—	17.0	18.3
K-1313+	Rps1	S [5]	—	—	35.1	—	—	17.9
M-1144	S	MS [5]	—	—	34.8	—	—	18.4
G-1610	S	MS [5]	—	—	35.1	—	—	17.5
K-1414+	S	MS [5]	—	—	35.6	—	—	17.3
EXP 9614	Rps1	MS [5]	—	—	35.4	—	—	18.0
EXP1529	S	MS [5]	—	—	35.3	—	—	17.2
BERT	Rps1	MS	33.8	34.5	34.1	18.0	17.3	18.2
DST1221	Rps1c	S [5]	—	—	36.0	—	—	17.8
PB-166	S	S [5]	—	—	36.0	—	—	17.6
SOI 177	S	MS [5]	—	—	35.9	—	—	17.3
PBR-143X	S	S [5]	—	—	36.2	—	—	16.9
1470	S	MS	36.7	37.1	36.3	16.9	16.6	17.6
LG6145	Rps1	MS [5]	—	—	35.1	—	—	18.3
DST1220	S	S [5]	—	—	35.8	—	—	17.5
T-3172	S	MS [4]	—	35.3	33.5	—	17.4	18.7
HIGHLAND	S	S [4]	—	37.1	37.0	—	16.1	16.2
1134	S	MS [5]	—	—	34.0	—	—	18.2
T-3184	Rps1	S [5]	—	—	34.8	—	—	17.3
SOI 260	S	S	35.6	35.8	35.4	17.4	17.1	18.0
IA1006	S	S [5]	—	—	34.3	—	—	18.4
K-1777	S	S [5]	—	—	36.8	—	—	16.9
3152	S	MS [5]	—	—	35.3	—	—	17.7
K-1929	S	MS [5]	—	—	34.2	—	—	18.8
GL1559	Rps1	S [5]	—	—	38.9	—	—	16.6
K-1819	S	MS	36.1	36.0	35.3	17.1	17.2	17.9
K-1990	S	S [4]	—	36.5	36.1	—	16.6	17.6
K-1909	Rps1k	MS	36.3	36.6	35.7	16.9	16.6	17.6
1800	S	S [5]	—	—	34.7	—	—	18.9
PBR-154X	S	MS [4]	—	35.9	35.5	—	17.2	17.8
EX-220	S	S [5]	—	—	35.8	—	—	17.4
K-2025	S	S	35.8	35.8	35.7	17.2	17.1	17.8
PB-167	S	S [5]	—	—	36.6	—	—	16.9

Table 9B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the central zone (1994-96; Becker, Morris, Rosemount).

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
FREEBORN	Rps1	MR [4]	—	37.5	37.1	—	16.4	17.3
2002	Rps1	MR [4]	—	35.6	34.6	—	16.7	17.8
1980	S	MS [5]	—	—	35.9	—	—	17.9
1570	S	S [5]	—	—	35.6	—	—	17.8
K-2022	S	MS [5]	—	—	36.7	—	—	17.5
1990	S	S [5]	—	—	36.5	—	—	17.6
EX2034	S	S [5]	—	—	36.2	—	—	17.6
PBR-169X	S	MS [5]	—	—	35.4	—	—	18.0
1580	S	S [4]	—	35.4	35.1	—	17.8	18.5
2000	S	MS [5]	—	—	35.5	—	—	18.1
K-1777+	S	MS [5]	—	—	35.1	—	—	18.3
GRANITE	Rps1	MS [4]	—	36.3	35.5	—	16.7	17.9
2002	Rps1	MR [4]	—	—	35.6	—	16.7	17.8

Table 10A. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the southern zone (1994-96; Fairmont, Lamberton, Waseca).

Note Key:

[1] Relative maturity rating provided by originator. Number before decimal represents maturity group. Number after decimal represents ranking within maturity group.

[2] Date represents the number of days after August 31 that variety reaches maturity.

[3] Blend; information furnished by originator.

