



# CORN

## Silage

The Minnesota Hybrid Corn Silage Evaluation Program was initiated to evaluate corn hybrids intended for use as silage and provide unbiased forage yield and quality information. The program is financed in part by entry fees from private seed companies that enter hybrids for testing.

### Test Sites

The 1999 trials were conducted at Rosemount and Waseca. Locations and maturities are categorized as follows:

#### Southern Zone: Waseca

*Early maturity group* – Hybrids rated 105 day Relative Maturity (RM) and earlier.

*Late maturity group* – Hybrids rated later than 105 day RM.

#### Central Zone: Rosemount

*Early maturity group* – Hybrids rated earlier than 100 day RM.

*Late maturity group* – Hybrids rated 100 day RM or later.

### Test Procedure

**Design:** Plots were established at Waseca and Rosemount in randomized block designs with four replications. Hybrids were planted at a 33,000-seeds-per-acre seeding rate with 30-inch row spacing. Standard check hybrids were included to represent the RM groups at each location.

**Harvesting:** Plots were harvested and herbage sampled for yield and forage quality determination for each RM group. The target maturity was whole-plant moisture content of 60% to 65%. Harvest at Waseca was on September 10 for the Early RM group and September 16 for the Late RM group. Harvest at Rosemount was on September 9 for the Early RM group and September 17 for the Late RM group. After grain maturation, two rows adjacent to those sampled for silage were harvested for grain and yields adjusted to 15.5% moisture.

### Test Results

Whole-plant dry matter yields (DM), silage yields, moisture content, grain yields taken after physiological maturity, and crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (NDF), and in vitro digestive dry matter (IVDDM) concentrations are given for entries in each RM group. Means and least significant difference (LSD) statistical figures are given for each RM group and averaged across locations. Hybrids are ranked by average moisture content, they differ in dry matter, silage and grain yields. ADF and NDF are negative indicators of forage digestibility and intake respectively. Lower ADF and NDF numbers are related to better animal performance. IVDDM is a laboratory test to estimate digestibility in ruminant livestock.

### Moisture, yield and quality traits for Early relative maturity corn hybrids at Waseca, 1999.

| Brand             | Hybrid       | Yield <sup>1</sup> |             |           |               | Concentration, Percent <sup>2</sup> |     |     |       |
|-------------------|--------------|--------------------|-------------|-----------|---------------|-------------------------------------|-----|-----|-------|
|                   |              | Moisture, Percent  | Grain, bu/a | DM, ton/a | Silage, ton/a | CP                                  | ADF | NDF | IVDDM |
| Dahlco            | DS 348wx     | 52.4               | 162         | 8.8       | 18.6          | 6.7                                 | 26  | 44  | 68    |
| Mycogen           | TMF100       | 55.0               | 183         | 10.5      | 23.3          | 6.3                                 | 25  | 43  | 69    |
| Wensman           | W5378Bt      | 59.6               | 160         | 9.0       | 22.2          | 6.1                                 | 23  | 37  | 73    |
| Dairyland         | Stealth 1406 | 59.7               | 171         | 9.0       | 22.4          | 6.3                                 | 25  | 42  | 70    |
| Dahlco            | DS 5101wx    | 60.0               | 165         | 8.5       | 21.3          | 6.8                                 | 23  | 38  | 72    |
| Trelay            | 7004         | 60.1               | 166         | 9.3       | 23.3          | 6.7                                 | 23  | 38  | 73    |
| Trelay            | SP692        | 60.6               | 193         | 10.1      | 25.5          | 6.6                                 | 23  | 39  | 72    |
| Dahlco            | DS 8051      | 60.8               | 204         | 9.9       | 25.2          | 6.9                                 | 24  | 41  | 72    |
| Dairyland         | Stealth 1507 | 62.3               | 173         | 10.0      | 26.5          | 6.6                                 | 23  | 39  | 73    |
| Dairyland         | Stealth 1508 | 62.6               | 181         | 9.8       | 26.2          | 6.2                                 | 24  | 41  | 71    |
| Early RM Averages |              | 59.3               | 176         | 9.5       | 23.4          | 6.5                                 | 24  | 40  | 71    |
| LSD (0.05)        |              | 4.2                | 22          | 1.0       | 2.2           | NS                                  | 2   | 4   | 3     |

<sup>1</sup> DM yield is whole-plant yield at 100% dry matter. Silage yield is whole-plant yield at harvest moisture. Grain harvested Oct. 12, 1999, and adjusted to 15.5% moisture. <sup>2</sup> See "Test Results" text for description of concentration items.

**Moisture, yield and quality traits for Late relative maturity corn hybrids at Waseca, 1999.**

| Brand            | Hybrid  | Yield <sup>1</sup> |             |           |               | Concentration, Percent <sup>2</sup> |     |     |       |
|------------------|---------|--------------------|-------------|-----------|---------------|-------------------------------------|-----|-----|-------|
|                  |         | Moisture, Percent  | Grain, bu/a | DM, ton/a | Silage, ton/a | CP                                  | ADF | NDF | IVDDM |
| Pioneer          | 35R57   | 57.1               | 203         | 10.9      | 25.4          | 6.5                                 | 23  | 39  | 71    |
| Wensman          | W5359Bt | 59.6               | 186         | 9.1       | 22.6          | 7.1                                 | 24  | 40  | 70    |
| Golden Harvest   | H-2515  | 60.7               | 173         | 10.7      | 27.2          | 6.7                                 | 21  | 35  | 74    |
| Epley            | E2480   | 60.7               | 190         | 10.7      | 27.2          | 6.9                                 | 23  | 39  | 73    |
| Epley            | E499    | 60.9               | 188         | 9.8       | 25.0          | 6.4                                 | 23  | 39  | 73    |
| Cargill          | 6481FQ  | 64.0               | 175         | 9.3       | 25.8          | 7.1                                 | 22  | 37  | 73    |
| Garst            | 24X     | 64.6               | 189         | 10.0      | 28.2          | 7.0                                 | 25  | 42  | 70    |
| Late RM Averages |         | 61.1               | 186         | 10.1      | 25.9          | 6.8                                 | 23  | 39  | 72    |
| LSD (0.05)       |         | 2.8                | ns          | 1.0       | 2.4           | ns                                  | ns  | 4   | 3     |

<sup>1</sup> DM yield is whole-plant yield at 100% dry matter. Silage yield is whole-plant yield at harvest moisture. Grain harvested Oct. 12, 1999, and adjusted to 15.5% moisture. <sup>2</sup> See "Test Results" text for description of concentration items.

**Moisture, yield and quality traits for Early relative maturity corn hybrids at Rosemount, 1999.**

| Brand             | Hybrid       | Yield <sup>1</sup> |             |           |               | Concentration, Percent <sup>2</sup> |     |     |       |
|-------------------|--------------|--------------------|-------------|-----------|---------------|-------------------------------------|-----|-----|-------|
|                   |              | Moisture, Percent  | Grain, bu/a | DM, ton/a | Silage, ton/a | CP                                  | ADF | NDF | IVDDM |
| PWensman          | W5258Bt      | 60.7               | 186         | 9.8       | 25.0          | 6.9                                 | 22  | 37  | 73    |
| Heartland Hybrids | TH289        | 61.7               | 164         | 8.6       | 22.5          | 7.0                                 | 24  | 40  | 72    |
| Dekalb            | DK440        | 61.8               | 214         | 9.9       | 25.9          | 6.1                                 | 23  | 39  | 71    |
| Dairyland         | Stealth 1499 | 62.0               | 185         | 9.3       | 24.5          | 6.8                                 | 23  | 40  | 72    |
| Dairyland         | Stealth 1203 | 62.1               | 199         | 9.8       | 25.8          | 6.6                                 | 23  | 38  | 72    |
| Heartland Hybrids | TH295        | 62.8               | 190         | 10.2      | 27.3          | 6.6                                 | 26  | 44  | 69    |
| Dairyland         | Stealth 1297 | 63.0               | 183         | 10.1      | 27.2          | 6.7                                 | 23  | 38  | 73    |
| Kaltenberg        | K8098LF      | 63.2               | 177         | 9.9       | 26.8          | 6.9                                 | 23  | 39  | 72    |
| Dairyland         | DST 10212    | 63.5               | 171         | 10.2      | 27.9          | 6.2                                 | 25  | 42  | 71    |
| Dekalb            | DK477        | 63.6               | 189         | 9.5       | 26.2          | 6.5                                 | 24  | 41  | 71    |
| Dekalb            | DK493BtX     | 64.2               | 202         | 10.0      | 27.9          | 6.4                                 | 23  | 39  | 72    |
| Kaltenberg        | K8094LF      | 65.5               | 165         | 9.0       | 26.3          | 7.2                                 | 25  | 42  | 70    |
| Early RM Averages |              | 62.8               | 186         | 9.7       | 26.1          | 6.7                                 | 24  | 40  | 72    |
| LSD (0.05)        |              | 2.2                | 22          | ns        | 2.5           | ns                                  | ns  | 4   | ns    |

<sup>1</sup> DM yield is whole-plant yield at 100% dry matter. Silage yield is whole-plant yield at harvest moisture. Grain harvested Oct. 12, 1999, and adjusted to 15.5% moisture. <sup>2</sup> See "Test Results" text for description of concentration items.

