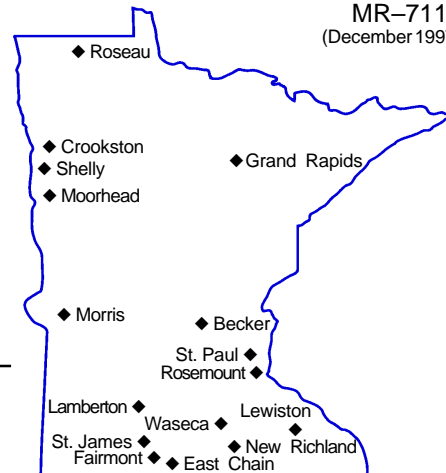


Minnesota Agricultural Experiment Station

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 1998 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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by Nevin D. Young and Ward C. Stienstra, Department of Pathology. 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 1997

This publication reports the results of soybean variety tests conducted by the Minnesota Agricultural Experiment Station. This report was prepared by James Orf [phone: 612-625-8275; e-mail: <orffx001@maroon.tc.umn.edu>], Leland L. Hardman, Philip J. Schaus and Darryld L. Oistad, Department of Agronomy and Plant Genetics, University of Minnesota, St. Paul, MN 55108.

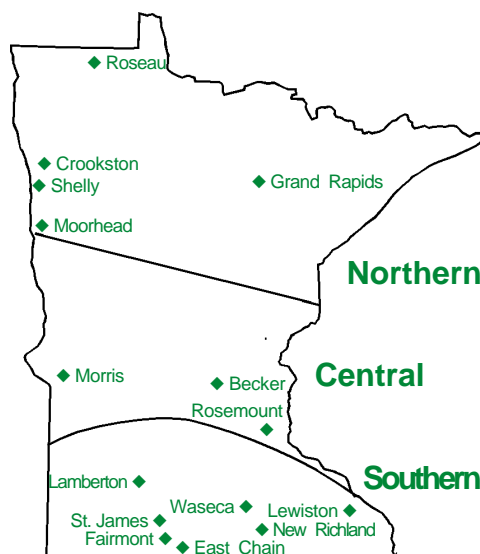
SOYBEAN

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. Specific test locations for each zone are indicated in each table. Becker was the only irrigated test location. Hail occurred in October at Shelly and Crookston. The trials were planted between May 1 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. Table 1, which

details the available race resistances to phytophthora root rot, is significantly revised from past years.

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 1997 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 editions of *Varietal Trials* prior to 1995 is indicated in the following table:

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 many 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	26	27
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. *Table 1, which details the race resistances provided by the various genes, is significantly revised from past years, incorporating two new races of the fungus and revising the race resistance information for several of the genes.*

Soybean Cyst Nematode—SCN was first identified in Minnesota in 1978 and continues to spread. It is now known to occur in 35 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 tonon-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 Table 9. These trials were conducted on “infested” sites near East Chain, Waseca 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, Minnesota Extension Service, University of Minnesota. It is not available electronically. It is available from Minnesota County Extension offices or the Distribution Center, 3 Coffey Hall, 1420 Eckles Ave., University of Minnesota, St. Paul, MN 55108-6069.

Brown Stem Rot—Brown stem rot is a fungal disease that can cause yield losses in certain situations. The disease occurs most frequently when soybean follows soybean, but can also occur where soybean is planted every other year. Resistant varieties, or longer rotations out of soybean, 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 1997 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 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:

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

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

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. Rsp1k 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).

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. Seed sale regulated by U.S. Plant Variety Protection Act.

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 Alpha 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. Rps 1 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.

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 in 1996. Seed will be widely available in 1998.

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 1995.

IA2021—Southern zone. Relative maturity 2.1. High yield potential. Rps1k gene for resistance to phytophthora. Developed by Iowa Agricultural Experiment Station. Released 1995.

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.

MN 0301—Northern and central zones. Relative maturity 0.3. High yielding, good lodging resistance. Rps1 gene for resistance to phytophthora. No Registered seed class. Developed by Minnesota Agricultural Experiment Station. Released 1997. Seed sales regulated by U.S. Plant Variety Protection Act, PVP (94).

MN 1301—Central and southern zones. Relative maturity 1.3. High yielding. Rps1c gene for resistance to phytophthora. Good lodging resistance. High protein level. No Registered seed class. Developed by Minnesota Agricultural Experiment Station. Released 1997. Seed sales regulated by U.S. Plant Variety Protection Act, PVP (94).

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 resistance 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.

Surge—Central zone. Relative maturity 0.9. High yield potential. Good lodging and iron chlorosis resistance. Rps1 gene for resistance to phytophthora. Released in 1997. Developed by South Dakota and Minnesota Agricultural Experiment Stations. Seed sales regulated by U.S. Plant Variety Protection Act, PVP (94).

Not Adequately Tested Publicly Developed Variety

Stride—Central and Southern zones. Relative maturity 1.3. High yield potential. Very good lodging resistance. Rps1 gene for resistance to phytophthora. Released in 1997. Seed will be widely available in 1999. Developed by South Dakota and Minnesota Agricultural Experiment Stations. Seed sales regulated by U.S. Plant Variety Protection Act, PVP (94).

Traill—Northern Zone. Relative maturity 0.0. High yield potential. Good iron chlorosis rating. Released in 1997. Seed will be widely available in 1999. Developed by North Dakota Agricultural Experiment Station. Seed sales regulated by U.S. Plant Variety Protection Act, PVP (94).

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. Rps1-c 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.

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.

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.

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.

IA 2011—Specialty variety for food products such as tofu. Relative maturity 2.4. Lacks the lipoxygenase-2 enzyme and is high protein. Susceptible to phytophthora. Released under royalty agreement by Iowa State University Research Foundation in 1995. Developed by Iowa Agricultural Experiment Station. License required for seed production.

IA 2012—Specialty large seeded variety for use in various food products. Relative maturity 2.4. Higher yields than previous large seeded varieties. Susceptible to phytophthora. Released under royalty agreement by Iowa State University Research Foundation in 1995. Developed by Iowa Agricultural Experiment Station. License required for seed production.

IA 2016—Specialty variety for use in food products. Relative maturity 2.3. Higher yield and similar seed size and protein content as Vinton 81. Released under royalty agreement by Iowa State University Research Foundation in 1995. Developed by Iowa Agricultural Experiment Station. License required for seed production.

IA 2020—Specialty variety for use in tofu. Relative maturity 2.4. Larger seed size than Vinton 81 and HP 204. Released under royalty agreement by Iowa State University Foundation in 1995. Developed by Iowa Agricultural Experiment Station. License required for seed production.

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, 824 2nd Street South, P.O. Box 250, Brookings, SD 57006-0250 (AP)
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)
Dahlco Seeds, 14730 15th St. S.W., Cokato, MN 55321 (Dahlco)
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, 6131 North Fork Road, Ames, IA 50010 (Yield King)
Domestic Seed & Supply, Inc., Box 466, Madison, SD 57042 (Mustang)
Ehrich Seed Farms, Inc., 4109 420th Avenue, Elmore, MN 56027 (Ehrich)

Garst Seed Co., 2369 330th Street, Slater, IA 50244 (Garst)
Gold Country Seed, Inc., 220 West 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 (Grt. Lks)
Hy-Vigor Seeds, Inc., 4970 Redwood Ave., Paullina, IA 51046 (Hy-Vigor)

Interstate Payco Seed Company, Box 338, 1215 Prairie Parkway, West Fargo, ND 58078 (Payco)
Jacobsen Hybrid Corn Co., Inc., Box 379, Lake View, IA 51450 (Jacobsen)
Kaltenberg Seeds, P.O. 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)
Latham Seed Company, 131 180th St., Alexander, IA 50420 (Latham)
LG Seeds, 905 Dexter St., Box 216, Prescott, WI 54021 (LG)
Maple Leaf Foods International, 3080 Yonge Street, Toronto, Ontario M4N 3N1 Canada (MLFI)
Midwest Seed Genetics, P.O. Box 518, Carroll, IA 51401 (M/W Genetics)

Mycogen Seeds, 1340 Corporate Center Curve, St. Paul, MN 55121-1428 (Mycogen Seeds)

NorthStar Genetics, Box 40, Wanamingo, MN 55983 (NS)

Novartis Seeds, P.O. Box 959, Minneapolis, MN 55440-0959 (NK)

Pioneer Hi-Bred Int'l, Inc., 130 SE Willmar Ave., Willmar, MN 56201 (Pioneer)

Prairie Brand Research, 15 X Ave., Story City, IA 50248 (PBR)

Prairie Brand Seed Company, 15 X Ave, Story City, IA 50248 (Prairie Brand)