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
KATO	MINN. A.E.S.	1.3	24	49	49	46
PARKER	MINN. A.E.S.	1.5	25	54	52	49
5181	MYCOGEN	1.8	27	—	—	51
1470	STINE	1.4	27	—	55	51
9163	PIONEER	1.6	27	—	54	49
9172	PIONEER	1.7	27	—	55	49
CX173	DEKALB	1.7	27	—	53	48
AP1953	AGRIPRO	1.9	28	—	—	55
WILTON	DAHLMAN	1.7	28	—	—	53
1796	VIKING	1.7	28	—	—	51
RS1795	RENK	1.7	28	—	—	50
MCLEOD	GCS	1.8	28	—	—	48
BERT	MINN. A.E.S.	1.8	28	50	48	42
FREEBORN	MINN. A.E.S.	1.6	28	—	46	41
D180	ICI	1.8	29	—	—	54

Table 10A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the southern zone (1994-96; Fairmont, Lamberton, Waseca).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
EXP 9618	STAR	1.8	29	—	—	53
M-1160	MUSTANG	1.6	29	—	—	52
TS174	TERRA	1.7	29	—	58	52
K-2029	YIELD KING	1.8	29	—	—	51
D190	ICI	1.9	29	54	54	51
M-1175	MUSTANG	1.7	29	—	56	50
HARDIN 91	IOWA A.E.S.	2.0	29	52	51	47
FARIBAULT	MINN. A.E.S.	1.9	29	49	46	43
SOI 260	SANDS	1.9	30	—	61	57
250 BRAND	LATHAM	1.9	30	—	—	57
TS194	TERRA	1.9	30	60	59	56
G-1885	MSG	1.8	30	—	—	55
EX-560	LATHAM	2.2	30	—	—	54
200	MYCOGEN	2.1	30	—	58	54
9419	PAYCO	1.9	30	60	59	53
RS1994	RENK	1.9	30	—	—	53
EX1981	THOMPSON	1.9	30	—	—	53
CX197	DEKALB	1.9	30	—	—	52
ODIN	GCS	1.9	30	—	57	52
1690	STINE	1.9	30	—	55	51
D213	ICI	2.1	30	56	55	50
IA2021	IOWA A.E.S.	2.1	30	—	56	50
OLAF	DAHLMAN	2.1	30	—	—	50
T-3188 [3]	THOMPSON	1.8	30	—	—	50
3196	CIBA	1.9	30	—	—	49
GRANITE	MINN. A.E.S.	1.8	30	—	52	49
DSR-178	DAIRYLAND	1.7	30	—	—	49
410 BRAND	LATHAM	1.9	31	—	60	55
PB-212E	PRAIRIE BRAND	2.0	31	60	58	54
1980	STINE	1.5	31	—	—	54
9620	PAYCO	2.0	31	—	—	54
GL 1872	GRT. LKS.	1.8	31	—	—	54
EXP 16528	ZILLER	1.8	31	—	—	54
EXP 9619	STAR	1.9	31	—	—	54
J669	JACOBSEN	1.9	31	—	—	54
K-2022	YIELD KING	1.8	31	—	—	54
M-1197	MUSTANG	1.9	31	—	—	54
2057 [3]	PROFISEED	1.9	31	—	—	54
H-1194	GOLDEN HARVEST	1.9	31	—	59	53
S-239	SANSGAARD	2.3	31	—	—	53
CX232	DEKALB	2.3	31	60	58	53
1995	RAMY	1.9	31	—	59	53
390 BRAND	LATHAM	1.9	31	59	56	53
K-1990	KSC/CHALLENGER	1.6	31	—	—	53
2224	PROFISEED	2.1	31	—	58	52