**Names and addresses of companies participating in the 1999 hybrid corn silage trials.**

**Cargill**, P.O. Box 5645, Minneapolis, MN 55440

**Dahlco Seeds, Inc.**, 14730 15th St. SW, Cokato, MN 55321

**Dairyland Seed Company, Inc.**, P.O. Box 958, West Bend, WI 53095-0958

**Epley Brothers Hybrids**, 22494 Yale Avenue, P.O. Box 310, Shell Rock, IA 50670

**Garst Seed Company**, 2369 330th St., P.O. Box 500, Slater, IA 50244

**Heartland Hybrids**, P.O. Box J, Dassel, MN 55325

**J.C. Robinson Seed Company**, 100 J.C. Robinson Boulevard, P.O. Box A, Waterloo, NE 68069

**Kaltenberg Seeds**, 5506 State Hwy 19, P.O. Box 278, Waunakee, WI 53597

**Monsanto**, 3100 Sycamore Road, De Kalb, IL 60115

**Trelay Seed Company**, 11623 Hwy 80, Livingston, WI 53554-9799

**Wensman Seed Company**, P.O. Box 190, Wadena, MN 56482

**Moisture, yield and quality traits for Late relative maturity corn hybrids at Rosemount, 1999.**

| Brand             | Hybrid       | Yield <sup>1</sup> |             |           |               | Concentration, Percent <sup>2</sup> |     |     |       |
|-------------------|--------------|--------------------|-------------|-----------|---------------|-------------------------------------|-----|-----|-------|
|                   |              | Moisture, Percent  | Grain, bu/a | DM, ton/a | Silage, ton/a | CP                                  | ADF | NDF | IVDDM |
| Dairyland         | Stealth 1203 | 57.2               | 189         | 10.3      | 24.2          | 5.9                                 | 24  | 41  | 70    |
| Wensman           | W5308Bt      | 59.2               | 189         | 9.0       | 22.1          | 5.8                                 | 25  | 40  | 72    |
| Mycogen           | TMF100       | 59.5               | 159         | 10.6      | 26.2          | 5.6                                 | 26  | 43  | 69    |
| Trelay            | 5700         | 60.5               | 198         | 10.4      | 26.2          | 6.3                                 | 26  | 42  | 71    |
| Heartland Hybrids | TH301        | 60.5               | 174         | 9.9       | 25.0          | 5.4                                 | 27  | 44  | 70    |
| Kaltenberg        | K8104LF      | 60.6               | 149         | 9.3       | 23.5          | 6.3                                 | 25  | 42  | 70    |
| Dairyland         | Stealth 1501 | 60.8               | 183         | 10.6      | 27.1          | 6.2                                 | 25  | 41  | 71    |
| Cargill           | 3711FQ       | 61.5               | 172         | 10.1      | 26.2          | 5.9                                 | 24  | 41  | 70    |
| Heartland Hybrids | TH305        | 62.9               | 183         | 10.8      | 29.1          | 6.2                                 | 24  | 41  | 72    |
| Trelay            | SP692        | 63.3               | 212         | 10.7      | 29.2          | 6.2                                 | 23  | 37  | 74    |
| Golden Harvest    | H-8250       | 63.7               | 201         | 10.7      | 29.5          | 6.2                                 | 24  | 39  | 73    |
| Late RM Averages  |              | 60.9               | 183         | 10.2      | 26.2          | 6.0                                 | 25  | 41  | 71    |
| LSD (0.05)        |              | 3.4                | ns          | ns        | 2.1           | 0.6                                 | ns  | ns  | 3     |

<sup>1</sup> DM yield is whole-plant yield at 100% dry matter. Silage yield is whole-plant yield at harvest moisture. Grain harvested Oct. 12, 1999, and adjusted to 15.5% moisture. <sup>2</sup> See "Testing Results" text for description of concentration items.

## Forage, grass, oilseed and small-grain organizations

*These organizations work in many ways in support of the commodities they represent and to provide opportunities to their members. Contact them directly for specific information about their roles and services.*

Minnesota Association of Wheat Growers and Minnesota Wheat Research and Promotion Council  
2600 Wheat Drive  
Red Lake Falls, MN 56750  
Phone: 218-253-4311  
Fax: 218-253-4320  
E-mail: [mnwheat@redlakefalls.polaristel.net](mailto:mnwheat@redlakefalls.polaristel.net)  
Web Address: <http://www.smallgrains.org>

Minnesota Approved Seed Conditioners and Marketing Association  
P.O. Box 303  
Argyle, MN 56713  
Phone: 218-437-6638  
Fax: 218-437-6392

Minnesota Canola Council  
1306 West County Road E, #109  
St. Paul, MN 55112  
Phone: 651-638-9883  
Fax: 651-638-0756

Minnesota Barley Growers Association and Minnesota Barley Research and Promotion Council  
2600 Wheat Drive  
Red Lake Falls, MN 56570  
Phone: 218-253-4311  
Fax: 218-253-4320  
E-mail: [mnbarley@redlakefalls.polaristel.net](mailto:mnbarley@redlakefalls.polaristel.net)

Minnesota Corn Growers Association and Minnesota Corn Research and Promotion Council  
738 First Avenue East  
Shakopee, MN 55378  
Phone: 612-233-0333  
Fax: 612-233-0420

Minnesota Crop Improvement Association  
1900 Hendon Avenue  
St. Paul, MN 55108  
Phone: 612-625-7766  
Fax: 612-625-3748  
E-mail: [beilx001@gold.tc.umn.edu](mailto:beilx001@gold.tc.umn.edu)  
Web Address: <http://www.mncia.org>

Minnesota Forage and Grassland Council  
411 Borlaug Hall  
1991 Buford Circle  
St. Paul, MN 55108  
Phone: 651-436-3930  
Fax: 651-436-7210  
E-mail: [mfgc@coafes.umn.edu](mailto:mfgc@coafes.umn.edu)

Minnesota Seed Producers and Promotion Association  
Mac Ehrhardt, Secretary  
P.O. Box 127  
Albert Lea, MN 56007  
Phone: 507-373-3161

Minnesota Soybean Growers Association and Minnesota Soybean Research and Promotion Council  
360 Pierce Avenue  
Suite #110  
North Mankato, MN 56003  
Phone: 507-388-1635  
Fax: 507-388-6751  
Web address: <http://www.mnsoybean.org>

Northern Minnesota Bluegrass Growers Association  
31154 430th Avenue  
Roseau, MN 56751-8413  
Phone 218-463-2119

# Grain

## Test Locations

Test zones, locations and maturities are as follows,

**Southern Zone,** Lamberton, Waseca and Plainview

*Early Maturity Trial* - 105 Relative Maturity (RM) and earlier

*Late Maturity Trial* - 110 and 115 RM

**Central Zone,** Morris and Rosemount

*Early Maturity Trial* - 95 RM and earlier

*Late Maturity Trial* - 100 through 105 RM

**Northern Zone,** Staples and Rothsay

All entries 97 RM and earlier

## Testing Procedure Entries,

Each corn seed company could enter up to six hybrids per zone. Entries in each trial were based on the Relative Maturity (RM) provided by the company. The University of Minnesota Corn Testing Committee could also choose and enter hybrids in each test, for this reason there may be more than six hybrids for a company in a test.

## Presentation of Data

Yields are given for individual locations along with yields and harvest moisture contents averaged across locations for 1999.

Hybrids are ranked within a maturity group by moisture content averaged across locations for 1999.

## Least Significant Difference

We show LSD values with a 0.2 probability level which means that when two hybrids differ in yield by the LSD value or more one can be 80% confident that the two hybrids differ in yield potential. The higher yielding one is the better hybrid from the yield standpoint. If the yield difference between two hybrids is less than the LSD, the two hybrids probably do not differ significantly in yield potential.

## How to Use the Results

The best indication of performance next year comes from the performance shown in the multiple location yield column. Yields from individual locations are given, but more emphasis should be given to the multiple location yield data. Ranking of hybrids on the basis of yield from high to low may change from location to location.