Profiseed, Inc., 1691 Highway 65, Hampton, IA 50441 (ProfiSeed)

Ramy International, Ltd., 1329 N. Riverfront Drive, P.O. Box 3722, Mankato, MN 56002-3722 (Ramy)

Renk Seed Co., 6800 Wilburn Rd., Sun Prairie, WI 53590 (Renk)

Renze Hybrids, Inc., 27410 Kittyhawk Avenue, Carroll, Iowa 51401 (Renze)

Sand Seed Service, Inc., 4765 Highway 143, Marcus, IA 51035 (Sands)

Sansgaard Seed Farms, Inc., 15 X Avenue, 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 Co., 2225 Laredo Trail, Adel, IA 50003 (Stine)

Stine Seed Farm, 2225 Laredo Trail, Adel, IA 50003 (Stine)

Terra Industries, Inc., P.O. Box 6000, Sioux City, IA 51102-6000 (Terra)

Thompson Agronomics, Inc., 40321 130th Avenue, Leland, IA 50453 (Thompson)

Thompson Seeds, Inc., 40321 130th Ave., Leland, IA 50453 (Thompson)

UAP Seeds/Dyna Gro, Box 55, Kasota, MN 56050 (Dyna Gro)

Wensman Seed Company, P.O. Box 190, 102 Aldrich Avenue, Wadena, MN 56482 (Wensman)

Ziller Seed Co., Inc., R.R. 1, Box 122, Bird Island, MN 55310 (Ziller)

Table 2. Yields in bushels per acre of publicly developed soybean varieties in northern zone (1993-97). Sorted by growing zone maturity date, earliest to latest.

Note Key:

[1] 1994-97 data adjusted to 5 year average.

[2] 1995-97 data adjusted to 5 year average.

[3] No data, 1995

[4] 1996-97 data adjusted to 5 year average.

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

Variety	Cr	GRap	Mor	Rou	Sh [3]
McCall	35	22	27	28	39
Glacier	35 [1]	24	41 [1]	30	35 [1]
Agassiz	41	27	30	28	40
Ozzie	38	—	40	—	39
Traill	41 [2]	24 [2]	34 [2]	28 [2]	37 [2]
Council	—	—	39	—	40 [4]
Evans	42	—	39	—	34
Dawson	42	—	35	—	37
Lambert	45	—	39	—	40
Toyopro	41 [1]	—	35 [1]	—	34 [1]
Hendricks	41 [1]	—	40 [1]	—	38 [1]
LSD 20%	2	1	2	1	1

Table 3. Yields in bushels per acre of publicly developed soybean varieties in central zone (1993-97). Sorted by growing zone maturity date, earliest to latest.

Note Key:

[1] 1995-1997 data, adjusted to 5 year average.

[2] 1996, 1997 data, adjusted to 5 year average.

Locations: Ros=Rosemount; Mor=Morris; Be=Becker; AVG=average for all three sites. Rosemount and Morris grown in 10-inch rows; Becker grown in 30-inch rows.

Variety	Ros	Mor	Be	AVG
Ozzie	38	42	44	41
Evans	39	45	45	43
Council	43 [1]	45 [1]	49 [1]	46 [1]
Lambert	44	47	51	48
Hendricks	44	46	49	46
Kato	42	47	46	45
Parker	44	51	49	48
IA1006	46 [2]	54 [2]	50 [2]	50 [2]
LSD 20%	2	2	2	1

Table 4. Yields in bushels per acre of publicly developed soybean varieties in southern zone (1993-97). Sorted by growing zone maturity date, earliest to latest.

Note Key:

[1] 1994-97 data, adjusted to 5-year average.

[2] 1995-97 data, adjusted to 5-year average.

[3] 1996-97 data, adjusted to 5-year average.

[4] Mid May planting.

[5] Mid-June planting.

Locations: Was=Waseca, Lam=Lamberton, Fai=Fairmont, Lew=Lewiston, AVG=average for all sites. Lamberton and Waseca grown in 10-inch rows; Lewiston and Fairmont grown in 30-inch rows.

Variety	Was and Lam [4]	[5]	Fai [4]	Was [4]	Lam [4]	Lew [4]	Mid-May AVG
McCall	—	29	—	—	—	—	—
Glacier	—	33 [2]	—	—	—	—	—
Agassiz	—	33	—	—	—	—	—
Ozzie	39	32	32	39	38	—	36
MN0301	46 [2]	—	34 [3]	46 [2]	46 [2]	—	42
Council	45 [2]	—	36 [3]	47 [2]	44 [2]	—	42
Evans	44	36	33	44	44	44	41
Lambert	47	40	36	46	48	47	44
Hendricks	46	40 [1]	37	46	47	48 [1]	44
Kato	51	41	42	48	53	49	48
MN1301	53 [2]	42 [3]	42	53 [1]	52 [1]	—	49
Parker	55	46	43	51	60	51	51
Freeborn	50	—	43	48	52	52 [1]	49
Hardin 91	56	43	42	55	58	54	52
Bert	52	43	41	51	54	54	50
Granite	56	42 [1]	41	55	56	51 [1]	51
Faribault	49	36 [1]	40	46	52	50 [1]	47
Sturdy	55	38	42	52	58	55	52
IA1006	62 [3]	—	43 [3]	56 [3]	63 [3]	—	54
Archer	53	40	39	52	55	47	48
IA2021	62 [2]	43 [3]	45 [2]	56 [2]	64 [2]	56 [2]	55
IA2008	59	—	43	57	60	56	54
IA2008R	61 [2]	43 [3]	44 [2]	57 [2]	62 [2]	—	54
LSD 20%	1	1	1	2	2	2	1

Table 5. Characteristics of publicly developed soybean varieties (1997) 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	—	1.0	24	S	35.0	17.2	MR
GLACIER	9-18	—	1.3	27	RPS6	36.8	16.4	MS
TRAILL	9-21	—	1.8	26	RPS1	37.8	15.9	MS
AGASSIZ	9-22	—	2.0	26	RPS1	36.2	17.4	MR
CHICO	9-23	—	2.5	24	RPS1	37.0	17.0	MS
DANATTO	9-26	—	4.0	32	S	36.7	16.6	MR
MN0301	9-28	—	1.8	29	RPS1	35.8	17.2	MS
OZZIE	9-28	—	1.5	28	RPS1	37.2	16.4	MR
PROTO	9-29	—	1.8	26	S	39.3	15.4	S
EVANS	10-1	—	1.8	30	RPS1	36.3	16.9	MS
COUNCIL	10-1	—	2.0	30	RPS1	36.2	16.9	MR
TOYOPRO	10-2	—	1.5	32	S	39.8	15.4	S
LAMBERT	10-2	—	1.8	33	RPS1	37.1	17.2	MR
MINNATTO	10-2	—	2.0	30	RPS1	38.8	15.8	MR
HENDRICKS	10-4	—	1.5	31	RPS1	36.5	17.3	MS

Table 6. Characteristics of publicly developed soybean varieties (1997) 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	9-2	—	1.8	27	S	35.2	18.0	MR
GLACIER	9-8	—	1.8	27	RPS6	36.4	17.3	MS
CHICO	9-9	—	2.3	31	RPS1	36.0	17.5	MS
AGASSIZ	9-9	—	1.5	33	RPS1	36.1	17.3	MR
MN0301	9-10	—	1.5	34	RPS1	35.8	17.5	MS
TRAILL	9-10	—	2.0	31	RPS1	38.1	15.7	MS
DANATTO	9-11	—	3.3	30	S	35.3	17.0	MR
OZZIE	9-11	—	1.5	32	RPS1	37.3	16.6	MR
COUNCIL	9-13	—	1.5	34	RPS1	35.3	17.5	MR
PROTO	9-13	—	1.5	28	S	38.9	15.5	S
LAMBERT	9-14	—	1.5	35	RPS1	36.4	17.2	MR
EVANS	9-16	—	2.3	38	RPS1	35.3	17.8	MS
TOYOPRO	9-17	—	1.3	32	S	39.2	15.7	S
MINNATTO	9-17	—	1.5	32	RPS1	37.7	16.1	MR
HENDRICKS	9-19	—	1.5	33	RPS1	36.3	17.3	MS
KATO	9-20	—	1.3	39	RPS1	39.5	15.7	MS
MN1301	9-21	—	1.0	40	RPS1	37.2	16.3	MR
PARKER	9-24	—	2.3	37	RPS1	35.8	17.5	S
BERT	9-25	—	2.3	42	RPS1	35.3	17.3	MS
FREEBORN	9-25	—	1.5	37	RPS1	37.7	16.3	MR
FARIBAULT	9-26	—	1.8	35	RPS1	35.7	17.3	MS
ARCHER	9-26	—	1.5	43	RPS1K+6	36.3	16.7	MR
STURDY	9-26	—	1.5	41	RPS1	37.4	15.9	MS
HARDIN 91	9-27	—	1.8	40	RPS1K	36.6	17.2	MS
GRANITE	9-27	—	2.0	41	RPS1	37.5	16.7	MS
IA1006	9-27	—	1.8	41	S	36.1	16.5	MS
IA2021	9-29	—	2.3	34	RPS1K	35.4	17.5	S