Table 10A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the southern zone (1994-96; Fairmont, Lamberton, Waseca).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
3195	DYNA-GRO	1.9	31	—	—	52
DSR-195	DAIRYLAND	1.9	31	—	—	52
SPRINGFIELD	GCS	2.0	31	—	—	52
T-3212	THOMPSON	2.1	31	—	—	52
480 BRAND	LATHAM	1.9	31	—	56	51
MARCUS 95	IOWA A.E.S.	2.3	31	—	53	51
9204	PIONEER	2.0	31	58	54	51
H-1218	GCS	2.1	31	—	57	51
S-214E	SANSGAARD	2.0	31	60	58	51
1580	STINE	1.5	31	—	—	50
STURDY	MINN. A.E.S.	2.1	32	54	51	46
PB-197	PRAIRIE BRAND	1.9	32	63	63	58
PBR-202	PBR	2.0	32	—	—	57
2000	PROFISEED	2.0	32	—	60	57
SOI 169	SANDS	2.0	32	64	63	57
M-2200	MUSTANG	2.0	32	—	61	56
1970	STINE	1.9	32	—	—	56
9233	PIONEER	2.3	32	—	—	55
J750	JACOBSEN	2.0	32	—	61	55
TS200	TERRA	2.0	32	—	—	55
EX-392	LATHAM	2.0	32	—	—	55
K-2343	KSC/CHALLENGER	2.0	32	—	61	55
PBR-217	PBR	2.1	32	—	58	55
2195	RAMY	2.1	32	—	—	54
9623	PAYCO	2.3	32	—	—	54
K-2343+	KRUGER	2.1	32	—	—	54
G-1912	MSG	1.9	32	—	—	54
S20-91	NK	2.1	32	—	56	54
RS2394	RENK	2.3	32	—	—	53
G2440	MSG	2.4	32	61	59	53
J742	JACOBSEN	2.2	32	—	58	53
TS210	TERRA	2.1	32	—	58	53
AP2220	AGRIPRO	2.2	32	—	—	53
K-2162+	KSC/CHALLENGER	1.8	32	—	—	53
S-187	SANSGAARD	1.8	32	—	57	53
EX2001	THOMPSON	2.0	32	—	—	53
T-3190	THOMPSON	2.0	32	58	57	52
PB-201	PRAIRIE BRAND	2.0	32	60	59	52
S23-06	NK	2.3	32	—	—	52
KB184	KALTENBERG	1.8	32	60	58	52
SOI 252	SANDS	2.1	32	58	57	52
EX2018	THOMPSON	1.9	32	—	—	52
E-298	EHRICH	2.2	32	59	56	52
PBR-192	PBR	1.9	32	—	—	52
5205	MYCOGEN	2.0	32	—	—	51

Table 10A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the southern zone (1994-96; Fairmont, Lamberton, Waseca).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1994-96	Yield 1995-96	Yield 1996
GL2045	GRT. LKS	2.0	32	—	54	51
RS1896	RENK	1.8	32	—	—	51
SOI 261	SANDS	1.9	32	—	—	49
ARCHER	IOWAA.E.S.	1.9	32	53	52	49
H-1228	GOLDEN HARVEST	2.2	32	55	53	46
660 BRAND	LATHAM	2.4	33	63	61	57
REDWOOD	GCS	2.1	33	—	—	56
D260	ICI	2.5	33	—	61	55
2220	RAMY	2.2	33	—	61	55
K-2525+	YIELD KING	2.3	33	—	—	55
2560	STINE	2.4	33	—	—	54
CX229	DEKALB	2.2	33	—	—	54
J-251	MYCOGEN	2.4	33	61	58	54
K-2625	KRUGER	2.4	33	—	60	53
J865	JACOBSEN	2.4	33	—	—	53
IA2008	IOWAA.E.S.	2.2	33	58	57	53
LG6212	LG SEEDS	2.1	33	—	—	52
2050	HY-VIGOR	2.2	33	59	57	52
KB246	KALTENBERG	2.4	33	—	—	52
G2100	MSG	2.1	33	—	57	52
S-236	SANSGAARD	2.5	33	—	56	51
590 BRAND	LATHAM	2.2	33	58	57	51
2350	HY-VIGOR	2.3	33	—	—	50
3215	CIBA	2.1	33	—	55	49
2395	RAMY	2.3	33	—	—	48
3256	DYNA-GRO	2.2	34	—	—	56
EXP 9624	STAR	2.4	34	—	—	54
2556	PROFISEED	2.4	34	—	—	54
GL2415	GRT. LKS.	2.4	34	60	58	54
T-3227 [3]	THOMPSON	2.3	34	—	57	54
PB-2120	PRAIRIE BRAND	2.3	34	60	59	53
L2494	CENEX/LOL	2.0	34	—	57	53
K-2220	KRUGER	2.0	34	—	—	53
9625	PAYCO	2.4	34	—	—	52
K-2323+	YIELD KING	2.1	34	61	58	52
2621	STINE	2.2	34	57	56	51
PBR-246	PBR	2.4	34	—	—	51
DG 3210	DYNA-GRO	2.1	34	—	56	50
DSR-220/STS	DAIRYLAND	2.2	34	—	52	49
EXP 9622	STAR	2.2	34	—	—	48
DSR-246/STS	DAIRYLAND	2.4	34	—	—	47
IA2008R	IOWAA.E.S.	2.1	35	—	54	49
EX2025	THOMPSON	2.4	35	—	—	49
2196	VIKING	2.1	35	—	—	46
K-2595	KSC/CHALLENGER	2.2	36	—	—	44
IA2022	IOWAA.E.S.	2.5	37	—	—	46
K-2111	KRUGER	1.9	38	—	—	48
LSD 0.20				1	1	2

Table 10B. Disease resistance, protein and oil characteristics of public and private soybean varieties for the southern zone (1994-96; Fairmont, Lamberton, Waseca).