## Names and addresses of companies participating in the 1999 trials.

**Agripro Seeds Inc.,** Box 250, Brookings, SD 57006

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

**Anderson Seeds,** Rt. 3, Box 94, St. Peter, MN 56082

**Brown Seed Farms Inc.,** N1279 530th St., Bay City, WI 54723

**Cargill Hybrid Seeds,** Box 5645, Minneapolis, MN 55440

**Dahlco Seeds,** 14730 15Th St. SW, Cokato, MN 55321

**Dahlman Seed Co.,** 73504-200th St., Dassel, MN 55325

**Dairyland Seed Co., Inc.** (Stealth, DST), Box 958, West Bend, WI 53095

**Monsanto Co.** (DeKalb, Asgrow), 3100 Sycamore Rd., DeKalb, IL 60115

**Epley Bros. Hybrids, Inc.,** 22494 Yale Ave., Shell Rock, IA 50670

**Fontanelle Hybrids,** Rt. 1, Box 18, Nickerson, NE 68044

**Garst Seed Co.,** 3469 330th St., Box 500, Slater, IA

**Interstate Payco Seed Co.,** Box 338, West Fargo, ND 58078

**Hyland Seeds,** Blenheim, Ontario, Candada NOP 1A0

**J.C. Robinson Seed Co.** (Golden Harvest), 100 Robinson Blvd. Waterloo, NE 69069

**Jung Farms Inc.,** 341 So. High St., Randolph, WI 53956

**Kaltenberg Seed Farms, Inc.,** 5506 Hwy 19, Waunakee, WI 53597

**Kruger Seed Co.,** Box A, Hwy 20 East, Dike, IA 50624

**KSC/Challenger Seed Co.,** Box A, Dike, IA 50624

**L.G. Seeds Inc.,** 4001 N. War Memorial Dr., Peoria, IL 61614

**Mallard Seed Co. Inc.,** 311 West Broadway, Plainview MN 55964

**Mycogen Plant Sciences,** Box 21428 1340 Corporate Center, St. Paul, MN 55121-1428

**NC+,** Box 4408, Lincoln, NE 68504

**NetSeeds Inc.,** 9001 Hickman Rd, Johnston, IA 50131

**Novartis Seeds** (NK Brand), Box 959, Minneapolis, MN 55440-0959

**Pioneer Hi-Bred International, Inc.,** 130 SE Willmar Ave, Willmar, MN 56201

**Ramy International Ltd,** 1329 N Riverfront Dr., Mankato, MN 56001

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

**Renze Hybrids, Inc.,** RR 3, Box 235, Carroll, IA 51401

**Sand Seed Service,** Box 648, 4765 Hwy 143, Marcus, IA 51035

**Seeds 2000,** Box 200 Breckenridge, MN 56520

**Terning Seeds Inc.,** 15365 60th St. SW. Cokato, MN 55321

**Top Farm Hybrids,** Box 850, Cokato, MN 55321

**Trelay, Inc.,** RR 1, Livingston, WI 53554

**United Suppliers, Inc.,** 30473 260th St., Box 538, Eldora IA 50627

**Wensman Seed Co.,** Box 190, Wadena, MN 56482

However, high-yielding hybrids at one location usually are high-yielding hybrids at another location and the multiple-location average is the best predictor of yield performance next year.

## Corn Planting Rate and Date

Bushel Weight, Pounds .....56  
Planting Rate, Seeds/Acre .....33,000  
Planting Date.....April 15 - May 5

**Individual trial information, 1999.**

| Location  | Cooperators                  | Previous Crop | Planting Date | Harvest Dates | Tillage           | Soil Tests |    |     | Fertilizer Amount <sup>1</sup> and Time Applied | Herbicides and Application |
|-----------|------------------------------|---------------|---------------|---------------|-------------------|------------|----|-----|---|----------------------------|
|           |                              |               |               |               |                   | PH         | P  | K   |   |                            |
| Lamberton | Steve Quiring<br>Paul Porter | Soybean       | Apr 30        | Oct 8         | Field Cultivator  | 6.0        | 39 | 187 | 150-0-0 fall                                    | Frontier,PPI               |
|           |                              |               |               |               | One pass          |            |    |     |   | Hornet,Clarity,Early Post  |
| Waseca    | Tom Hoverstad                | Soybean       | Apr 28        | Oct 10        | Fall chisel       | 6.8        | 14 | 195 | 0-150-0 fall                                    | DoublePlay,PPI             |
|           |                              |               |               |               | Spring field cult |            |    |     | 140-0-0 spring                                  | Accent Gold,Post           |
| Plainview | Bruce Ihrke                  | Soybean       | Apr 29        | Oct 28        | Fall chisel       | 7.0        | 68 | 164 | 140-0-0   | Dual,PPI                   |
|           |                              |               |               |               | Spring field cult |            |    |     |   | Accent Gold,Post           |
| Morris    | George Nelson                | Wheat         | May 20        | Oct 21        | Fall chisel       | 7.9        | 16 | 243 | 120-46-60 fall                                  | Surpass,Pre                |
|           |                              |               |               |               | Spring field cult |            |    |     |   | Hornet,Post                |
| Rosemount | Jerry Holz                   | Soybean       | May 10        | Oct 29        | Fall chisel       | -          | -  | -   | 125-0-30 spring                                 | Lasso,Pre                  |
|           |                              |               |               |               | Spring field cult |            |    |     |   | Accent + Buctril,Post      |
| Staples   | Mel Wiens                    | Corn          | May 17        | Oct 19        | Plow              | -          | -  | -   | 210-10-60 spring                                | Harness + Bladex,Pre       |
| Rothsay   | Troy Larson                  | Wheat         | May 14        | Oct 20        | Fall chisel       | -          | -  | -   | 80-80-70  | DoublePlay,PPI             |
|           |                              |               |               |               | Spring field cult |            |    |     |   | Buctril-atrazine,Post      |

<sup>1</sup> Pounds of N, P and K, respectively. <sup>2</sup> Not available.

**Early maturity hybrids, southern locations, 1999.**

| Source / Brand                   | Hybrid     | RM  | Yield, Bushels/Acre at |           |        | Average Across Locations |            |
|----------------------------------|------------|-----|------------------------|-----------|--------|--------------------------|------------|
|                                  |            |     | Lamberton              | Plainview | Waseca | Bu/Acre                  | % Moisture |
| <b>97 RM and earlier hybrids</b> |            |     |                        |           |        |                          |            |
| Dekalb                           | DK477      | 97  | 183                    | 199       | 198    | 193                      | 15.0       |
| KSC/Challenger                   | K9896      | 93  | 182                    | 203       | 195    | 193                      | 15.2       |
| Viking                           | 7970       | 96  | 172                    | 212       | 181    | 188                      | 15.5       |
| KSC/Challenger                   | Ex. 2098   | 95  | 163                    | 203       | 177    | 181                      | 15.5       |
| Brown                            | 4641       | 97  | 195                    | 198       | 188    | 193                      | 15.7       |
| Wensman                          | W 5258 Bt  | 94  | 167                    | 216       | 175    | 186                      | 15.8       |
| Wensman                          | MAX 127    | 97  | 178                    | 195       | 188    | 187                      | 16.0       |
| Jung                             | 2488A      | 97  | 171                    | 224       | 176    | 190                      | 17.0       |
| Kruger                           | K-9898+    | 95  | 170                    | 220       | 189    | 193                      | 17.2       |
| 97 RM and earlier averages       |            |     | 176                    | 208       | 185    | 190                      | 15.9       |
| <b>98 to 102 RM hybrids</b>      |            |     |                        |           |        |                          |            |
| AgriPro                          | AP 9313    | 100 | 169                    | 194       | 188    | 184                      | 15.1       |
| Dahlman                          | 1699       | 100 | 195                    | 214       | 183    | 197                      | 15.2       |
| Dekalb                           | DK493BtX   | 99  | 194                    | 212       | 201    | 202                      | 15.3       |
| Epley                            | E1160      | 98  | 175                    | 205       | 181    | 187                      | 15.3       |
| Wensman                          | W 5308Bt   | 99  | 169                    | 212       | 176    | 186                      | 15.3       |
| Kaltenberg                       | K4809      | 100 | 178                    | 219       | 187    | 194                      | 15.5       |
| Cargill                          | 4021Bt     | 100 | 170                    | 210       | 181    | 187                      | 15.5       |
| Jung                             | 6655RR     | 100 | 158                    | 210       | 184    | 184                      | 15.6       |
| NK brand                         | NX 4217    | 100 | 169                    | 205       | 180    | 185                      | 15.6       |
| Top Farm                         | TFsx 2201  | 101 | 178                    | 208       | 189    | 192                      | 15.7       |
| High-Cycle                       | HC 7534 RR | 100 | 174                    | 206       | 176    | 185                      | 15.7       |
| Wensman                          | W 5319Bt   | 101 | 169                    | 204       | 189    | 187                      | 15.7       |
| Trelay                           | 5700       | 98  | 177                    | 194       | 182    | 184                      | 15.8       |
| Anderson Seeds                   | 6004RR     | 100 | 163                    | 207       | 185    | 185                      | 15.8       |
| Dekalb                           | DK520RR    | 102 | 197                    | 227       | 199    | 208                      | 15.8       |
| Dekalb                           | DK507      | 100 | 185                    | 210       | 175    | 190                      | 16.0       |
| Jung                             | 2440WX     | 99  | 173                    | 197       | 191    | 187                      | 16.1       |
| Dekalb                           | DK525      | 102 | 187                    | 232       | 220    | 213                      | 16.1       |
| Mycogen                          | 2525       | 100 | 166                    | 207       | 181    | 184                      | 16.2       |
| Kruger                           | K-9902Bt   | 99  | 176                    | 199       | 178    | 184                      | 16.2       |
| LG Seeds                         | LG 2484    | 99  | 175                    | 199       | 182    | 185                      | 16.3       |