Table 7. Characteristics of publicly developed soybean varieties (1997) 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	8-28	9-15	3.3	24	S	34.9	18.0	MR
GLACIER	8-29	9-18	3.3	23	RPS6	35.6	17.8	MS
AGASSIZ	9-2	9-21	2.5	27	RPS1	34.9	18.2	MR
OZZIE	9-5	9-23	2.0	28	RPS1	36.5	17.0	MR
PROTO	9-6	—	3.0	26	S	37.6	16.5	S
MN0301	9-8	—	2.5	29	RPS1	34.2	18.2	MS
COUNCIL	9-10	—	2.5	31	RPS1	34.7	17.9	MR
EVANS	9-10	9-26	3.3	36	RPS1	34.5	18.3	MS
TOYOPRO	9-12	—	2.3	30	S	38.7	16.0	S
LAMBERT	9-13	9-27	3.0	30	RPS1	35.9	17.7	MR
MINNATTO	9-13	—	2.5	29	RPS1	36.5	16.6	MR
HENDRICKS	9-13	9-28	3.0	33	RPS1	36.0	17.3	MS
KATO	9-14	9-29	2.5	34	RPS1	37.8	16.5	MS
MN1301	9-16	9-29	2.0	37	RPS1	36.6	16.8	MR
FREEBORN	9-21	—	2.5	36	RPS1	36.6	16.8	MR
PARKER	9-22	9-29	3.0	39	RPS1	35.2	17.5	S
FARIBAULT	9-23	10-1	3.0	29	RPS1	34.9	17.3	MS
GRANITE	9-24	10-4	2.8	36	RPS1	36.6	17.0	MS
BERT	9-24	10-2	2.8	40	RPS1	34.5	17.7	MS
ARCHER	9-24	10-4	2.8	38	RPS1K+6	35.3	17.2	MR
IA1006	9-25	10-3	2.8	38	S	36.0	16.8	MS
STURDY	9-26	10-3	2.8	37	RPS1	36.0	17.0	MS
HARDIN 91	9-27	10-5	2.8	38	RPS1K+6	36.3	17.3	S
IA2008	9-29	10-5	2.5	37	RPS1	35.8	16.5	MS
IA2021	9-29	10-3	2.5	34	RPS1K	34.9	17.5	S
IA2008R	9-29	10-7	2.5	38	RPS1K	35.8	16.9	MS
IA2036	9-29	10-7	3.3	43	S	36.4	16.8	MS

Table 8A. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the northern zone (1995-97; 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 1995-97	Yield 1996-97	Yield 1997
MCCALL	MINNESOTA A.E.S.	00.7	9	35	36	34
9004	PIONEER	00.4	10	36	36	33
5006	MYCOGEN SEEDS	00.6	10	—	—	33
DSR-006	DSR	00.6	13	—	—	30
9007	PIONEER	00.7	14	35	34	33
GLACIER	MINNESOTA A.E.S.	00.8	15	36	37	36
AGASSIZ	MINNESOTA A.E.S.	0.0	17	39	39	35
9040	DAHLCO	0.3	17	—	—	33
SOO-66	NK	0.0	18	40	39	38
0102	NS	0.1	18	—	—	34
TRAILL	NO. DAKOTA A.E.S.	0.0	18	—	—	34
9030	DAHLCO	0.3	19	—	—	38
MN0301	MINNESOTA A.E.S.	0.3	20	—	41	41
013	MYCOGEN SEEDS	0.1	20	42	41	40
BYGLAND	GCS	0.3	20	—	42	36
H-1039	GOLDEN HARVEST	0.3	20	—	36	35
9042	PIONEER	0.4	20	38	38	35
KORADA	SEMENCES	0.0	21	43	41	40
OZZIE	MINNESOTA A.E.S.	0.3	21	39	37	36
CX025	DEKALB	0.2	21	—	38	34
CX046	DEKALB	0.4	21	38	37	33
DST-035	DSR	0.3	21	39	38	33
0302	NS	0.3	23	—	—	37
PBR-077X	PBR	0.8	23	—	—	34
W3067	WENSMAN SEED	0.6	24	—	—	38
9071	PIONEER	0.7	25	43	41	37
W3036	WENSMAN SEED	0.3	26	—	42	37
COUNCIL	NO. DAKOTA A.E.S.	0.5	26	40	39	37
L0332	CENEX/LOL	0.3	26	—	—	36
0480	STINE	0.2	27	—	—	41
EVANS	MINNESOTA A.E.S.	0.6	27	40	39	38
LAMBERT	MINNESOTA A.E.S.	0.8	27	41	40	37
9606	PAYCO	0.6	27	—	38	36
DAWSON	MINNESOTA A.E.S.	0.6	27	40	38	36
DST0907	DSR	0.7	28	—	—	39
PB-099	PRAIRIE BRAND	0.9	28	—	—	34
DST-065	DSR	0.6	29	—	42	41
9508	PAYCO	0.6	29	—	42	40
690	RAMY	0.3	29	—	41	40
0653	STINE	0.3	29	44	42	39

Table 8A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the northern zone (1995-97; Crookston, Moorhead, Shelly).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1995-97	Yield 1996-97	Yield 1997
WINDSOR	GCS	0.6	29	—	—	37
X7707	GCS	0.7	29	—	—	36
PB-094	PRAIRIE BRAND	0.9	29	42	39	35
CX096	DEKALB	0.9	29	38	36	34
0550	AP	0.5	30	—	—	39
W3075	WENSMAN SEED	0.7	30	43	40	38
PB-097	PRAIRIE BRAND	0.9	31	-	43	42
0670	STINE	0.3	31	44	42	40
1073	STINE	0.3	31	—	—	40
PB-098X	PRAIRIE BRAND	0.9	31	—	—	39
0929	AP	0.9	32	—	—	40
LSD 20%				1	1	2

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.

Variety	PR [1]	CR [2]	Protein			Oil		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
MCCALL	S	MR	35.9	35.6	36.4	16.7	17.0	16.6
9004	S	MR [4]	36.4	36.8	37.0	16.8	16.8	16.4
5006	S	—	—	—	37.4	—	—	16.8
DSR-006	S	—	—	—	37.1	—	—	16.4
9007	Rps1	MS	35.2	35.3	36.1	17.2	17.4	16.8
GLACIER	Rps6	MS	36.5	36.4	37.6	16.5	16.7	16.1
AGASSIZ	Rps1	MR	36.2	36.0	36.9	16.7	16.8	16.2
9040	S	—	—	—	36.8	—	—	16.5
SOO-66	Rps1	MS [4]	35.6	35.3	36.4	16.9	17.3	16.5
0102	S	—	—	—	36.7	—	—	16.6

Table 8B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the northern zone (1995-97; Crookston, Moorhead, Shelly).