Note Key:

[1] PR=Phytophthora resistance: Rps#=gene present, S=susceptible, M=mixture of resistant and susceptible.

[2] CR=Chlorosis rating: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible.

[3] Protein and oil percentages, based on 13% moisture.

[4] Blend; information furnished by originator.

[5] 1-year data.

[6] 2-year average.

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
KATO	Rps1	MS	38.1	39.3	38.8	16.5	16.2	16.4
PARKER	Rps1	S	35.3	36.4	35.3	17.6	16.9	17.8
5181	S	MS [6]	—	—	34.5	—	—	17.4
1470	S	MR [5]	—	36.4	35.4	—	16.9	17.4
9163	Rps1c	MR [5]	—	34.9	33.9	—	17.6	18.0
9172	Rps1k	S [5]	—	36.1	35.5	—	16.6	17.2
CX173	Rps1c	MS [5]	—	34.7	33.8	—	17.0	17.7
AP 1953	Rps1k	MS [6]	—	—	33.2	—	—	18.0
WILTON	S	MS [6]	—	—	35.0	—	—	16.7
1796	S	MR [6]	—	—	35.0	—	—	16.9
RS1795	S	S [6]	—	—	34.7	—	—	16.8
MCLEOD	Rps1c	MS [6]	—	—	36.3	—	—	17.5
BERT	Rps1	MS	34.3	35.5	34.9	18.0	17.2	17.6
FREEBORN	Rps1	MR [5]	—	37.5	36.5	—	16.2	17.1
D180	S	MS [6]	—	—	35.8	—	—	17.9
EXP 9618	S	S [6]	—	—	34.9	—	—	17.5
M-1160	S	S [6]	—	—	35.5	—	—	17.2
TS174	S	S [5]	—	36.6	35.3	—	16.4	17.3
K-2029	S	S [6]	—	—	35.3	—	—	17.5
D190	S	S	35.7	37.0	35.1	17.0	16.1	17.5
M-1175	S	MS [5]	—	36.7	35.9	—	16.6	17.6
HARDIN 91	Rps1k	S	35.6	36.5	36.6	17.6	17.1	17.7
FARIBAULT	Rps1	MS	34.0	34.1	33.9	18.0	17.6	18.0
SOI 260	S	S [5]	—	36.2	35.5	—	17.0	17.6
250 BRAND	S	S [6]	—	—	35.4	—	—	17.3
TS194	S	S	35.5	36.6	35.5	17.3	16.6	17.6
G-1885	S	S [6]	—	—	35.7	—	—	17.6
EX-560	S	S [6]	—	—	35.2	—	—	17.3
200	S	MS [5]	—	35.5	35.2	—	17.2	17.8
9419	S	S	35.5	36.5	35.6	17.6	17.2	18.0
RS1994	Rps1	S [6]	—	—	35.3	—	—	17.4
EX1981	S	S [6]	—	—	35.6	—	—	17.0
CX197	Rps1k	MS [5]	—	—	35.5	—	—	17.4
ODIN	S	S [5]	—	35.9	35.7	—	16.8	17.2
1690	S	MS [5]	—	35.3	35.1	—	17.1	17.4

Table 10B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the southern zone (1994-96; Fairmont, Lambertson, Waseca).