| Source / Brand               | Hybrid       | RM  | Yield, Bushels/Acre at |           |        | Average          |            |
|------------------------------|--------------|-----|------------------------|-----------|--------|------------------|------------|
|                              |              |     | Lamberton              | Plainview | Waseca | Across Locations |            |
|                              |              |     |                        |           |        | Bu/Acre          | % Moisture |
| Top Farm                     | TFsx 2100    | 102 | 187                    | 203       | 175    | 189              | 16.3       |
| Kruger                       | K-9802RR     | 99  | 171                    | 204       | 189    | 188              | 16.4       |
| Kaltenberg                   | K5005        | 100 | 178                    | 201       | 173    | 184              | 16.4       |
| Mycogen                      | 2544         | 101 | 164                    | 182       | 163    | 170              | 16.4       |
| Dairyland Stealth            | 1401         | 100 | 168                    | 207       | 183    | 186              | 16.5       |
| Sands                        | SOI 9027     | 100 | 182                    | 205       | 184    | 190              | 16.5       |
| Anderson Seeds               | 6002         | 102 | 186                    | 200       | 186    | 191              | 16.6       |
| Asgrow                       | RX481        | 101 | 174                    | 198       | 193    | 189              | 16.6       |
| Jung                         | 6540Bt       | 101 | 176                    | 204       | 185    | 189              | 16.6       |
| Top Farm                     | TFsx 105 Bt  | 102 | 181                    | 211       | 203    | 198              | 16.6       |
| Golden Harvest               | H-7798Bt     | 102 | 164                    | 192       | 169    | 175              | 16.7       |
| Jung                         | 2561         | 102 | 176                    | 196       | 175    | 183              | 16.7       |
| Dahlman                      | D102Bt       | 102 | 186                    | 208       | 182    | 192              | 16.7       |
| High-Cycle                   | HC 7529Bt    | 102 | 196                    | 204       | 230    | 210              | 16.8       |
| Sands                        | SOI 9009     | 100 | 163                    | 218       | 196    | 193              | 16.9       |
| Anderson Seeds               | 6002Bt       | 102 | 179                    | 196       | 183    | 186              | 16.9       |
| Fontanelle                   | 4218         | 102 | 191                    | 183       | 178    | 184              | 16.9       |
| AgriPro                      | AP 9355 Bt   | 102 | 206                    | 205       | 206    | 205              | 17.0       |
| Viking                       | 6901         | 100 | 175                    | 200       | 178    | 184              | 17.0       |
| Kruger                       | K-9903Bt     | 100 | 199                    | 202       | 220    | 207              | 17.0       |
| NC+                          | 1799         | 100 | 159                    | 209       | 186    | 185              | 17.0       |
| Renk                         | RK606        | 100 | 176                    | 210       | 208    | 198              | 17.0       |
| Epley                        | E1470 Bt     | 102 | 169                    | 197       | 172    | 179              | 17.0       |
| Brown                        | 5341         | 102 | 179                    | 223       | 152    | 185              | 17.1       |
| Trelay                       | 5600         | 98  | 175                    | 208       | 202    | 195              | 17.2       |
| Mycogen                      | 2566         | 102 | 167                    | 202       | 167    | 179              | 17.2       |
| Fontanelle                   | 4008         | 100 | 168                    | 189       | 175    | 177              | 17.2       |
| Kaltenberg                   | K4907        | 100 | 194                    | 211       | 173    | 192              | 17.3       |
| AgriPro                      | AP 9368      | 102 | 188                    | 194       | 160    | 181              | 17.4       |
| Dairyland Stealth            | 1108         | 102 | 188                    | 208       | 182    | 193              | 17.5       |
| Pioneer                      | 36R10        | 101 | 188                    | 211       | 203    | 200              | 17.6       |
| LG Seeds                     | LG 2499      | 101 | 180                    | 217       | 201    | 199              | 17.7       |
| Kruger                       | K-9905       | 102 | 174                    | 225       | 177    | 192              | 17.8       |
| Wensman                      | W 5329Bt     | 102 | 194                    | 208       | 200    | 201              | 17.8       |
| KSC/Challenger               | 9905Bt       | 102 | 152                    | 197       | 173    | 174              | 18.3       |
| Kruger                       | K-2002       | 99  | 161                    | 196       | 165    | 174              | 18.5       |
| Pioneer                      | 36B08        | 102 | 189                    | 205       | 200    | 198              | 18.9       |
| 98 to 102 RM averages        |              |     | 178                    | 205       | 185    | 189              | 16.6       |
| <b>103 to 105 RM hybrids</b> |              |     |                        |           |        |                  |            |
| Kaltenberg                   | K5788 RR     | 105 | 169                    | 207       | 183    | 186              | 15.6       |
| Garst                        | 8707         | 103 | 182                    | 216       | 193    | 197              | 15.7       |
| Jung                         | 2510A        | 103 | 199                    | 194       | 209    | 201              | 15.8       |
| Top Farm                     | TFsx 8103 RR | 103 | 154                    | 215       | 176    | 182              | 16.0       |
| Viking                       | 5000         | 103 | 171                    | 229       | 191    | 197              | 16.1       |
| Cargill                      | 4220Bt       | 105 | 192                    | 215       | 203    | 203              | 16.1       |
| NK brand                     | N 4640       | 103 | 169                    | 199       | 186    | 185              | 16.1       |
| Renk                         | RK648        | 103 | 187                    | 192       | 206    | 195              | 16.2       |
| Cargill                      | 4521Bt       | 105 | 180                    | 228       | 228    | 212              | 16.2       |
| Kaltenberg                   | K5707        | 105 | 165                    | 194       | 202    | 187              | 16.2       |
| Viking                       | Bt 5950      | 104 | 184                    | 214       | 219    | 206              | 16.5       |
| NC+                          | 2839         | 105 | 189                    | 206       | 199    | 198              | 16.6       |
| Renze                        | 8158Bt       | 105 | 184                    | 197       | 182    | 188              | 16.6       |

| Source / Brand                             | Hybrid       | RM  | Yield, Bushels/Acre at |           |        | Average          |            |
|--|--------------|-----|------------------------|-----------|--------|------------------|------------|
|  |              |     | Lamberton              | Plainview | Waseca | Across Locations |            |
|  |              |     |                        |           |        | Bu/Acre          | % Moisture |
| Jung                                       | 6616Bt       | 105 | 202                    | 206       | 209    | 206              | 16.7       |
| Mallard                                    | BT 2660      | 103 | 180                    | 197       | 185    | 187              | 16.7       |
| Dekalb                                     | DK539        | 103 | 187                    | 210       | 192    | 197              | 16.8       |
| NK brand                                   | NX 4616      | 105 | 193                    | 191       | 201    | 195              | 16.8       |
| Kruger                                     | Ex. 908      | 105 | 200                    | 239       | 209    | 216              | 16.8       |
| Renze                                      | 5208IP       | 105 | 168                    | 217       | 200    | 195              | 16.8       |
| Renk                                       | RK648Bt      | 105 | 177                    | 209       | 217    | 201              | 16.8       |
| Kaltenberg                                 | K5454Bt      | 103 | 183                    | 213       | 206    | 200              | 16.9       |
| Top Farm                                   | TFsx 7102 Bt | 103 | 180                    | 204       | 184    | 189              | 16.9       |
| Seeds 2000                                 | 3105         | 105 | 192                    | 208       | 181    | 194              | 16.9       |
| Garst                                      | 8608 Bt      | 105 | 188                    | 204       | 222    | 205              | 17.0       |
| Renze                                      | 6210         | 105 | 184                    | 207       | 191    | 194              | 17.0       |
| KSC/Challenger                             | EX 908A      | 105 | 198                    | 212       | 188    | 199              | 17.0       |
| Golden Harvest                             | H-8067Bt     | 104 | 186                    | 203       | 169    | 186              | 17.1       |
| Dairyland Stealth                          | 1504 Bt      | 104 | 202                    | 203       | 202    | 202              | 17.1       |
| Jung                                       | 2590         | 105 | 188                    | 201       | 207    | 199              | 17.1       |
| Dekalb                                     | DK537        | 103 | 197                    | 227       | 217    | 214              | 17.1       |
| Renze                                      | 6200         | 105 | 180                    | 186       | 183    | 183              | 17.1       |
| Dahlman                                    | D106Bt       | 105 | 183                    | 203       | 191    | 192              | 17.1       |
| Epley                                      | E 1510Bt     | 104 | 189                    | 205       | 207    | 200              | 17.2       |
| Seeds 2000                                 | 3103         | 103 | 176                    | 194       | 181    | 184              | 17.3       |
| Wensman                                    | W 5359Bt     | 105 | 165                    | 196       | 175    | 179              | 17.3       |
| Dekalb                                     | DK545BY      | 104 | 181                    | 235       | 215    | 210              | 17.3       |
| Trelay                                     | 6005         | 103 | 164                    | 214       | 197    | 191              | 17.3       |
| Kruger                                     | 9907RR       | 104 | 187                    | 206       | 190    | 194              | 17.4       |
| Kaltenberg                                 | K5808        | 105 | 193                    | 212       | 208    | 204              | 17.4       |
| Cargill                                    | 5212         | 105 | 199                    | 232       | 203    | 211              | 17.4       |
| KSC/Challenger                             | K-2008       | 105 | 196                    | 242       | 220    | 219              | 17.4       |
| Jung                                       | 2579         | 104 | 176                    | 202       | 190    | 189              | 17.5       |
| Top Farm                                   | TFsx 2202    | 104 | 163                    | 200       | 168    | 177              | 17.5       |
| Dairyland Stealth                          | 1406         | 105 | 190                    | 223       | 197    | 203              | 17.5       |
| Pioneer                                    | 36Y96        | 103 | 190                    | 206       | 178    | 192              | 17.5       |
| Epley                                      | E 1500       | 105 | 169                    | 210       | 192    | 190              | 17.6       |
| Dahlco                                     | X-8054       | 105 | 197                    | 233       | 201    | 210              | 17.6       |
| Trelay                                     | 7002         | 105 | 184                    | 223       | 190    | 199              | 17.8       |
| Sands                                      | SOI 9067     | 105 | 180                    | 208       | 208    | 199              | 17.8       |
| KSC/Challenger                             | K-9806B      | 103 | 209                    | 235       | 211    | 218              | 17.8       |
| Dekalb                                     | DK551BY      | 105 | 196                    | 236       | 229    | 220              | 17.9       |
| Pioneer                                    | 36D14        | 103 | 191                    | 226       | 204    | 207              | 18.0       |
| LG Seeds                                   | LG 2512      | 103 | 192                    | 207       | 196    | 198              | 18.1       |
| Viking                                     | R 6006       | 104 | 193                    | 232       | 183    | 202              | 18.1       |
| LG Seeds                                   | LG 2530      | 105 | 199                    | 203       | 193    | 198              | 18.2       |
| Sands                                      | SOI 9058     | 105 | 195                    | 225       | 201    | 207              | 18.4       |
| Top Farm                                   | TFsx 106 Bt  | 105 | 195                    | 185       | 193    | 191              | 18.5       |
| KSC/Challenger                             | K-9907Bt     | 104 | 180                    | 177       | 204    | 187              | 18.7       |
| Pioneer                                    | 35P12        | 104 | 207                    | 221       | 202    | 210              | 18.7       |
| KSC/Challenger                             | Ex. 006      | 103 | 185                    | 187       | 195    | 189              | 18.9       |
| Dairyland Stealth                          | 1507         | 105 | 213                    | 214       | 205    | 211              | 19.3       |
| 103 to 105 RM averages                     |              |     | 186                    | 210       | 198    | 198              | 17.2       |
| Southern locations early maturity averages |              |     | 181                    | 208       | 191    | 194              | 16.8       |
| LSD(0.20)                                  |              |     | 12                     | 14        | 16     | 8                | 0.5        |

