



CORN SILAGE

The Minnesota Hybrid Corn Silage Evaluation Program was initiated as a test to evaluate corn hybrids intended for use as silage. The program's unbiased forage yield and quality information will be useful in education activities and in marketing corn hybrids grown for silage. The program is financed in part by entry fees from private seed companies that enter hybrids for testing.

Test Sites

Trials were conducted at Rosemount and Waseca in 2000.

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 five replications. Hybrids were planted at 33,000 seeds per acre with 30-inch row spacing. Standard check hybrids were included to represent the RM groups at each location.

Harvesting: Plots were harvested and whole-plant (WP) herbage sampled for yield and forage quality determination for each RM group. The WP target maturity was a moisture content of 60% to 65%. Harvest at Waseca was on September 6 for the early and September 12 for the late RM group. Harvest at Rosemount was on September 7 for both the early and late RM groups. After grain maturation two rows adjacent to those sampled

for silage were harvested for grain and yields adjusted to 15.5% moisture.

Test Results

Moisture content, grain yields, whole-plant dry matter (DM) and silage yields, crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (NDF), and in vitro digestible dry matter (IVDDM) concentrations are given for entries in each RM group. Means and least significant difference (LSD) data at 10% probability are shown for each RM group and at each location. While they are ranked by average moisture content, hybrids differ in dry matter, silage and grain yields, and effect on milk production. There was little difference in forage quality parameters (CP, ADF, NDF and IVDDM).

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.

Companies participating in the 2000 hybrid corn silage trials.

Albert Lea Seed House, 1414 W. Main, P.O. Box 127, Albert Lea, MN 56007

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

The J.C. Robinson Seed Company, Golden Harvest Seeds, P.O. Box A, Waterloo, NE 68069

Monsanto, 3100 Sycamore Road, De Kalb, IL 60115

Ramy International Ltd, 1329 North Riverfront Drive., Mankato, MN 56001

Renk Seed Company, R-2 6800 Wilburn Road., Sun Prairie, WI 53590-0958

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 Early relative maturity (RM) corn hybrids at Waseca, 2000.

| Brand | Hybrid | RM | Moisture, % | Yield Per Acre ¹ | | | Concentration, Percent ² | | | | Milk ³ | |
|--------------------------|----------------------------|-----|-------------|-----------------------------|----------|--------------|-------------------------------------|-----|-----|-------|-------------------|--------|
| | | | | Grain, Bushels | DM, Tons | Silage, Tons | CP | ADF | NDF | IVDDM | Ton | Acre |
| Dairyland | Stealth 1406 | 105 | 59.3 | 158 | 9.9 | 24.4 | 6.8 | 23 | 38 | 65 | 1,634 | 16,149 |
| Epley | E5105 S | 105 | 60.1 | 137 | 8.5 | 21.3 | 6.6 | 25 | 42 | 62 | 1,275 | 10,793 |
| Dekalb | DK C49-92 | 99 | 61.1 | 145 | 7.7 | 20.1 | 6.7 | 23 | 38 | 64 | 1,584 | 12,247 |
| Pioneer | 36R11 (check) ⁴ | 101 | 61.3 | 171 | 9.6 | 24.9 | 6.9 | 24 | 40 | 63 | 1,451 | 13,938 |
| Asgrow | RX508YG | 103 | 61.8 | 141 | 7.6 | 19.9 | 6.8 | 24 | 39 | 64 | 1,526 | 11,569 |
| Trelay | 6900 | 103 | 63.0 | 164 | 9.1 | 24.7 | 6.5 | 23 | 38 | 64 | 1,567 | 14,240 |
| Dairyland | Stealth 1606 | 105 | 65.3 | 178 | 9.0 | 26.0 | 6.2 | 24 | 39 | 64 | 1,543 | 13,872 |
| Trelay | 7095 | 105 | 65.5 | 185 | 10.1 | 29.3 | 6.8 | 24 | 40 | 65 | 1,512 | 15,253 |
| High Cycle | 6601nE | 105 | 66.9 | 162 | 9.3 | 27.9 | 7.0 | 25 | 42 | 62 | 1,255 | 11,614 |
| Early RM averages | | | 62.7 | 160 | 9.0 | 24.3 | 6.7 | 24 | 39 | 64 | 1,483 | 13,297 |
| LSD (0.10) | | | 2.0 | 26 | 0.7 | 1.9 | ns | ns | ns | 2 | | |

See footnotes with the table that follows.