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
D213	Rps1	MS	34.8	35.7	35.0	17.8	17.3	17.5
IA2021	Rps1k	S [5]	—	34.3	34.4	—	18.0	18.4
OLAF	S	MS [6]	—	—	35.2	—	—	17.8
T-3188 [4]	S	S [6]	—	—	35.1	—	—	17.3
3196	S	S [6]	—	—	36.1	—	—	17.2
GRANITE	Rps1	MS [5]	—	36.6	36.0	—	16.5	17.3
DSR-178	Rps1c	S [6]	—	—	35.7	—	—	17.5
410 BRAND	S	S [5]	—	35.6	35.3	—	17.5	17.9
PB-212E	S	S	34.7	35.6	35.4	18.1	17.7	17.9
1980	S	MS [6]	—	—	35.5	—	—	17.4
9620	S	MS [6]	—	—	35.0	—	—	17.5
GL 1872	S	S [6]	—	—	35.8	—	—	17.8
EXP 16528	S	MS [6]	—	—	35.1	—	—	17.4
EXP 9619	Rps1c	MR [6]	—	—	34.5	—	—	17.3
J669	S	S [6]	—	—	36.3	—	—	17.2
K-2022	S	MS [6]	—	—	35.7	—	—	17.4
M-1197	S	MS [6]	—	—	36.1	—	—	17.2
2057 [4]	S	S [6]	—	—	36.3	—	—	17.3
H-1194	S	MS [5]	—	35.1	35.1	—	17.5	18.2
S-239	S	S [6]	—	—	36.4	—	—	16.5
CX232	S	S	35.6	36.5	35.7	17.7	17.3	17.9
1995	S	S [5]	—	35.4	35.0	—	17.0	17.3
390 BRAND	S	MS	35.2	36.0	34.9	17.5	16.9	17.0
K-1990	S	S [6]	—	—	35.6	—	—	17.9
2224	S	MS [5]	—	33.7	34.3	—	17.6	18.2
3195	S	MS [6]	—	—	34.6	—	—	17.2
DSR-195	S	MS [6]	—	—	35.3	—	—	17.3
SPRINGFIELD	Rps1k	MS [6]	—	—	34.8	—	—	17.1
T-3212	S	S [6]	—	—	36.8	—	—	16.6
480 BRAND	S	S [5]	—	35.2	35.2	—	17.5	17.8
MARCUS 95	Rps1k+6	MS [5]	—	35.3	34.7	—	17.3	17.8
9204	Rps1	S	35.0	36.0	35.3	17.4	16.7	17.1
H-1218	S	MS [5]	—	35.8	34.7	—	16.5	17.2
S-214E	S	MS	34.3	35.1	34.7	17.9	17.2	17.8
1580	S	S [6]	—	—	34.6	—	—	17.7
STURDY	Rps1	MS	35.5	36.4	36.1	17.4	16.8	17.0
PB-197	S	MS	35.5	36.4	35.5	17.3	16.8	17.0
PBR-202	S	MS [6]	—	—	35.5	—	—	17.3
2000	S	MS [5]	—	36.2	35.6	—	16.9	17.1
SOI 169	S	MS	35.4	36.0	35.1	17.2	16.6	16.8
M-2200	S	MS [5]	—	36.1	35.3	—	16.7	17.1
1970	S	MS [6]	—	—	35.1	—	—	17.3
9233	S	MS [6]	—	—	35.2	—	—	17.1
J750	S	MS [5]	—	36.0	35.4	—	17.1	17.4
TS200	S	S [6]	—	—	35.2	—	—	17.4

Table 10B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the southern zone (1994-96; Fairmont, Lambertson, Waseca).