**Late maturity hybrids, southern locations, 1999.**

| Source / Brand                            | Hybrid       | RM  | Yield, Bushels/Acre at |           |        | Average                     |            |
|---|--------------|-----|------------------------|-----------|--------|-----------------------------|------------|
|   |              |     | Lamberton              | Plainview | Waseca | Across Locations<br>Bu/Acre | % Moisture |
| <b>Later than 105 RM hybrids</b>          |              |     |                        |           |        |                             |            |
| Wensman                                   | W 5378Bt     | 106 | 165                    | 213       | 187    | 188                         | 15.7       |
| NetSeeds                                  | NET 1040     | 108 | 183                    | 203       | 210    | 199                         | 16.4       |
| Mallard                                   | BT 2700      | 106 | 196                    | 203       | 221    | 207                         | 16.6       |
| Kaltenberg                                | K6006 IMI    | 106 | 146                    | 196       | 166    | 169                         | 16.8       |
| Dairyland Stealth                         | 1506 Bt      | 106 | 171                    | 214       | 207    | 197                         | 17.0       |
| Anderson Seeds                            | 4028         | 106 | 183                    | 226       | 206    | 205                         | 17.1       |
| United Suppliers                          | US C1079RR   | 107 | 187                    | 228       | 176    | 197                         | 17.4       |
| Renze                                     | 6229         | 106 | 151                    | 191       | 197    | 180                         | 17.5       |
| Asgrow                                    | RX601YG      | 110 | 194                    | 245       | 203    | 214                         | 17.6       |
| NC+                                       | 3289         | 110 | 171                    | 204       | 226    | 200                         | 17.6       |
| Viking                                    | 4004         | 107 | 187                    | 210       | 157    | 185                         | 17.7       |
| Renk                                      | RK706Bt      | 109 | 158                    | 185       | 175    | 173                         | 17.7       |
| Renk                                      | RK706        | 107 | 156                    | 196       | 183    | 178                         | 17.7       |
| Top Farm                                  | TFsx 2111    | 110 | 173                    | 208       | 203    | 195                         | 17.8       |
| Mycogen                                   | 2657         | 106 | 195                    | 239       | 220    | 218                         | 17.8       |
| Viking                                    | 4020         | 107 | 177                    | 205       | 198    | 193                         | 17.9       |
| Anderson Seeds                            | 4000A        | 106 | 168                    | 200       | 190    | 186                         | 17.9       |
| Anderson Seeds                            | 4000Bt       | 106 | 167                    | 192       | 177    | 179                         | 18.0       |
| Renze                                     | 8248Bt       | 108 | 181                    | 194       | 175    | 183                         | 18.1       |
| Mycogen                                   | 2652         | 106 | 183                    | 217       | 204    | 201                         | 18.2       |
| Prairie Gold                              | PG 1589      | 109 | 173                    | 222       | 170    | 188                         | 18.2       |
| Brown                                     | 6341         | 107 | 180                    | 217       | 190    | 196                         | 18.2       |
| Pioneer                                   | 34G82        | 106 | 178                    | 260       | 225    | 221                         | 18.2       |
| United Suppliers                          | US C1069Bt   | 106 | 164                    | 194       | 195    | 184                         | 18.4       |
| Mallard                                   | UC 2682      | 106 | 190                    | 213       | 188    | 197                         | 18.5       |
| Top Farm                                  | TFsx 2104 Bt | 106 | 167                    | 181       | 172    | 173                         | 18.6       |
| Epley                                     | E 2480       | 110 | 193                    | 232       | 175    | 200                         | 19.1       |
| Renze                                     | 6260         | 109 | 197                    | 202       | 196    | 198                         | 19.2       |
| Golden Harvest                            | H-9095Bt     | 112 | 192                    | 236       | 244    | 224                         | 19.2       |
| Top Farm                                  | TFsx 2107    | 107 | 191                    | 207       | 194    | 197                         | 19.3       |
| Renk                                      | RK778        | 109 | 194                    | 232       | 194    | 207                         | 19.5       |
| NK Brand                                  | NX 5867      | 110 | 203                    | 234       | 216    | 218                         | 19.5       |
| United Suppliers                          | US C1099     | 109 | 204                    | 225       | 209    | 212                         | 19.5       |
| Renze                                     | 6239         | 108 | 163                    | 226       | 188    | 192                         | 19.6       |
| Prairie Gold                              | PG 1586      | 107 | 188                    | 213       | 177    | 193                         | 19.6       |
| Golden Harvest                            | H-8890Bt     | 111 | 202                    | 236       | 222    | 220                         | 19.8       |
| Garst                                     | 8600 BLT     | 106 | 163                    | 204       | 208    | 191                         | 20.7       |
| Southern locations late maturity averages |              |     | 179                    | 214       | 196    | 196                         | 18.2       |
| LSD(0.20)                                 |              |     | 12                     | 15        | 26     | 11                          | 0.6        |



**Early maturity hybrids, central locations, 1999.**

| Source / Brand                   | Hybrid    | RM | Yield, Bushels/Acre at |           | Average     |                      |
|----------------------------------|-----------|----|------------------------|-----------|-------------|----------------------|
|                                  |           |    | Morris                 | Rosemount | Across Bu/A | Locations % Moisture |
| <b>92 and earlier RM hybrids</b> |           |    |                        |           |             |                      |
| Dekalb                           | DK405     | 90 | 189                    | 198       | 194         | 16.0                 |
| Dahlco                           | X-8891    | 90 | 176                    | 189       | 182         | 16.9                 |
| Jung                             | 2370      | 89 | 178                    | 184       | 181         | 17.0                 |
| Dairyland Stealth                | 1289      | 90 | 182                    | 184       | 183         | 17.0                 |
| Dekalb                           | DK389BTY  | 88 | 178                    | 177       | 177         | 17.3                 |
| Epley                            | E1122     | 92 | 180                    | 183       | 182         | 17.4                 |
| Pioneer                          | 38K06     | 92 | 177                    | 183       | 180         | 17.5                 |
| Dahlman                          | 1488      | 90 | 184                    | 178       | 181         | 17.5                 |
| Dahlman                          | 1490      | 90 | 202                    | 172       | 187         | 17.9                 |
| Cargill                          | 2777      | 90 | 192                    | 183       | 188         | 17.9                 |
| Cargill                          | 2610      | 90 | 161                    | 175       | 168         | 18.0                 |
| Dekalb                           | DK427     | 92 | 196                    | 204       | 200         | 18.2                 |
| Prairie Gold                     | PG 1355   | 92 | 160                    | 168       | 164         | 18.2                 |
| Wensman                          | 5088Bt    | 85 | 176                    | 184       | 180         | 18.3                 |
| Wensman                          | W 5178Bt  | 91 | 168                    | 172       | 170         | 18.8                 |
| Wensman                          | MAX 78    | 90 | 173                    | 176       | 174         | 18.9                 |
| LG Seeds                         | LG 2411   | 91 | 199                    | 186       | 193         | 19.1                 |
| 92 RM and earlier averages       |           |    | 181                    | 182       | 181         | 17.7                 |
| <b>93 to 97 RM hybrids</b>       |           |    |                        |           |             |                      |
| Wensman                          | W 5258 Bt | 94 | 197                    | 193       | 195         | 17.4                 |
| Mallard                          | UC 414    | 95 | 166                    | 192       | 179         | 17.5                 |
| Payco                            | 457       | 95 | 185                    | 192       | 189         | 17.6                 |
| Dahlman                          | 1599      | 95 | 186                    | 203       | 195         | 17.7                 |
| Kaltenberg                       | K4508     | 96 | 195                    | 191       | 193         | 17.7                 |
| Anderson Seeds                   | 7525      | 95 | 194                    | 185       | 189         | 17.8                 |
| Garst                            | N7870     | 95 | 176                    | 180       | 178         | 17.8                 |
| Seeds 2000                       | 2951      | 95 | 190                    | 184       | 187         | 17.8                 |
| Dekalb                           | DK477     | 97 | 211                    | 199       | 205         | 17.8                 |
| LG Seeds                         | LG 2421   | 93 | 189                    | 166       | 178         | 18.0                 |
| Top Farm                         | TFsx 2196 | 96 | 184                    | 172       | 178         | 18.1                 |
| Garst                            | 8830      | 94 | 187                    | 194       | 191         | 18.1                 |
| Trelay                           | 4002      | 95 | 192                    | 185       | 189         | 18.2                 |
| Renk                             | RK546     | 95 | 208                    | 201       | 205         | 18.3                 |
| Terning                          | TS 8266   | 96 | 197                    | 211       | 204         | 18.3                 |
| KSC/Challenger                   | K9896     | 93 | 198                    | 204       | 201         | 18.4                 |
| Epley                            | E1130     | 95 | 202                    | 201       | 201         | 18.4                 |
| Wensman                          | MAX 007   | 93 | 187                    | 196       | 192         | 18.5                 |
| Dahlco                           | X-8931    | 93 | 182                    | 176       | 179         | 18.5                 |
| Garst                            | 8820      | 95 | 181                    | 179       | 180         | 18.5                 |
| Dekalb                           | DK440     | 94 | 214                    | 206       | 210         | 18.6                 |
| LG Seeds                         | LG 2442   | 95 | 183                    | 202       | 193         | 18.6                 |
| Kaltenberg                       | K4707     | 96 | 192                    | 191       | 192         | 18.7                 |
| Kaltenberg                       | K4606     | 95 | 204                    | 204       | 204         | 18.7                 |
| Pioneer                          | 38W36     | 93 | 188                    | 178       | 183         | 18.7                 |
| Kaltenberg                       | K3904     | 93 | 192                    | 181       | 186         | 18.8                 |
| Brown                            | 4680      | 97 | 194                    | 186       | 190         | 18.8                 |
| Hyland                           | HL 2507   | 95 | 181                    | 190       | 186         | 18.8                 |
| NK Brand                         | N 3030Bt  | 95 | 176                    | 197       | 187         | 18.8                 |
| Dahlco                           | 2394      | 94 | 211                    | 204       | 208         | 18.8                 |
| Pioneer                          | 38P06     | 95 | 186                    | 197       | 192         | 18.9                 |