Moisture, yield and quality traits for Late relative maturity (RM) corn hybrids at Waseca, 2000.

| Brand | Hybrid | RM | Moisture, % | Yield Per Acre ¹ | | | Concentration, Percent ² | | | | Milk ³ | |
|-------------------------|----------------------------|-----|-------------|-----------------------------|----------|--------------|-------------------------------------|-----|-----|-------|-------------------|--------|
| | | | | Grain, Bushels | DM, Tons | Silage, Tons | CP | ADF | NDF | IVDDM | Ton | Acre |
| | | | | Renk | RK 775 | 108 | 56.1 | 160 | 8.1 | 18.5 | 6.6 | 22 |
| Dairyland | Stealth 1508 | 108 | 61.0 | 181 | 8.2 | 20.9 | 6.5 | 23 | 37 | 64 | 1,570 | 12,803 |
| Viking | 4004 | 110 | 63.2 | 164 | 6.9 | 18.9 | 6.3 | 22 | 36 | 65 | 1,701 | 11,797 |
| Dairyland | Stealth 1507 | 106 | 63.4 | 169 | 8.8 | 24.0 | 6.9 | 23 | 38 | 65 | 1,631 | 14,332 |
| Golden Harvest | H-2547 | 112 | 65.6 | 168 | 7.6 | 22.3 | 6.7 | 21 | 35 | 66 | 1,785 | 13,550 |
| Pioneer | 34G82 (check) ⁴ | 106 | 66.7 | 169 | 6.5 | 19.9 | 6.7 | 23 | 36 | 64 | 1,649 | 10,721 |
| Dekalb | DK C57-38 | 107 | 67.1 | 172 | 6.9 | 21.3 | 7.0 | 23 | 39 | 64 | 1,528 | 10,500 |
| Epley | E 5112 S | 112 | 67.9 | 152 | 7.3 | 22.9 | 6.6 | 23 | 37 | 65 | 1,662 | 12,157 |
| Dairyland | Stealth 1609 | 108 | 69.0 | 181 | 9.0 | 29.2 | 6.6 | 23 | 39 | 65 | 1,581 | 14,238 |
| Epley | E 5110 S | 110 | 69.2 | 148 | 7.5 | 24.6 | 7.0 | 24 | 41 | 62 | 1,311 | 9,843 |
| Late RM averages | | | 64.9 | 167 | 7.7 | 22.3 | 6.7 | 23 | 38 | 64 | 1,603 | 12,301 |
| LSD (0.10) | | | 5.5 | ns | 1.1 | 2.1 | ns | ns | 3 | ns | | |

¹ Whole-plant (WP) corn harvested early September. DM yield is WP yield at 100% dry matter. Silage yield is WP yield at harvest moisture. Grain harvested after maturation and yields adjusted to 15.5% moisture. ² Refer to "Test Results" text for description. ³ Estimates of animal performance showing milk yield per ton of silage and per acre of cropland for a standard cow weight and milk production level (Milk 95, U of Wis.). ⁴ Standard check entry.

Moisture, yield and quality traits for Early relative maturity (RM) corn hybrids at Rosemount, 2000.