Variety	PR [1]	CR [2]	Protein			Oil		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
TRAILL	Rps1	—	—	—	38.2	—	—	15.7
9030	Rps1	—	—	—	36.5	—	—	16.9
MN0301	Rps1	MS [5]	—	35.0	36.2	—	17.4	16.8
013	Rps1	S [4]	36.3	36.0	37.0	16.7	17.0	16.5
BYGLAND	Rps1	MS [5]	—	36.5	37.7	—	16.8	16.1
H-1039	S	S [5]	—	36.5	36.8	—	17.3	16.8
9042	Rps1	MS	35.6	35.8	37.0	17.1	17.2	16.4
KORADA	Rps1c	MS [4]	36.3	36.1	36.9	16.9	16.9	16.4
OZZIE	Rps1	MS	37.0	36.8	37.7	16.3	16.6	16.0
CX025	Rps1	S [5]	—	35.8	37.4	—	17.1	16.2
CX046	S	MR [4]	37.6	36.4	36.9	16.2	16.6	16.5
DST-035	S	MS	36.3	36.5	37.0	16.7	16.6	16.4
0302	S	—	—	—	37.5	—	—	16.7
PBR-077X	S	—	—	—	36.6	—	—	16.8
W3067	S	—	—	—	37.0	—	—	16.5
9071	Rps1c	MS	34.2	34.4	35.8	17.8	18.0	17.3
W3036	S	S [5]	—	35.1	36.4	—	17.4	16.9
COUNCIL	Rps1	MR [4]	35.6	35.7	37.1	16.9	17.0	16.1
L0332	Rps1k	—	—	—	36.0	—	—	17.2
0480	S	—	—	—	37.2	—	—	16.7
EVANS	Rps1	MS	35.2	35.1	37.0	17.1	17.4	16.9
LAMBERT	Rps1	MR	35.6	35.9	37.2	17.3	17.4	16.6
9606	S	S [5]	—	35.9	36.7	—	16.9	16.7
DAWSON	Rps1	MR	35.0	35.0	36.5	17.1	17.2	16.6
DST0907	S	—	—	—	37.9	—	—	16.0
PB-099	Rps1c	—	—	—	37.6	—	—	16.1
DST-065	Rps1c	MS [5]	—	34.3	35.9	—	17.6	16.8
9505	M	MS [5]	—	35.4	36.9	—	17.1	16.6
690	S	S [5]	—	35.4	36.9	—	17.4	17.0
0653	Rps1c	MS	35.3	35.3	36.7	17.0	17.2	16.7
WINDSOR	S	—	—	—	35.9	—	—	17.3
X7707	Rps1k	—	—	—	37.5	—	—	16.6
PB-094	M	MS [4]	36.0	35.9	37.4	16.7	16.8	16.1
CX096	Rps1	MS	36.5	36.7	38.3	16.5	16.6	15.6
0550	S	—	—	—	37.3	—	—	16.7
W3075	Rps1c	MS [4]	35.5	35.7	37.3	17.1	17.0	16.4
PB-097	S	S [5]	—	35.2	36.4	—	17.4	16.8
0670	S	MS	35.1	35.4	36.6	17.5	17.6	17.0
1073	Rps1c	—	—	—	37.4	—	—	16.5
PB-098X	S	—	—	—	37.5	—	—	16.1
0929	Rps1c	—	—	—	37.0	—	—	16.5

Table 9A. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the central zone (1995-97; 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 1995-97	Yield 1996-97	Yield 1997
OZZIE	MINN. A.E.S.	0.3	9	43	42	44
MN0301	MINN. A.E.S.	0.3	10	—	—	48
9071	PIONEER	0.7	11	51	48	52
D061	GARST	0.6	11	—	—	47
LAMBERT	MINN. A.E.S.	0.8	11	48	45	47
COUNCIL	ND A.E.S.	0.5	12	46	44	48
EVANS	MINN. A.E.S.	0.6	12	44	41	47
TS084	TERRA	0.8	13	49	48	53
990	RAMY	0.9	13	—	47	51
91B01	PIONEER	1.0	14	—	—	54
M-0995	MUSTANG	0.9	14	50	48	53
S08-80	NK	0.8	14	—	47	53
H-1082	GOLDEN HARVEST	0.8	14	48	46	51
W3096	WENSMAN SEED CO.	0.9	14	50	49	51
EXP 14831	ZILLER	1.4	15	—	48	53
X103	GOLDEN HARVEST	1.3	15	—	—	51
9610	PAYCO	1.0	15	50	46	51
5100	MYCOGEN SEEDS	1.0	15	—	44	48
DG3095	DYNA-GRO	0.9	15	—	—	47
K-0909+	KRUGER	0.7	16	—	51	58
W3127	WENSMAN SEED CO.	1.2	16	—	—	55
PB-104	PRAIRIE BRAND	1.0	16	51	49	55
DG3134	DYNA-GRO	1.3	16	—	—	55
6091	LG	0.9	16	—	—	53
1394	AP	1.3	16	50	49	53
EXP16326	ZILLER	1.0	16	—	—	52
W3106	WENSMAN SEED CO.	1.0	16	—	49	52
SURGE	MINN. & SD A.E.S.	0.9	16	—	—	51
CX096	DEKALB	0.9	16	46	44	49
TS093	TERRA	0.9	16	46	43	48
RS0995	RENK	0.9	17	—	49	54
W3107	WENSMAN SEED CO.	1.0	17	—	—	53
9132	PIONEER	1.3	17	48	46	52
JULIUS	DAHLMAN	0.9	17	—	47	52
HENDRICKS	MINN. A.E.S.	0.9	17	47	45	52
150 BRAND	LATHAM	1.3	17	—	48	51
1073	STINE	0.3	18	—	48	53
M-0970	MUSTANG	0.9	18	—	—	53
O912	NS	0.9	18	—	—	53
KB128	KALTENBERG	1.2	18	—	—	52

Table 9A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the central zone (1995-97; Becker, Morris, Rosemount).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1995-97	Yield 1996-97	Yield 1997
HENRY	DAHLMAN	1.3	18	—	—	52
CX145	DEKALB	1.4	19	51	49	57
L1083	CENEX/LOL	1.0	19	—	—	56
PB-097	PRAIRIE BRAND	0.9	19	—	49	55
E107	TERRA	1.0	19	—	—	54
9151	PIONEER	1.5	19	51	49	53
111	MYCOGEN SEEDS	1.1	19	50	48	52
CX132	DEKALB	1.3	19	—	—	51
DSR-133	DSR	1.3	19	50	46	51
E147	TERRA	1.4	20	—	—	60
K-0999	KRUGER	0.7	20	52	50	58
9120	DAHLCO	1.2	20	—	—	53
K-1303+	KSC/CHALLENGER	1.1	20	—	—	52
9140	DAHLCO	1.4	20	—	—	51
KATO	MINN.A.E.S.	1.3	20	45	43	48
PB-146X	PRAIRIE BRAND	1.4	22	—	—	61
T-3162	THOMPSON	1.5	22	—	47	55
DSR-173	DSR	1.6	22	51	48	54
M-1133	MUSTANG	1.3	22	52	49	54
9141	DAHLCO	1.4	22	—	—	53
RS1493	RENK	1.4	22	—	47	51
K-1444+	YIELD KING	1.2	23	—	—	60
K-1444	KRUGER	1.2	23	—	—	60
K-1515	KSC/CHALLENGER	1.4	23	—	—	59
1386	STINE	1.2	23	—	—	58
X3614	GCS	1.4	23	—	—	57
9150	DAHLCO	1.5	23	—	—	56
K-1212+	KSC/CHALLENGER	1.0	23	—	—	56
6145	LG	1.4	23	—	49	55
EX-160	LATHAM	1.4	23	—	—	55
5143	MYCOGEN SEEDS	1.4	23	—	49	55
K-1313+	YIELD KING	1.2	23	—	51	55
K-1550	YIELD KING	1.3	23	—	—	55
PB-145X	PRAIRIE BRAND	1.4	23	—	—	55
L1499	CENEX/LOL	1.4	23	—	51	54
G1400	M/W GENETICS	1.4	23	52	49	54
S13-J6	NK	1.3	23	—	—	53
PBR-127	PBR	1.2	23	52	51	53
EXP S1402	SANDS	1.4	23	—	—	51
MN1301	MINN.A.E.S.	1.3	23	—	—	49
SOI 177	SANDS	1.4	24	—	52	56
X5715	GCS	1.5	24	—	—	56
ERICK	DAHLMAN	1.3	24	—	—	56
9514	PAYCO	1.4	24	—	50	56
M-1160	MUSTANG	1.6	24	—	—	54

Table 9A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the central zone (1995-97; Becker, Morris, Rosemount).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1995-97	Yield 1996-97	Yield 1997
1512	NS	1.5	24	—	—	54
PARKER	MINN.A.E.S.	1.5	24	50	47	52
X147	GOLDEN HARVEST	1.4	24	—	—	52
EX6245	THOMPSON	1.4	25	—	—	64
K-1819	YIELD KING	1.6	25	56	53	59
CX173	DEKALB	1.7	25	—	—	57
S-144X	SANSGAARD	1.4	25	—	—	56
T-3184	THOMPSON	1.5	25	—	46	54
1680	STINE	1.4	26	—	—	62
K-1777	KSC/CHALLENGER	1.5	26	—	52	60
K-1990	KRUGER	1.6	26	56	53	60
PBR-164X	PBR	1.5	26	—	—	56
PS 1647	PROFISEED	1.5	26	—	—	56
1525	RAMY	1.5	26	—	—	55
DSR-158	DSR	1.5	26	—	50	55
EXP 9715	SANDS	1.5	26	—	—	55
PBR-148X	PBR	1.5	26	—	—	54
EXP S1518	SANDS	1.5	26	—	—	52
S-173X	SANSGAARD	1.7	27	—	—	63
2500	STINE	1.5	27	—	—	60
ODIN	GCS	1.6	27	—	—	59
IA1006	IOWA A.E.S.	1.6	27	—	51	57
1995	AP	1.9	27	—	—	57
DSR-180/STS	DSR	1.7	27	—	—	55
EX6142	THOMPSON	1.4	27	—	—	55
EX6144	THOMPSON	1.5	27	—	—	53
PBR-169X	PBR	1.5	29	—	57	67
LSD 20%				1	1	2