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
EX-392	S	MR [6]	—	—	35.6	—	—	17.2
K-2343	S	S [5]	—	36.1	35.6	—	16.8	17.0
PBR-217	S	MS [5]	—	36.0	34.9	—	16.9	17.6
2195	S	MS [6]	—	—	35.1	—	—	17.2
9623	S	MR [6]	—	—	35.5	—	—	17.2
K-2343+	S	S [6]	—	—	35.3	—	—	16.8
G-1912	Rps1c	MS [6]	—	—	34.8	—	—	17.3
S20-91	Rps1c	MS [5]	—	36.7	36.0	—	16.8	17.5
RS2394	Rps1	S [6]	—	—	34.5	—	—	17.8
G2440	S	MS	35.2	36.0	35.5	17.5	17.0	17.5
J742	S	MS [5]	—	35.7	35.6	—	17.0	17.5
TS210	S	MS [5]	—	37.1	36.6	—	16.4	16.9
AP 2220	S	MS [6]	—	—	35.8	—	—	17.2
K-2162+	S	MR [6]	—	—	35.2	—	—	17.6
S-187	S	S [5]	—	37.0	35.9	—	16.5	17.2
EX2001	S	S [6]	—	—	35.2	—	—	17.0
T-3190	S	S	35.9	36.6	35.7	16.9	16.4	16.9
PB-201	S	MS	36.3	37.0	36.3	16.9	16.6	17.3
S23-06	Rps1c	MS [6]	—	—	36.0	—	—	17.5
KB184	S	S	35.5	36.5	36.0	17.6	17.1	17.7
SOI 252	S	MR	36.2	37.1	36.3	16.9	16.4	17.0
EX2018	S	MR [6]	—	—	34.5	—	—	16.7
E-298	S	MS	35.4	36.3	35.3	17.4	16.8	17.3
PBR-192	Rps1c	MS [6]	—	—	34.5	—	—	17.1
5205	S	S [6]	—	—	36.8	—	—	16.4
GL2045	S	MR [5]	—	37.5	36.8	—	16.3	17.2
RS1896	S	S [6]	—	—	35.5	—	—	17.7
SOI 261	S	MS [6]	—	—	34.7	—	—	17.9
ARCHER	Rps1k+6	MS	34.9	35.8	35.0	17.5	16.7	17.4
H-1228	Rps1	MS	34.1	34.9	34.9	18.0	17.3	17.4
660 BRAND	S	S	35.0	35.9	35.5	17.7	17.2	17.6
REDWOOD	S	MS [6]	—	—	36.4	—	—	17.0
D260	S	S	35.0	35.9	35.1	17.6	16.9	17.5
2220	S	MS [5]	—	35.7	35.4	—	17.1	17.3
K-2525+	S	S [6]	—	—	35.7	—	—	16.6
2560	S	S [6]	—	—	35.7	—	—	16.8
CX229	Rps1c	S [6]	—	—	34.7	—	—	17.5
J-251	S	MS	35.3	36.1	35.8	17.4	16.8	17.1
K-2625	S	S [5]	—	36.4	35.5	—	16.4	16.9
J865	S	MS [6]	—	—	35.3	—	—	17.1
IA2008	Rps1	MS	34.3	35.4	34.8	17.5	16.5	16.8
LG6212	S	MS [6]	—	—	36.4	—	—	17.0
2050	S	S	35.8	36.7	35.9	17.1	16.5	17.2
KB246	S	S [6]	—	—	35.8	—	—	17.2
G2100	S	MR [5]	—	37.4	36.7	—	16.4	16.9

Table 10B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the southern zone (1994-96; Fairmont, Lamberton, Waseca).

Variety	PR [1]	CR [2]	Protein			Oil		
			1994-96 [3]	1995-96 [3]	1996 [3]	1994-96 [3]	1995-96 [3]	1996 [3]
S-236	S	S [5]	—	36.5	36.1	—	16.4	17.1
590 BRAND	S	MS	36.2	36.9	36.2	17.0	16.5	17.1
2350	S	MS [6]	—	—	35.8	—	—	17.4
3215	S	MR [5]	—	37.2	36.6	—	16.5	17.3
2395	S	S [6]	—	—	35.5	—	—	17.3
3256	S	MS [6]	—	—	35.7	—	—	17.2
EXP 9624	S	MS [6]	—	—	35.1	—	—	17.7
2556	S	MS [6]	—	—	36.2	—	—	17.5
GL2415	S	S	35.0	35.7	35.9	17.6	17.0	17.3
T-3227 [4]	S	S [5]	—	36.0	36.1	—	17.0	17.0
PB-2120	S	S	34.8	35.6	35.3	17.6	17.1	17.2
L 2494	S	MS [5]	—	35.9	35.9	—	17.0	17.5
K-2220	S	S [6]	—	—	34.7	—	—	18.3
9625	S	S [6]	—	—	36.1	—	—	16.9
K-2323+	S	MS	36.5	37.1	36.8	16.9	16.6	17.1
2621	S	MS	36.6	37.4	37.1	16.7	16.2	16.7
PBR-246	S	S [6]	—	—	35.4	—	—	17.5
DG 3210	S	MS [5]	—	37.2	37.0	—	16.2	16.8
DSR-220/STS	S	MS [5]	—	36.4	35.6	—	16.6	16.9
EXP 9622	Rps1k	MR [6]	—	—	35.7	—	—	17.1
DSR-246/STS	S	S [6]	—	—	34.2	—	—	17.7
IA2008R	Rps1k	MS [5]	—	35.4	34.5	—	16.9	17.2
EX2025	S	MS [6]	—	—	35.3	—	—	16.9
2196	S	S [6]	—	—	36.3	—	—	17.0
K-2595	S	MS [6]	—	—	34.5	—	—	17.6
IA2022	S	MS [6]	—	—	34.8	—	—	18.1
K-2111	S	MS [6]	—	—	35.0	—	—	18.4

Table 11A. Comparisons of yields, in bushels per acre, of selected public and private soybean varieties from tests on soybean cyst nematode infested (East Chain, New Richland, and St. James) and non-infested (Fairmont, Lamberton, and Waseca) sites (1994-96).