| Source / Brand                            | Hybrid      | RM | Yield, Bushels/Acre at |           | Average |            |
|---|-------------|----|------------------------|-----------|---------|------------|
|   |             |    | Morris                 | Rosemount | Across  | Locations  |
|   |             |    |                        |           | Bu/A    | % Moisture |
| Hyland                                    | HL 2505     | 95 | 186                    | 204       | 195     | 19.0       |
| Renk                                      | RK569       | 97 | 206                    | 187       | 197     | 19.0       |
| Wensman                                   | MAX 127     | 97 | 205                    | 199       | 202     | 19.1       |
| Mycogen                                   | 2424        | 95 | 176                    | 175       | 175     | 19.2       |
| Jung                                      | 2436        | 94 | 193                    | 194       | 193     | 19.2       |
| Brown                                     | 4641        | 97 | 198                    | 200       | 199     | 19.2       |
| Dairyland Stealth                         | 1499        | 95 | 187                    | 184       | 186     | 19.4       |
| Garst                                     | N7801       | 97 | 190                    | 208       | 199     | 19.4       |
| LG Seeds                                  | LG 2473     | 96 | 182                    | 191       | 187     | 19.6       |
| Top Farm                                  | TFsx 795 Bt | 95 | 182                    | 172       | 177     | 19.7       |
| KSC/Challenger                            | Ex. 2098    | 95 | 191                    | 201       | 196     | 19.8       |
| Dairyland Stealth                         | 1297        | 95 | 186                    | 201       | 194     | 20.1       |
| Kruger                                    | K-9898+     | 95 | 206                    | 194       | 200     | 20.2       |
| Jung                                      | 2488A       | 97 | 187                    | 203       | 195     | 20.2       |
| Hyland                                    | HL 2521     | 95 | 194                    | 175       | 185     | 20.7       |
| Hyland                                    | HL 2614     | 95 | 192                    | 197       | 195     | 21.3       |
| 93 to 97 RM averages                      |             |    | 191                    | 192       | 192     | 18.8       |
| <b>98 and later RM hybrids</b>            |             |    |                        |           |         |            |
| Anderson Seeds                            | 6076        | 98 | 190                    | 203       | 196     | 18.3       |
| Epley                                     | E1160       | 98 | 194                    | 190       | 192     | 18.6       |
| Top Farm                                  | TFsx 2101   | 99 | 188                    | 190       | 189     | 18.8       |
| Wensman                                   | W 5308Bt    | 99 | 189                    | 205       | 197     | 19.0       |
| Pioneer                                   | 36F30       | 99 | 219                    | 200       | 210     | 19.2       |
| Garst                                     | 8766        | 99 | 203                    | 188       | 196     | 19.3       |
| Dekalb                                    | DK493BtX    | 99 | 213                    | 213       | 213     | 19.4       |
| Pioneer                                   | 37R71       | 98 | 188                    | 194       | 191     | 19.6       |
| Kruger                                    | K-9802RR    | 99 | 195                    | 198       | 197     | 20.1       |
| Trelay                                    | 5700        | 98 | 215                    | 214       | 215     | 20.4       |
| Trelay                                    | 5003        | 98 | 184                    | 186       | 185     | 20.5       |
| Trelay                                    | 5600        | 98 | 198                    | 212       | 205     | 20.6       |
| Kruger                                    | K-9902Bt    | 99 | 187                    | 195       | 191     | 21.1       |
| LG Seeds                                  | LG 2484     | 99 | 182                    | 190       | 186     | 21.9       |
| Kruger                                    | K-2002      | 99 | 186                    | 204       | 195     | 22.9       |
| 98 RM and later averages                  |             |    | 196                    | 199       | 197     | 20.0       |
| Central locations early maturity averages |             |    | 190                    | 191       | 190     | 18.8       |
| LSD(0.20)                                 |             |    | 13                     | 12        | 9       | 0.4        |

**Late maturity hybrids, central locations, 1999.**

| Source / Brand                     | Hybrid       | RM  | Yield, Bushels/Acre at |           | Average     |                      |
|------------------------------------|--------------|-----|------------------------|-----------|-------------|----------------------|
|                                    |              |     | Morris                 | Rosemount | Across Bu/A | Locations % Moisture |
| <b>102 and earlier RM hybrids</b>  |              |     |                        |           |             |                      |
| Kaltenberg                         | K4809        | 100 | 179                    | 194       | 187         | 18.8                 |
| Dairyland Stealth                  | 1496         | 100 | 184                    | 202       | 193         | 18.9                 |
| Terning                            | TS 8311      | 102 | 170                    | 125       | 147         | 19.0                 |
| Mallard                            | UC 585       | 100 | 181                    | 201       | 191         | 19.2                 |
| Cargill                            | 4021Bt       | 100 | 191                    | 211       | 201         | 19.3                 |
| Dahlman                            | 1699         | 100 | 170                    | 200       | 185         | 19.3                 |
| Top Farm                           | TFsx 2201    | 101 | 203                    | 192       | 198         | 19.4                 |
| Mallard                            | UC 595-A     | 100 | 198                    | 191       | 195         | 19.4                 |
| AgriPro                            | AP 9313      | 100 | 192                    | 201       | 196         | 19.5                 |
| Kaltenberg                         | K5005        | 100 | 186                    | 175       | 180         | 19.7                 |
| Kaltenberg                         | K4907        | 100 | 186                    | 212       | 199         | 19.8                 |
| Renk                               | RK659        | 100 | 165                    | 167       | 166         | 19.9                 |
| Dekalb                             | DK507        | 100 | 194                    | 192       | 193         | 20.2                 |
| Kruger                             | K-9903Bt     | 100 | 189                    | 219       | 204         | 20.3                 |
| Renk                               | RK606        | 100 | 195                    | 195       | 195         | 20.3                 |
| Seeds 2000                         | 3102RR       | 100 | 169                    | 189       | 179         | 20.3                 |
| Terning                            | TS 8322      | 102 | 177                    | 168       | 173         | 20.4                 |
| Terning                            | TS 8303      | 100 | 208                    | 208       | 208         | 20.5                 |
| Mycogen                            | 2544         | 101 | 159                    | 167       | 163         | 20.6                 |
| Mycogen                            | 2525         | 100 | 181                    | 193       | 187         | 20.7                 |
| Prairie Gold                       | PG 1532      | 102 | 180                    | 177       | 178         | 20.7                 |
| Renk                               | RK681        | 102 | 178                    | 173       | 175         | 20.8                 |
| Prairie Gold                       | PG 529 Bt    | 100 | 164                    | 186       | 175         | 20.8                 |
| AgriPro                            | AP 9355 Bt   | 102 | 193                    | 209       | 201         | 20.9                 |
| Pioneer                            | 36R10        | 101 | 198                    | 208       | 203         | 21.0                 |
| Dahlman                            | D102Bt       | 102 | 172                    | 207       | 189         | 21.0                 |
| Wensman                            | W 5319Bt     | 101 | 184                    | 198       | 191         | 21.1                 |
| Wensman                            | W 5329Bt     | 102 | 179                    | 173       | 176         | 21.1                 |
| Brown                              | 5341         | 102 | 178                    | 175       | 177         | 21.3                 |
| Top Farm                           | TFsx 2100    | 102 | 182                    | 193       | 188         | 21.3                 |
| Epley                              | E1470 Bt     | 102 | 189                    | 204       | 196         | 21.3                 |
| Dairyland Stealth                  | 1402         | 100 | 187                    | 181       | 184         | 21.4                 |
| Golden Harvest                     | H-7773Bt     | 102 | 192                    | 180       | 186         | 21.6                 |
| KSC/Challenger                     | Ex. 003      | 100 | 196                    | 204       | 200         | 21.7                 |
| Dekalb                             | DK520RR      | 102 | 208                    | 193       | 200         | 21.8                 |
| Dahlco                             | 2501         | 101 | 201                    | 188       | 195         | 22.3                 |
| Dairyland Stealth                  | 1404         | 102 | 190                    | 190       | 190         | 22.5                 |
| Hyland                             | HL 2626      | 100 | 184                    | 174       | 179         | 22.7                 |
| Golden Harvest                     | H-7798Bt     | 102 | 191                    | 183       | 187         | 22.8                 |
| Jung                               | 2561         | 102 | 176                    | 179       | 178         | 23.2                 |
| Garst                              | N8701Bt      | 102 | 179                    | 167       | 173         | 23.7                 |
| United Suppliers                   | US C1029Bt   | 102 | 189                    | 200       | 195         | 27.5                 |
| 102 RM and earlier hybrid averages |              |     | 185                    | 189       | 187         | 20.9                 |
| <b>103 and later RM hybrids</b>    |              |     |                        |           |             |                      |
| Epley                              | E 1485 RR    | 104 | 203                    | 191       | 197         | 18.5                 |
| Top Farm                           | TFsx 8103 RR | 103 | 186                    | 207       | 196         | 19.0                 |
| Jung                               | 2510A        | 103 | 206                    | 205       | 205         | 19.6                 |
| NK Brand                           | NX 4616      | 105 | 191                    | 183       | 187         | 19.7                 |
| Terning                            | TS 8333      | 103 | 188                    | 184       | 186         | 20.0                 |
| Garst                              | 8707         | 103 | 192                    | 202       | 197         | 20.3                 |