Table 9B. Disease resistance, protein and oil characteristics of public and private soybean varieties for the central zone (1995-97; 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		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
OZZIE	Rps1	MS	37.6	37.0	37.7	16.2	16.8	16.5
MN0301	Rps1	—	—	—	35.6	—	—	17.4
9071	Rps1c	MS [4]	34.8	34.4	35.0	17.7	18.1	17.8
D061	S	—	—	—	36.2	—	—	16.8
LAMBERT	Rps1	MR	36.5	36.3	37.1	17.3	18.0	17.4
COUNCIL	Rps1	MR	35.6	35.2	36.0	17.2	17.6	17.1
EVANS	Rps1	MS	36.2	35.8	36.6	17.1	17.5	16.8
TS084	Rps1c	MS [4]	35.8	35.0	35.6	17.3	17.8	17.5
990	S	MR [5]	—	35.2	35.8	—	17.7	17.4
91B01	Rps1k	—	—	—	35.5	—	—	17.6
M-0995	S	MS [4]	35.8	35.3	36.2	17.6	18.0	17.5
S08-80	Rps1c	S [5]	—	36.2	37.3	—	17.1	16.2
H-1082	M	MS [4]	35.9	35.2	35.6	17.4	17.8	17.3
W3096	S	MS [4]	35.1	35.0	35.8	17.9	18.0	17.6
EXP 14831	S	MS [5]	—	35.1	36.0	—	17.7	17.2
X103	Rps1c	—	—	—	37.3	—	—	16.6
9610	S	MS [4]	36.0	35.5	36.2	17.3	17.8	17.3
5100	S	MS [5]	—	36.2	37.1	—	17.5	16.6
DG3095	Rps1k	—	—	—	36.4	—	—	16.7
K-0909+	S	S [5]	—	35.3	36.1	—	17.4	17.1
W3127	Rps1c	—	—	—	36.0	—	—	16.9
PB-104	S	MS [4]	35.8	35.5	36.5	17.4	17.7	16.9
DG3134	Rps1c	—	—	—	37.5	—	—	16.3
6091	S	—	—	—	35.9	—	—	17.6
1394	Rps1c	MS [4]	36.7	36.4	37.2	17.3	17.2	16.7
EXP16326	Rps1c	—	—	—	35.5	—	—	17.1
W3106	S	S [5]	—	35.4	36.6	—	17.8	17.2
SURGE	Rps1	—	—	—	37.8	—	—	16.8
CX096	Rps1	MS	36.9	36.3	37.2	16.3	16.7	16.0
TS093	Rps1	MS [4]	36.1	36.1	36.8	17.0	17.3	16.6
RS0995	S	MS [5]	—	35.1	35.7	—	18.0	17.5
W3107	Rps1c	—	—	—	36.3	—	—	16.8
9132	Rps1c	MS [4]	35.5	35.3	35.9	17.3	17.6	16.9
JULIUS	S	S [5]	—	35.5	36.3	—	17.5	17.1
HENDRICKS	Rps1	MS	36.6	36.6	37.3	17.1	17.4	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		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
150 BRAND	S	S [5]	—	35.4	36.4	—	17.8	17.4
1073	Rps1c	S [5]	—	35.4	36.3	—	17.7	17.0
M-0970	Rps1c	—	—	—	36.6	—	—	16.7
O912	Rps1c	—	—	—	35.7	—	—	—
HENRY	Rps1c	—	—	—	37.7	—	—	16.3
CX145	S	S [4]	37.0	36.3	36.9	16.9	17.4	16.8
L1083	Rps1c	—	—	—	36.3	—	—	17.0
PB-097	S	S [5]	—	35.6	36.5	—	17.6	16.9
E107	Rps1c	—	—	—	36.2	—	—	16.7
9151	Rps1k	MS [4]	36.2	35.6	35.8	17.0	17.5	17.0
111	Rps1	MS [4]	35.1	34.7	35.9	17.3	17.7	17.0
CX132	Rps1	—	—	—	36.5	—	—	16.8
DSR-133	Rps1	MS	35.5	35.0	36.1	17.0	17.4	16.7
E147	S	—	—	—	37.2	—	—	16.3
K-0999	S	S	35.4	35.1	35.9	17.2	17.4	16.7
9120	Rps1k	—	—	—	35.6	—	—	17.3
K-1303+	S	—	—	—	35.9	—	—	16.8
9140	Rps1k	—	—	—	38.1	—	—	15.7
KATO	Rps1	MS	39.2	39.4	39.6	15.9	15.8	15.3
PB-146X	S	—	—	—	37.3	—	—	16.9
T-3162	S	MS [5]	—	35.8	36.7	—	17.1	16.7
DSR-173	Rps1	S	37.1	36.8	37.4	16.7	16.9	16.1
M-1133	Rps1	S [4]	36.8	36.3	36.6	16.7	17.4	16.5
9141	Rps1	—	—	—	36.7	—	—	16.8
RS1493	Rps1k	MS [5]	—	37.5	38.1	—	16.7	15.9
K-1444+	S	—	—	—	37.5	—	—	16.8
K-1444	S	—	—	—	37.1	—	—	17.0
K-1515	S	—	—	—	36.3	—	—	17.0
1386	S	—	—	—	37.5	—	—	16.6
X3614	Rps1	—	—	—	36.6	—	—	16.9
9150	Rps1k	—	—	—	35.0	—	—	17.5
K-1212+	Rps1c	—	—	—	36.7	—	—	16.7
6145	Rps1	MS [5]	—	36.0	36.8	—	17.4	16.6
EX-160	S	—	—	—	36.5	—	—	16.7
5143	S	S [5]	—	35.3	36.3	—	18.0	17.0
K-1313+	Rps1	S [5]	—	35.8	36.5	—	17.4	16.8
K-1550	S	—	—	—	36.6	—	—	16.9
PB-145X	S	—	—	—	36.2	—	—	17.0
L1499	Rps1k	S [5]	—	36.7	37.0	—	17.6	17.1
G1400	S	MS [4]	37.5	36.7	37.8	16.2	16.7	16.2
S13-J6	Rps1k	—	—	—	37.5	—	—	15.9
PBR-127	S	MS [4]	36.7	36.0	36.6	17.4	17.5	16.8
EXP S1402	Rps1	—	—	—	36.1	—	—	16.8
MN1301	M	—	—	—	37.6	—	—	15.9
SOI 177	S	MS [5]	—	36.4	36.9	—	16.9	16.5

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		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
X5715	Rps1k	—	—	—	35.7	—	—	17.2
ERICK	S	—	—	—	37.2	—	—	16.0
9514	S	MS [5]	—	37.0	37.8	—	16.6	16.1
M-1160	S	—	—	—	36.7	—	—	16.5
1512	Rps1c	—	—	—	35.8	—	—	16.7
PARKER	Rps1	S	35.5	35.0	36.3	17.2	17.6	16.5
X147	Rps1	—	—	—	36.7	—	—	16.6
EX6245	S	—	—	—	37.0	—	—	16.4
K-1819	S	MS	36.2	36.0	36.7	17.1	17.4	16.9
CX173	Rps1c	—	—	—	35.5	—	—	16.8
S-144X	S	—	—	—	36.3	—	—	16.6
T-3184	Rps1	S [5]	—	35.8	36.8	—	16.6	15.8
1680	S	—	—	—	36.6	—	—	16.5
K-1777	S	S [5]	—	36.5	36.2	—	16.9	16.9
K-1990	S	S [4]	36.9	36.9	37.7	16.4	16.9	16.0
PBR-164X	S	—	—	—	37.7	—	—	16.4
PS 168	S	—	—	—	37.8	—	—	16.4
1525	S	—	—	—	36.8	—	—	16.3
DSR-158	S	S [5]	—	36.7	37.6	—	16.8	16.1
EXP 9715	S	—	—	—	37.9	—	—	16.2
PBR-148X	Rps1k	—	—	—	37.9	—	—	15.7
EXP S1518	S	—	—	—	38.2	—	—	16.1
S-173X	S	—	—	—	36.5	—	—	16.3
2500	S	—	—	—	37.2	—	—	16.4
ODIN	S	—	—	—	35.6	—	—	16.8
IA1006	S	S [5]	—	35.4	36.5	—	17.4	16.3
1995	Rps1c	—	—	—	35.9	—	—	16.3
DSR-180/STS	S	—	—	—	37.2	—	—	16.3
EX6142	M	—	—	—	35.8	—	—	17.0
EX6144	S	—	—	—	37.0	—	—	16.6
PBR-169X	S	MS [5]	—	36.4	37.3	—	16.9	15.9