Note Key:

[1] Relative maturity rating provided by originator. Number before decimal represents maturity group. Number after decimal represents ranking within maturity group.

[2] Date represents the number of days after August 31 that variety reaches maturity.

[3] Blend; information furnished by originator.

Variety	Maturity [1]	Date [2]	Infested Yield			Noninfested Yield		
			1994-96	1995-96	1996	1994-95	1995-96	1996
PARKER	1.5	25	37	37	33	54	54	53
9182	1.8	28	—	—	37	—	—	50
EXP 15951	1.7	29	—	—	38	—	—	50
FREEBORN	1.6	29	38	35	38	49	48	47
FARIBAULT	1.9	29	36	35	37	50	48	45
S18-11	1.8	30	—	—	39	—	—	50
IA2021	2.1	31	—	42	42	—	55	53
STURDY	2.1	31	38	38	35	52	51	51
9234	2.3	31	—	—	40	—	—	45
2220SCN	2.0	32	—	—	43	—	—	53
1882	1.8	32	—	—	40	—	—	51
2444SCN	2.2	32	—	—	43	—	—	50
T-3198CN [3]	2.1	32	41	41	38	55	53	50
EX1983	1.9	33	—	—	38	—	—	49
522CN BRAND	2.1	33	—	39	35	—	47	45
BELL	2.2	33	37	35	32	49	45	42
IA2008R	2.1	35	—	—	36	—	—	51
CX260C	2.6	37	40	37	33	51	49	46
LSD 0.20			1	1	2	1	1	2

Table 11B. Disease resistance, protein and oil characteristics of selected public and private soybean varieties entered in soybean cyst nematode evaluations.

Note Key:

[1] PR=Phytophthora resistance: Rps#=gene present, S=susceptible.

[2] CR=Chlorosis rating, 3-year average unless noted: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible.

[3] SCN=Soybean cyst nematode reaction to a Minnesota isolate that behaves as Race 3: R=resistant, MR=moderately resistant, MS=moderately susceptible, S=susceptible.

[4] Protein and oil percentages based on 13% moisture.

[5] 1-year data.

[6] 2-year average.

[7] Blend; information furnished by originator.

Variety	Company Name	PR [1]	CR [2]	SCN [3]	Protein 1996 [4]	Oil 1996 [4]
PARKER 9182	MINN. A.E.S. PIONEER	Rps1 S	S S [5]	S MR	34.3 33.9	17.9 18.2
EXP 15951	ZILLER	Rps1k	S [5]	MR	35.6	17.5
FREEBORN	MINN. A.E.S.	Rps1	MR	MR	36.7	17.2
FARIBAULT	MINN. A.E.S.	Rps1	MR	R	34.1	18.2
S18-11	NK	S	MS [5]	R	37.9	17.1
IA2021	IOWAA.E.S.	Rps1k	S [6]	S	34.4	18.7
STURDY	MINN. A.E.S.	Rps1	MS	S	35.2	17.7
9234	PIONEER	Rps1	MS [5]	R	35.3	17.3
2220SCN	KRUGER	Rps1k	S [5]	S	35.2	17.2
1882	STINE	S	MS [5]	S	34.6	17.4
2444SCN	KRUGER	S	MS [5]	R	34.9	17.7
T-3198CN [7]	THOMPSON	S	MS	S	36.0	17.5
EX 1983	THOMPSON	S	S [5]	S	35.0	17.6
522CN BRAND	LATHAM	S	MS [6]	MR	36.9	17.4
BELL	ILL. A.E.S.	S	MS	MR	36.8	16.9
IA2008R	IOWAA.E.S.	Rps1k	MS [5]	S	34.6	17.3
CX260C	DEKALB	S	S	MR	32.9	18.7

## 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

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