| Source / Brand                           | Hybrid     | RM  | Yield, Bushels/Acre at |           | Average |            |
|--|------------|-----|------------------------|-----------|---------|------------|
|  |            |     | Morris                 | Rosemount | Across  | Locations  |
|  |            |     |                        |           | Bu/A    | % Moisture |
| Kaltenberg                               | K5454Bt    | 103 | 178                    | 224       | 201     | 20.4       |
| Renk                                     | RK648      | 103 | 187                    | 215       | 201     | 20.7       |
| Garst                                    | 8608 Bt    | 105 | 197                    | 205       | 201     | 20.9       |
| Cargill                                  | 4521Bt     | 105 | 197                    | 217       | 207     | 22.2       |
| Epley                                    | E 1500     | 105 | 193                    | 204       | 198     | 22.3       |
| Golden Harvest                           | H-8063Bt   | 104 | 188                    | 204       | 196     | 22.5       |
| Golden Harvest                           | H-8067Bt   | 104 | 187                    | 192       | 190     | 22.7       |
| United Suppliers                         | US E1050   | 105 | 209                    | 196       | 202     | 22.7       |
| NetSeeds                                 | NET 1056   | 105 | 191                    | 209       | 200     | 23.8       |
| Jung                                     | 2579       | 104 | 182                    | 173       | 177     | 24.2       |
| Terning                                  | TS 8341 Bt | 104 | 200                    | 206       | 203     | 27.4       |
| 103 RM and later hybrid averages         |            |     | 193                    | 201       | 197     | 21.6       |
| Central locations late maturity averages |            |     | 187                    | 193       | 190     | 21.1       |
| LSD(0.20)                                |            |     | 13                     | 14        | 10      | 0.9        |

### **Northern Locations, 1999.**

| Source / Brand                   | Hybrid    | RM | Yield, Bushels/Acre at |         | Average |            |
|----------------------------------|-----------|----|------------------------|---------|---------|------------|
|                                  |           |    | Rothsay                | Staples | Across  | Locations  |
|                                  |           |    |                        |         | Bu/A    | % Moisture |
| <b>77 and earlier RM hybrids</b> |           |    |                        |         |         |            |
| NK Brand                         | NX 1107   | 75 | 149                    | 163     | 156     | 20.2       |
| Dairyland Stealth                | 1275      | 75 | 160                    | 14      | 153     | 24.2       |
| Proseed                          | EPW 76    | 76 | 149                    | 157     | 153     | 24.6       |
| 77 RM and earlier hybrid average |           |    | 153                    | 156     | 154     | 23.0       |
| <b>78 to 82 RM hybrids</b>       |           |    |                        |         |         |            |
| Pioneer                          | 39A26     | 80 | 169                    | 141     | 155     | 21.1       |
| Cargill                          | 1877      | 80 | 146                    | 154     | 150     | 21.6       |
| Proseed                          | EK 4828   | 82 | 153                    | 142     | 147     | 21.6       |
| Dairyland Stealth                | 1480      | 80 | 169                    | 166     | 168     | 21.6       |
| Top Farm                         | TFsx 2182 | 82 | 150                    | 167     | 158     | 21.6       |
| NK Brand                         | NX 2127   | 80 | 161                    | 196     | 179     | 21.8       |
| Mycogen                          | 2141      | 81 | 151                    | 143     | 147     | 22.1       |
| Wensman                          | 5018Bt    | 81 | 148                    | 182     | 165     | 22.1       |
| Jung                             | 2225      | 79 | 162                    | 167     | 164     | 22.1       |
| Renk                             | RK133     | 80 | 150                    | 167     | 159     | 22.1       |
| Prairie Gold                     | PG 1313   | 80 | 148                    | 163     | 156     | 22.5       |
| Renk                             | RK221     | 82 | 155                    | 155     | 155     | 22.7       |
| Brown                            | 1688      | 79 | 167                    | 160     | 163     | 23.5       |
| Hyland                           | HL 2202   | 80 | 132                    | 153     | 142     | 23.6       |
| Trelay                           | 1007      | 80 | 148                    | 155     | 152     | 23.9       |
| Dahlco                           | X-8851    | 80 | 157                    | 158     | 158     | 27.0       |
| Hyland                           | HL 2333   | 80 | 129                    | 166     | 148     | 28.2       |
| 78 to 82 RM hybrid averages      |           |    | 153                    | 161     | 157     | 22.9       |
| <b>83 to 87 RM hybrids</b>       |           |    |                        |         |         |            |
| Dekalb                           | DK355     | 85 | 161                    | 186     | 174     | 21.6       |
| Pioneer                          | 39D81     | 85 | 176                    | 175     | 176     | 21.9       |
| Garst                            | 8972IT    | 87 | 168                    | 193     | 180     | 22.0       |
| Brown                            | 1967      | 83 | 166                    | 177     | 172     | 22.2       |
| Top Farm                         | TFsx 2184 | 84 | 165                    | 173     | 169     | 22.2       |
| Renk                             | RK232     | 85 | 153                    | 201     | 177     | 22.4       |