Table 10A. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the southern zone (1995-97; 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 1995-97	Yield 1996-97	Yield 1997
KATO	Minn. A.E.S.	1.3	15	48	46	46
MN1301	Minn. A.E.S.	1.3	16	—	—	46
E147	TERRA	1.4	18	—	—	53
D174	GARST	1.7	19	—	—	50
STRIDE	MINN. & SD A.E.S.	1.3	20	—	—	51
GUSTAV	DAHLMAN	1.5	20	—	—	51
PARKER	Minn. A.E.S.	1.5	20	52	49	50
FARIBAULT	Minn. A.E.S.	1.9	20	47	46	49
9180	DAHLCO	1.8	20	—	—	49
9163	PIONEER	1.6	21	53	50	51
GL1559	GRT. LKS.	1.5	21	—	—	51
1150	HY-VIGOR	1.5	22	—	—	54
FREEBORN	Minn. A.E.S.	1.6	22	47	45	49
BERT	Minn. A.E.S.	1.8	22	48	45	48
E-167	MUSTANG	1.6	23	—	—	55
VICTOR	DAHLMAN	1.7	23	—	—	53
9172	PIONEER	1.7	24	55	52	55
9210	DAHLCO	2.1	25	—	—	60
X3719	GCS	1.9	25	—	—	59
K-1990	KRUGER	1.6	25	—	—	58
WILTON	DAHLMAN	1.7	25	—	55	57
KB168	KALTENBERG	1.6	25	—	—	56
1796	VIKING	1.7	25	—	52	54
CX197	DEKALB	1.9	25	—	52	53
5181	MYCOGEN SEEDS	1.8	25	—	52	53
G1885	M/W GENETICS	1.9	26	—	59	63
SOI 260	SANDS	1.9	26	60	58	59
K-1990+	KSC/CHALLENGER	1.7	26	—	—	59
9419	PAYCO	1.9	26	59	56	58
GL1872	GRT. LKS.	1.8	26	—	56	58
EX5704	THOMPSON	2.0	26	—	—	57
PS 2035	PROFISEED	2.0	26	—	—	57
6192	LG	1.9	26	—	—	56
TS194	TERRA	1.9	26	58	56	56
M-1190	MUSTANG	1.9	26	—	—	56
S-227	SANSGAARD	2.2	26	—	—	56
J659	JACOBSON	1.9	26	—	—	56
K-2020	KSC/CHALLENGER	1.8	26	—	—	56
2500	STINE	1.5	26	—	—	55
K-2202	KRUGER	2.0	26	—	—	55

Table 10A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the southern zone (1995-97; Fairmont, Lambertson, Waseca).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1995-97	Yield 1996-97	Yield 1997
D180	GARST	1.8	26	—	54	55
KINBRAE	GCS	2.0	26	—	—	54
RS1994	RENK	1.9	26	—	54	54
IA1006	IOWA A.E.S.	1.6	26	—	—	54
STURDY	Minn. A.E.S.	2.1	26	52	49	53
EXP15235	ZILLER	—	26	—	—	52
HARDIN 91	IOWA A.E.S.	2.0	26	51	49	52
GRANITE	Minn. A.E.S.	1.8	26	52	50	51
ARCHER	IOWA A.E.S.	1.9	26	51	48	48
DG3202	DYNA-GRO	2.0	27	—	—	61
PB-194	PRAIRIE BRAND	1.9	27	—	—	60
200	MYCOGEN SEEDS	2.1	27	58	57	60
EX-330	LATHAM	1.9	27	—	—	59
PBR-192	PBR	1.9	27	—	55	59
T-3217 [3]	THOMPSON	2.2	27	—	—	59
D205	GARST	2.0	27	—	—	59
RS1896	RENK	1.8	27	—	55	59
H-1194	GOLDEN HARVEST	1.9	27	59	56	59
TS174	TERRA	1.7	27	58	55	58
TS200	TERRA	2.0	27	—	57	58
E-233	MUSTANG	2.3	27	—	—	58
250 BRAND	LATHAM	1.8	27	—	57	57
S21-A1	NK	2.1	27	—	—	57
410 BRAND	LATHAM	1.9	27	58	56	56
1995	AP	1.9	27	—	—	56
X179	GOLDEN HARVEST	1.8	27	—	—	55
R2098	RENZE	2.0	27	—	—	54
EX6051	THOMPSON	2.0	27	—	—	54
CX205	DEKALB	2.0	27	—	—	54
EX5705	THOMPSON	1.9	27	—	—	53
G2112	M/W GENETICS	2.1	28	—	—	63
X3721	GCS	2.1	28	—	—	63
J750	JACOBSON	2.0	28	62	59	63
CX232	DEKALB	2.3	28	60	58	63
R2297	RENZE	2.2	28	—	—	61
2002	NS	2.0	28	—	—	61
K-2343	KSC/CHALLENGER	2.1	28	61	57	60
R1998	RENZE	1.9	28	—	—	60
DG3195	DYNA-GRO	1.9	28	—	—	60
L2126	CENEX/LOL	2.1	28	—	—	60
X 214	GOLDEN HARVEST	2.1	28	—	—	59
J679	JACOBSON	1.9	28	—	—	59
2302	NS	2.3	28	—	—	59
DSR-195	DSR	1.9	28	—	55	59
9190	DAHLCO	1.9	28	—	—	58

Table 10A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the southern zone (1995-97; Fairmont, Lamberton, Waseca).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1995-97	Yield 1996-97	Yield 1997
1995	RAMY	1.9	28	58	56	58
EXP17639	ZILLER	—	28	—	—	58
590 BRAND	LATHAM	2.2	28	57	54	57
2220	AP	2.2	28	—	55	57
KB208	KALTENBERG	2.0	28	—	—	57
2380	EHRICH	2.3	28	—	—	57
EXP S1816	STAR	1.9	28	—	—	57
DSR-220/STS	DSR	2.2	28	54	53	57
5205	MYCOGEN SEEDS	2.0	28	—	54	57
T-3212	THOMPSON	2.1	28	—	54	57
R1996	RENZE	1.9	28	—	—	56
K-2121+	YIELD KING	1.9	28	—	—	56
DSR-215/RR	DSR	2.1	28	—	—	56
CX229	DEKALB	2.2	28	—	55	56
2025	HY-VIGOR	2.0	28	—	—	55
PS 2000	PROFISEED	2.1	28	57	56	55
IA2021	IOWA A.E.S.	2.1	28	55	52	55
RS2394	RENK	2.3	28	—	54	54
K-2025+	KSC/CHALLENGER	1.8	28	—	—	54
SOI 270	SANDS	1.8	28	—	—	53
WJ 130597	MLFI	2.4	28	—	—	46
PB-2120	PRAIRIE BRAND	2.3	29	60	59	64
M-2200	MUSTANG	2.0	29	62	59	62
K-2625+	KRUGER	2.4	29	58	58	62
SOI 169	SANDS	2.0	29	62	59	61
662 BRAND	LATHAM	2.3	29	—	—	61
2195	RAMY	2.1	29	—	58	61
PB-197	PRAIRIE BRAND	1.9	29	62	59	61
K-2021+	KRUGER	1.8	29	—	—	60
T-3222	THOMPSON	2.2	29	—	—	60
1970	STINE	1.9	29	—	58	60
EX6714	THOMPSON	2.3	29	—	—	60
PBR-202	PBR	2.0	29	—	58	60
H-1218	GOLDEN HARVEST	2.2	29	58	55	60
PBR-216	PBR	2.1	29	—	—	59
K-2162	YIELD KING	1.9	29	—	—	58
9623	PAYCO	2.3	29	—	56	58
DG3256	DYNA-GRO	2.2	29	—	57	58
9245	PIONEER	2.4	29	—	—	58
9233	PIONEER	2.3	29	—	56	58
392 BRAND	LATHAN	1.9	29	—	56	58
2196	VIKING	2.1	29	—	52	57
T-3227 [3]	THOMPSON	2.3	29	57	55	57
660 BRAND	LATHAM	2.4	29	60	57	57
2220	RAMY	2.2	29	57	56	56

Table 10A continued. Maturity characteristics and bushels per acre yields of public and private soybean varieties for the southern zone (1995-97; Fairmont, Lambertson, Waseca).