| Brand | Hybrid | RM | Moisture, % | Yield Per Acre ¹ | | | Concentration, Percent ² | | | | Milk ³ | |
|--------------------------|---------------------------|----|-------------|-----------------------------|----------|--------------|-------------------------------------|-----|-----|-------|-------------------|--------|
| | | | | Grain, Bushels | DM, Tons | Silage, Tons | CP | ADF | NDF | IVDDM | Ton | Acre |
| | | | | Dekalb | DK 355 | 85 | 53.8 | 154 | 8.3 | 17.9 | 7.2 | 24 |
| Dairyland | tealth 1203 | 99 | 61.3 | 160 | 9.9 | 25.6 | 6.6 | 25 | 42 | 62 | 1,260 | 12,452 |
| Dairyland | Stealth 1297 | 96 | 62.1 | 172 | 9.6 | 25.4 | 6.8 | 24 | 40 | 63 | 1,401 | 13,503 |
| Wensman | W 5308Bt | 95 | 62.6 | 176 | 10.2 | 27.5 | 6.5 | 24 | 42 | 63 | 1,360 | 13,917 |
| Pioneer | 3730 (check) ⁴ | 99 | 62.9 | 175 | 10.5 | 28.4 | 6.7 | 25 | 43 | 62 | 1,207 | 12,686 |
| Dekalb | DK C42-22 | 92 | 63.2 | 183 | 9.7 | 26.5 | 6.7 | 25 | 43 | 62 | 1,185 | 11,522 |
| Trelay | 5700 | 98 | 65.1 | 159 | 10.0 | 28.7 | 7.0 | 25 | 44 | 62 | 1,187 | 11,847 |
| Early RM averages | | | 61.6 | 168 | 9.8 | 25.7 | 6.8 | 25 | 42 | 62 | 1,276 | 12,420 |
| LSD (0.10) | | | 2.1 | 17 | 0.8 | 2.1 | ns | 1 | 2 | ns | | |

See footnotes with the table below.

Moisture, yield and quality traits for Late relative maturity (RM) corn hybrids at Rosemount, 2000.

| Brand | Hybrid | RM | Moisture, % | Yield Per Acre ¹ | | | Concentration, Percent ² | | | | Milk ³ | |
|-------------------------|----------------------------|-----|-------------|-----------------------------|----------|--------------|-------------------------------------|-----|------|-------|-------------------|--------|
| | | | | Grain, Bushels | DM, Tons | Silage, Tons | CP | ADF | NDF | IVDDM | Ton | Acre |
| | | | | Renk | RK 775 | 108 | 61.9 | 159 | 10.2 | 26.8 | 6.1 | 26 |
| Renk | RK 685 | 100 | 63.4 | 171 | 9.2 | 25.1 | 6.6 | 26 | 46 | 60 | 970 | 8,933 |
| Renk | RK 606 | 100 | 64.0 | 169 | 9.3 | 26.0 | 6.6 | 25 | 43 | 61 | 1,181 | 10,988 |
| Wensman | W 5378Bt | 100 | 65.1 | 154 | 9.4 | 27.1 | 6.3 | 26 | 45 | 59 | 976 | 9,206 |
| Pioneer | 36R11 (check) ⁴ | 101 | 65.3 | 190 | 9.3 | 27.0 | 6.7 | 26 | 46 | 60 | 984 | 9,164 |
| Dairyland | Stealth 1508 | 108 | 66.1 | 170 | 9.8 | 28.8 | 5.8 | 27 | 46 | 60 | 968 | 9,451 |
| Ramy | PG 1540 | 105 | 66.3 | 159 | 8.8 | 26.0 | 6.8 | 24 | 42 | 62 | 1,281 | 11,235 |
| Golden Harvest | H-8250 | 106 | 66.5 | 174 | 9.6 | 28.9 | 6.3 | 26 | 44 | 61 | 1,130 | 10,886 |
| Trelay | 6900 | 103 | 67.7 | 159 | 9.9 | 30.6 | 6.8 | 25 | 43 | 62 | 1,199 | 11,827 |
| Late RM averages | | | 65.1 | 167 | 9.5 | 27.4 | 6.5 | 26 | 44 | 60 | 1,080 | 10,239 |
| LSD (0.10) | | | 2.2 | ns | 0.7 | 1.8 | 0.5 | 1 | 2 | 2 | | |

¹ Whole-plant (WP) corn harvested early September. DM yield is WP yield at 100% dry matter. Silage yield is WP yield at harvest moisture. Grain harvested after maturation and yields adjusted to 15.5% moisture. ² Refer to "Test Results" text for description. ³ Estimates of animal performance showing milk yield per ton of silage and per acre of cropland for a standard cow weight and milk production level (Milk 95, U of Wis.). ⁴ Standard check entry.