| Source / Brand              | Hybrid    | RM | Yield, Bushels/Acre at |         | Average |            |
|-----------------------------|-----------|----|------------------------|---------|---------|------------|
|                             |           |    | Rothsay                | Staples | Across  | Locations  |
|                             |           |    |                        |         | Bu/A    | % Moisture |
| NK Brand                    | N 17-C5   | 85 | 156                    | 180     | 168     | 22.5       |
| Garst                       | 8966      | 87 | 150                    | 174     | 162     | 22.6       |
| Terning                     | TS 8121   | 85 | 155                    | 169     | 162     | 23.0       |
| Wensman                     | 5088Bt    | 85 | 169                    | 195     | 182     | 23.0       |
| Top Farm                    | TFsx 2187 | 87 | 158                    | 162     | 160     | 23.1       |
| Proseed                     | 185       | 85 | 134                    | 142     | 138     | 23.2       |
| Golden Harvest              | H-6229    | 84 | 162                    | 145     | 154     | 23.2       |
| Mycogen                     | 2242      | 86 | 154                    | 163     | 159     | 23.4       |
| LG Seeds                    | LG 2367   | 85 | 163                    | 187     | 175     | 23.4       |
| Hyland                      | HL 2303   | 85 | 123                    | 144     | 133     | 23.6       |
| Mallard                     | UC 382-B  | 85 | 169                    | 147     | 158     | 23.6       |
| Dairyland Stealth           | 1485      | 85 | 161                    | 165     | 163     | 23.7       |
| Garst                       | N6902     | 87 | 155                    | 148     | 152     | 23.7       |
| Wensman                     | 5048Bt    | 84 | 165                    | 155     | 160     | 23.8       |
| Dekalb                      | DK334BtY  | 83 | 168                    | 144     | 156     | 23.9       |
| Garst                       | 8975      | 87 | 128                    | 170     | 149     | 24.0       |
| Dahlman                     | 1300      | 85 | 154                    | 139     | 147     | 24.1       |
| Kaltenberg                  | K2909     | 85 | 161                    | 181     | 171     | 24.2       |
| Renk                        | RK277     | 85 | 169                    | 158     | 164     | 24.3       |
| Dahlco                      | 2287      | 87 | 157                    | 153     | 155     | 24.4       |
| Trelay                      | 2008      | 87 | 158                    | 175     | 166     | 25.0       |
| Brown                       | 2041      | 86 | 130                    | 168     | 149     | 25.3       |
| Mallard                     | UC 386-A  | 85 | 161                    | 187     | 174     | 25.8       |
| Jung                        | 2285      | 85 | 158                    | 185     | 171     | 25.9       |
| Hyland                      | HL 2324   | 85 | 156                    | 149     | 152     | 27.5       |
| 83 to 87 RM hybrid averages |           |    | 157                    | 167     | 162     | 23.6       |
| <b>88 to 92 RM hybrids</b>  |           |    |                        |         |         |            |
| Dekalb                      | DK405     | 90 | 173                    | 191     | 182     | 22.3       |
| Kaltenberg                  | K3404     | 89 | 164                    | 156     | 160     | 23.1       |
| NK Brand                    | N2555Bt   | 90 | 173                    | 199     | 186     | 23.1       |
| Kruger                      | Ex.902    | 89 | 170                    | 180     | 175     | 23.1       |
| NK Brand                    | NX 2527   | 90 | 168                    | 191     | 179     | 23.2       |
| Kaltenberg                  | K3303     | 88 | 155                    | 186     | 171     | 23.3       |
| Jung                        | 2370      | 89 | 165                    | 186     | 176     | 23.4       |
| NK Brand                    | N24B9     | 90 | 172                    | 170     | 171     | 23.4       |
| Kruger                      | K-2091    | 88 | 151                    | 175     | 163     | 23.5       |
| Dahlman                     | 1488      | 90 | 164                    | 188     | 176     | 23.5       |
| Hyland                      | HL 2240   | 90 | 155                    | 170     | 162     | 23.7       |
| Top Farm                    | TFsx 2191 | 91 | 156                    | 179     | 168     | 23.9       |
| Golden Harvest              | H-6726    | 93 | 167                    | 186     | 176     | 24.0       |
| Terning                     | TS 8202   | 90 | 146                    | 188     | 167     | 24.1       |
| Kaltenberg                  | K3808     | 92 | 157                    | 167     | 162     | 24.2       |
| Dekalb                      | DK389BtY  | 88 | 140                    | 186     | 163     | 24.2       |
| Pioneer                     | 39F06     | 88 | 176                    | 187     | 182     | 24.3       |
| Mallard                     | UC389-A   | 90 | 159                    | 175     | 167     | 24.3       |
| Mycogen                     | 2250IMI   | 89 | 175                    | 188     | 181     | 24.4       |
| Pioneer                     | 38K06     | 92 | 162                    | 207     | 184     | 24.6       |
| Cargill                     | 2777      | 90 | 167                    | 166     | 167     | 24.6       |
| Renk                        | RK386     | 90 | 145                    | 185     | 165     | 24.8       |
| Kaltenberg                  | K4303     | 92 | 161                    | 182     | 172     | 24.9       |
| Terning                     | TS 8212   | 91 | 154                    | 202     | 178     | 24.9       |
| Seeds 2000                  | 2901      | 90 | 165                    | 189     | 177     | 25.1       |

| Source / Brand                  | Hybrid    | RM | Yield, Bushels/Acre at |         | Average |            |
|---------------------------------|-----------|----|------------------------|---------|---------|------------|
|                                 |           |    | Rothsay                | Staples | Across  | Locations  |
|                                 |           |    |                        |         | Bu/A    | % Moisture |
| Hyland                          | HL B275   | 90 | 130                    | 192     | 161     | 25.2       |
| United Suppliers                | US C909   | 90 | 156                    | 166     | 161     | 25.2       |
| Cargill                         | 2610      | 90 | 143                    | 158     | 151     | 25.2       |
| Top Farm                        | TFsx 2188 | 88 | 153                    | 183     | 168     | 25.3       |
| Garst                           | N8965     | 90 | 164                    | 171     | 167     | 25.9       |
| Wensman                         | W 5178Bt  | 91 | 144                    | 155     | 150     | 26.2       |
| Trelay                          | 3700      | 90 | 155                    | 181     | 168     | 26.4       |
| Dahlman                         | 1490      | 90 | 195                    | 189     | 192     | 26.4       |
| Wensman                         | MAX 78    | 90 | 154                    | 207     | 180     | 27.1       |
| Proseed                         | ET 92     | 92 | 149                    | 183     | 166     | 27.2       |
| Hyland                          | HL 2391   | 90 | 162                    | 167     | 164     | 27.5       |
| KSC/Challenger                  | K-2094    | 91 | 175                    | 209     | 192     | 27.8       |
| Dahlco                          | X-8902    | 90 | 165                    | 162     | 164     | 28.0       |
| 88 to 92 RM hybrid averages     |           |    | 160                    | 182     | 171     | 24.8       |
| <b>93 and later RM hybrids</b>  |           |    |                        |         |         |            |
| Wensman                         | W 5258 Bt | 94 | 151                    | 211     | 181     | 24.2       |
| KSC/Challenger                  | K9896     | 93 | 172                    | 215     | 193     | 25.0       |
| Proseed                         | ES 4938   | 93 | 171                    | 204     | 188     | 25.2       |
| Kaltenberg                      | K4508     | 96 | 137                    | 188     | 162     | 25.2       |
| Jung                            | 2436      | 94 | 150                    | 187     | 169     | 25.6       |
| Brown                           | 3680      | 94 | 146                    | 191     | 169     | 25.8       |
| Proseed                         | ES 4968   | 96 | 163                    | 190     | 177     | 25.9       |
| Pioneer                         | 38W36     | 93 | 174                    | 203     | 188     | 25.9       |
| Seeds 2000                      | 2951      | 95 | 166                    | 177     | 172     | 26.1       |
| Golden Harvest                  | H-7076Bt  | 96 | 131                    | 182     | 156     | 26.2       |
| Kaltenberg                      | K4606     | 95 | 152                    | 180     | 166     | 26.2       |
| Pioneer                         | 38P06     | 95 | 149                    | 190     | 170     | 26.4       |
| Mycogen                         | 2424      | 95 | 155                    | 185     | 170     | 26.8       |
| United Suppliers                | US C969   | 96 | 173                    | 191     | 182     | 27.2       |
| Wensman                         | MAX 007   | 93 | 167                    | 201     | 184     | 27.2       |
| KSC/Challenger                  | Ex. 2098  | 95 | 150                    | 182     | 166     | 27.3       |
| Kruger                          | K-9898+   | 95 | 159                    | 201     | 180     | 27.5       |
| Dairyland Stealth               | 1099 RR   | 97 | 171                    | 160     | 165     | 27.6       |
| Kaltenberg                      | K3904     | 93 | 175                    | 174     | 175     | 27.9       |
| Dairyland Stealth               | 1499      | 95 | 163                    | 189     | 176     | 28.7       |
| Kruger                          | K-9802RR  | 99 | 162                    | 178     | 170     | 28.8       |
| Dairyland Stealth               | 1501      | 95 | 149                    | 164     | 157     | 32.4       |
| 93 RM and later hybrid averages |           |    | 158                    | 188     | 173     | 26.8       |
| Northern locations averages     |           |    | 158                    | 175     | 166     | 24.5       |
| LSD(0.20)                       |           |    | 20                     | 21      | 15      | 1.3        |

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## Sources of Registered and Certified Seed

Following are sources of Registered and Certified seed of crop varieties grown for certification in Minnesota in 1999. Fields of these seed growers were inspected by Minnesota Crop Improvement Association (MCIA).

To be eligible for final certification the seed produced on these fields must be sampled, tested and inspected by MCIA after conditioning. The term "certified" is broadly applied to three classes of seed, Foundation, Registered and Certified. Registered seed is grown from Foundation seed and Certified seed is usually grown from Registered seed, though Certified seed of some varieties is grown directly from the Foundation seed class.

Certified seed transported across state lines must comply with the stipulations of the Federal Seed Act and with seed laws and regulations of the state into which it is transported. Seed tagged with MCIA certification tags or for which an MCIA bulk

certification certificate has been issued has been grown, conditioned, sampled and tested according to MCIA regulations and meets applicable requirements of the Minnesota Department of Agriculture.

Should you ever suspect misrepresentation, mislabeling or violation of regulations under which certified seed classes are produced and marketed, contact Minnesota Crop Improvement Association, 1900 Hendon Avenue, St. Paul, MN 55108.

Prospective buyers of seed from growers in the list that follows should contact growers directly for information about seed quantity and price.

This listing is provided as a service to prospective seed buyers. It is not to be construed as an offer for sale by the grower and is not to be considered as public advertising or as the posting of public notice in any manner. Growers who wish to promote and sell seed in Minnesota must com-

ply with all current state regulations governing the sale of seed.

### **Notice to Seed Buyers**

While MCIA cannot assume financial responsibility for the performance of seed listed in this directory or for disagreements over sales that may arise from this list any complaint about certified seed addressed to MCIA will be investigated. Should a claim over seed performance involving MCIA arise, it must be addressed as provided in Minnesota Department of Agriculture Rules for Arbitration of Seed Performance Disputes. It is the responsibility of the seller of certified seed to supply seed representative of the samples submitted and approved for certification by MCIA. Purchasers of seed should insist on certification being complete, with certified seed tags attached to bags or a bulk sale certificate issued for bulk seed lots.

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*Listing lines show county, grower, town, phone number and class of seed, R for Registered, C for Certified.*

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