Variety	Company Name	Maturity [1]	Date [2]	Yield 1995-97	Yield 1996-97	Yield 1997
IA2008	IOWA A.E.S.	2.2	29	56	54	55
PBR-218	PBR	2.1	29	—	—	54
K-2425	YIELD KING	2.2	30	—	—	63
2180	STINE	2.0	30	—	—	62
2550	RAMY	2.4	30	—	—	62
GL2334	GRT. LKS.	2.3	30	—	—	59
S-236	SANSGAARD	2.4	30	55	55	59
6245	LG	2.4	30	—	—	58
SOI 276	SANDS	2.4	30	—	—	58
251	MYCOGEN SEEDS	2.4	30	57	55	56
PS 1997RR	PROFISEED	2.0	30	—	—	54
IA2008R	IOWA A.E.S.	2.1	30	53	51	53
2488	STINE	2.3	31	—	—	63
EX-640	LATHAM	2.4	31	—	—	62
PB-235X	PRAIRIE BRAND	2.3	31	—	—	61
IA2022	IOWA A.E.S.	2.5	31	—	52	59
K-2535+	YIELD KING	2.3	31	—	—	59
J876	JACOBSON	2.4	31	—	—	57
DSR-246/STS	DSR	2.4	31	—	52	56
PS 2413	PROFISEED	2.4	31	—	—	56
PB-SP20	SANSGAARD	2.2	32	—	—	55
PB-SP23	SANSGAARD	2.3	32	—	—	53
LSD 20%				1	1	2

Table 10B. Disease resistance, protein and oil characteristics of public and private soybean varieties for the southern zone (1995-97; 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] 1-year data..

[5] 2-year data.

Variety	PR [1]	CR [2]	Protein			Oil		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
KATO	Rps1	MS	38.9	38.5	38.2	16.2.	16.3	16.2
MN1301	M	—	—	—	37.7	—	—	16.3
E147	S	—	—	—	36.3	—	—	16.5
D174	S	—	—	—	36.3	—	—	16.9
STRIDE	Rps1	—	—	—	35.4	—	—	17.7
GUSTAV	S	—	—	—	35.6	—	—	17.8
PARKER	Rps1	S	36.1	35.5	35.7	17.1	17.7	17.5
FARIBAULT	Rps1	MS	34.4	34.4	35.0	17.6	17.8	17.6
9180	Rps1c	—	—	—	36.8	—	—	16.7
9163	Rps1c	MR [4]	35.0	34.6	35.3	17.4	17.6	17.2
GL1559	Rps1	—	—	—	38.5	—	—	15.7
1150	S	—	—	—	37.0	—	—	16.9
FREEBORN	Rps1	MR [4]	37.4	36.8	37.1	16.2	16.8	16.4
BERT	Rps1	MS	35.4	35.2	35.4	17.2	17.4	17.3
E-167	M	—	—	—	36.5	—	—	16.8
VICTOR	Rps1c	—	—	—	36.1	—	—	17.3
9172	Rps1k	S [4]	35.9	35.6	35.7	16.7	17.0	16.8
9210	Rps1k	—	—	—	36.1	—	—	17.0
X3719	S	—	—	—	36.3	—	—	17.0
K-1990	S	—	—	—	36.6	—	—	16.8
WILTON	S	MS [5]	—	35.2	35.4	—	16.6	16.4
KB168	Rps1	—	—	—	36.8	—	—	16.8
1796	S	MR [5]	—	35.2	35.4	—	16.9	16.8
CX197	Rps1k	MS [4]	—	35.4	35.3	—	17.3	17.1
5181	S	MS [5]	—	34.7	34.9	—	17.0	16.6
G1885	S	S [5]	—	36.1	36.5	—	17.2	16.8
SOI 260	S	S [4]	36.4	36.1	36.8	17.0	17.2	16.8
K-1990+	S	—	—	—	36.5	—	—	17.0
9419	S	S	36.4	35.9	36.2	17.1	17.5	17.0
GL1872	S	S [5]	—	36.0	36.3	—	17.4	17.0
EX5704	S	—	—	—	36.6	—	—	16.7
PS 2035	S	—	—	—	36.4	—	—	16.8
6192	Rps1c	—	—	—	35.3	—	—	16.7
TS194	S	S	36.6	36.1	36.7	16.7	17.1	17.0
M-1190	S	—	—	—	36.4	—	—	17.1

Table 10B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the southern zone (1995-97; Fairmont, Lamberton, Waseca).

Variety	PR [1]	CR [2]	Protein			Oil		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
S-227	Rps1k	—	—	—	36.2	—	—	16.9
J659	S	—	—	—	37.0	—	—	16.7
K-2020	Rps1	—	—	—	34.9	—	—	17.1
2500	S	—	—	—	36.8	—	—	16.8
K-2202	Rps1k	—	—	—	36.6	—	—	16.6
D180	S	MS [5]	—	36.1	36.3	—	17.5	17.1
KINBRAE	Rps1k	—	—	—	36.1	—	—	17.1
RS1994	Rps1	S [5]	—	35.9	36.5	—	16.9	16.4
IA1006	S	—	—	—	35.9	—	—	16.8
STURDY	Rps1	MS	36.5	36.4	36.7	16.8	16.8	16.6
EXP15235	S	—	—	—	36.1	—	—	17.2
HARDIN 91	Rps1k	S	36.6	36.7	36.8	17.0	17.2	16.8
GRANITE	Rps1	MS [4]	36.8	36.6	37.2	16.6	17.0	16.7
ARCHER	Rps1k+6	MS	36.0	35.7	36.4	16.7	17.1	16.7
DG3202	Rps1c	—	—	—	35.1	—	—	16.9
PB-194	S	—	—	—	36.5	—	—	17.1
200	S	MS [4]	35.5	35.2	35.3	17.2	17.4	17.1
EX-330	Rps1c	—	—	—	35.4	—	—	16.5
PBR-192	Rps1c	MS [5]	—	34.9	35.3	—	16.9	16.7
T-3217	S	—	—	—	36.8	—	—	16.3
D205	S	—	—	—	35.3	—	—	16.9
RS1896	S	S [5]	—	35.4	35.3	—	17.3	16.9
H-1194	S	MS [4]	35.4	35.5	36.0	17.4	17.8	17.3
TS174	S	S [4]	36.7	36.0	36.8	16.6	17.0	16.8
TS200	S	S [5]	—	35.2	35.3	—	17.2	17.1
E-233	S	—	—	—	37.5	—	—	15.8
250 BRAND	S	S [5]	—	36.1	36.7	—	17.1	16.8
S21-A1	Rps1k	—	—	—	36.5	—	—	17.0
410 BRAND	S	S [4]	35.8	35.7	36.1	17.2	17.3	16.8
1995	Rps1c	—	—	—	35.2	—	—	16.6
X179	Rps1k	—	—	—	34.3	—	—	17.9
R2098	S	—	—	—	36.5	—	—	16.7
EX6051	Rps1c	—	—	—	35.4	—	—	16.8
CX205	Rps1c	—	—	—	35.5	—	—	17.2
EX5705	S	—	—	—	36.7	—	—	16.8
G2112	S	—	—	—	35.9	—	—	16.7
X3721	S	—	—	—	36.2	—	—	16.4
J750	S	MS [4]	36.0	35.7	36.0	16.9	17.0	16.6
CX232	S	S	36.3	35.9	36.0	17.2	17.4	17.0
R2297	S	—	—	—	36.2	—	—	16.4
2002	S	—	—	—	36.0	—	—	16.6
K-2343	S	S [4]	36.1	35.9	36.2	16.7	16.8	16.6
R1998	Rps1k	—	—	—	36.1	—	—	16.6
DG3195	S	—	—	—	36.4	—	—	16.4
L2126	S	—	—	—	36.3	—	—	16.3

Table 10B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the southern zone (1995-97; Fairmont, Lamberton, Waseca).

Variety	PR [1]	CR [2]	Protein			Oil		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
X 214	S	—	—	—	36.1	—	—	16.4
J679	S	—	—	—	35.8	—	—	16.5
2302	S	—	—	—	37.4	—	—	16.0
DSR-195	S	MS [5]	—	35.6	36.0	—	16.9	16.6
9190	S	—	—	—	35.5	—	—	16.9
1995	S	S [4]	35.3	35.1	35.1	16.9	17.0	17.0
EXP17639	S	—	—	—	33.8	—	—	17.2
590 BRAND	S	MS	37.0	36.7	37.2	16.5	16.9	16.6
2220	S	MS [5]	—	36.4	36.9	—	17.0	16.8
KB208	S	—	—	—	35.9	—	—	16.5
2380	S	—	—	—	37.7	—	—	15.9
EXP S1816	Rps1k	—	—	—	36.1	—	—	16.7
DSR-220/STS	S	MS [4]	36.3	35.9	36.1	16.5	16.6	16.4
5205	S	S [5]	—	36.6	36.5	—	16.6	16.7
T-3212	S	S [5]	—	37.0	37.1	—	16.3	16.0
R1996	S	—	—	—	35.5	—	—	17.0
K-2121+	S	—	—	—	35.8	—	—	16.4
DSR-215/RR	S	—	—	—	35.8	—	—	17.2
CX229	Rps1c	S [5]	—	35.1	35.4	—	17.2	16.8
2025	S	—	—	—	35.3	—	—	17.6
PS 2000	S	MS [4]	36.0	35.8	36.1	16.8	17.0	16.3
IA2021	Rps1k	S [4]	34.5	34.5	34.7	18.0	18.1	17.8
RS2394	Rps1	S [5]	—	35.0	35.5	—	17.4	17.1
K-2025+	S	—	—	—	35.7	—	—	17.0
SOI 270	S	—	—	—	35.1	—	—	17.0
WJ 130597	Rps1	—	—	—	40.4	—	—	15.3
PB-2120	S	S	35.7	35.6	35.9	17.0	16.9	16.7
M-2200	S	MS [4]	36.1	35.8	36.3	16.6	16.7	16.4
K-2625+	S	MS [4]	36.0	35.8	36.1	16.4	16.4	15.9
SOI 169	S	MS	36.0	35.5	35.9	16.7	16.8	16.8
662 BRAND	S	—	—	—	36.2	—	—	16.5
2195	S	MS [5]	—	35.6	36.1	—	16.8	16.4
PB-197	S	MS	36.4	35.9	36.3	16.6	16.7	16.3
K-2021+	S	—	—	—	36.1	—	—	16.4
T-3222	S	—	—	—	36.4	—	—	16.7
1970	S	MS [5]	—	35.6	36.0	—	16.8	16.4
EX6714	S	—	—	—	36.0	—	—	16.8
PBR-202	S	MS [5]	—	35.8	36.1	—	16.8	16.4
H-1218	S	MS	35.9	35.4	36.1	16.5	16.9	16.5
PBR-216	S	—	—	—	36.6	—	—	15.9
K-2162	S	—	—	—	35.6	—	—	17.2
9623	S	MR [5]	—	35.8	36.0	—	16.9	16.7
DG3256	S	MS [5]	—	35.7	35.8	—	17.1	16.9
9245	Rps1k	—	—	—	35.1	—	—	16.8
9233	S	MS [5]	—	35.6	36.1	—	16.8	16.5

Table 10B continued. Disease resistance, protein and oil characteristics of public and private soybean varieties for the southern zone (1995-97; Fairmont, Lamberton, Waseca).

Variety	PR [1]	CR [2]	Protein			Oil		
			1995-97 [3]	1996-97 [3]	1997 [3]	1995-97 [3]	1996-97 [3]	1997 [3]
392 BRAND	S	MR [5]	—	35.7	35.9	—	16.8	16.5
2196	S	S [5]	—	36.6	37.0	—	16.7	16.4
T-3227	S	S [4]	36.1	36.2	36.3	16.7	16.6	16.2
660 BRAND	S	S	35.9	35.8	36.1	17.1	17.3	16.9
2220	S	MS [4]	35.6	35.6	35.7	17.0	17.1	16.8
IA2008	Rps1	MS	35.6	35.4	35.9	16.6	16.8	16.8
PBR-218	S	—	—	—	35.4	—	—	17.0
K-2425	S	—	—	—	36.3	—	—	16.2
2180	S	—	—	—	36.6	—	—	16.0
2550	S	—	—	—	36.4	—	—	16.5
GL2334	S	—	—	—	36.4	—	—	16.0
S-236	S	S [4]	36.5	36.4	36.8	16.6	16.7	16.3
6245	S	—	—	—	37.1	—	—	16.0
SOI 276	S	—	—	—	36.6	—	—	16.3
251	S	MS	36.0	35.8	35.8	16.6	16.7	16.4
PS 1997RR	Rps1c	—	—	—	34.5	—	—	17.1
IA2008R	Rps1k	MS [4]	35.5	35.2	35.8	16.8	17.0	16.8
2488	S	—	—	—	37.2	—	—	16.4
EX-640	S	—	—	—	37.1	—	—	16.4
PB-235X	S	—	—	—	37.3	—	—	16.7
IA2022	S	MS [5]	—	35.4	36.1	—	17.5	16.8
K-2535+	S	—	—	—	37.2	—	—	16.6
J876	S	—	—	—	35.5	—	—	17.1
DSR-246/STS	S	S [5]	—	34.9	35.5	—	17.1	16.5
PS 2413	S	—	—	—	37.2	—	—	16.7
PB-SP20	S	—	—	—	36.7	—	—	16.3
PB-SP23	S	—	—	—	35.8	—	—	16.7

Table11A. Characteristics of 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; 1995-97.

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

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

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

[6] Blend; information furnished by originator.

Variety	Maturity [1]	Date [2]	CR [3]	SCN [4]	PR [5]
PARKER	1.5	20	S	S	RPS1
D163N	1.6	20	—	S	S
FARIBAULT	1.9	21	MS	R	RPS1
FREEBORN	1.6	21	MR	MR	RPS1
BT2161CN	1.7	22	S	MR	RPS1K
EX 717	1.7	23	—	MR	S
9182	1.8	24	S	MR	S
PB-188N	1.8	25	—	MR	S
EX 719	1.9	26	—	MR	S
BELL	2.2	26	MS	MR	S
RS2297C	2.2	27	—	MR	RPS1C
PB-210N	2.0	27	—	MR	RPS1K
MARCUS 95	2.3	27	MS	S	RPS1K+6
K-2220SCN	2.0	27	--	MR	S
522CN BRAND	2.1	27	MS	MR	S
K-2120SCN	1.9	28	—	R	S
9234	2.2	28	MS	R	RPS1
IA2021	2.1	28	S	S	RPS1K
EX-342CN [6]	1.8	28	—	MR	S
J770CN	2.0	29	—	S	S
CX235C	2.3	29	—	MR	S
1882	1.7	29	MS	MR	S
PB-215N	2.1	29	—	S	S
K-2444SCN	2.2	29	—	MR	S
NEWTON	2.4	29	MS	R	S
IA2008R	2.1	30	MS	S	RPS1K
IA2036	2.1	30	MS	S	S

Table 11B. Yields in bushels per acre of 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, 1995-97.

Note Key:

[1] Blend; information furnished by originator.

Variety	Company Name	Infested Yield			Noninfested Yield		
		1995-97	1996-97	1997	1995-97	1996-97	1997
PARKER	MINN. A.E.S.	39	38	42	49	46	43
D163N	GARST	—	—	41	—	—	42
FARIBAULT	MINN. A.E.S.	39	42	46	46	43	44
FREEBORN	MINN. A.E.S.	40	40	46	46	44	44
BT2161CN	ZILLER	—	43	47	—	47	46
EX 717	DEKALB	—	—	49	—	—	45
9182	PIONEER	—	43	50	—	47	48
PB-188N	PRAIRIE BRAND	—	—	51	—	—	50
EX 719	DEKALB	—	—	50	—	—	48
BELL	ILLINOIS A.E.S.	39	38	46	43	50	42
RS2297C	RENK	—	—	53	—	—	50
PB-210N	PRAIRIE BRAND	—	—	50	—	—	50
MARCUS 95	IOWA A.E.S.	44	44	49	52	49	51
K-2220SCN	KRUGER	—	46	49	—	50	50
522CN BRAND	LATHAM	42	41	47	46	44	46
K-2120SCN	KRUGER	—	—	54	—	—	49
9234	PIONEER	—	45	51	—	45	48
IA2021	IOWA A.E.S.	45	46	51	52	49	49
EX-342CN [1]	LATHAM	—	—	49	—	—	49
J770CN	JACOBSEN	—	—	52	—	—	49
CX235C	DEKALB	—	—	52	—	—	50
1882	STINE	—	46	51	—	49	50
PB-215N	PRAIRIE BRAND	—	—	50	—	—	49
K-2444SCN	KRUGER	—	46	49	—	47	48
NEWTON	IOWA A.E.S.	35	34	40	37	35	40
IA2008R	IOWA A.E.S.	—	42	49	—	50	51
IA2036	IOWA A.E.S.	—	—	48	—	—	47
LSD 20%		1	1	2	1	1	2

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	