

## 2008 Minnesota Hybrid Corn Silage Performance Trials

The Minnesota Hybrid Corn Silage Evaluation Program evaluates the silage potential of corn hybrids in Minnesota. The goal of the program is to provide unbiased forage yield and quality information for educational and marketing programs.

The program is financed in part by entry fees from private seed companies that chose to enter hybrids for testing. These companies are listed in this publication. Results presented are from corn silage performance trials in regions of extensive corn silage use: southeastern, central, and west-central Minnesota. The locations are in important dairy regions of Minnesota.

### TEST SITES

Silage hybrids entered in the southeast or central region trials were tested at two sites within each region. Hybrids entered in the west-central region were tested at one site. Sites within regions were as follows:

#### **Southeast Dairy Region:**

LaCrescent, MN (Houston County)  
Rochester, MN (Olmsted County)

#### **Central Dairy Region:**

Paynesville, MN (Stearns County)  
Melrose, MN (Stearns County)

#### **West-central Dairy Region:**

Ottertail, MN (Otter Tail County)

### TEST PROCEDURE

#### **(Southeast and Central)**

**Design:** Plots were established at LaCrescent, Rochester, Paynesville and Melrose in randomized complete block designs with 4 replications. Hybrids were planted at 33,000 seed per acre with 30-inch row spacing on May 3 at the SE sites (LaCrescent and Rochester) and May 7 at the Central MN sites (Paynesville and Melrose). Plant nutrients as manure or inorganic fertilizer were applied according to University of Minnesota recommendation. Cultivation and herbicides applied by University of Minnesota recommendation were used to control weeds.

**Harvesting:** Plots were harvested and whole-plant herbage sampled for dry matter and forage quality analysis at each site. Each test site was harvested when the average whole-plant moisture across entries was estimated to be 65%. In 2008, harvest dates at LaCrescent, Rochester, Paynesville and Melrose were September 9, September 16, September 23 and September 26, respectively.

#### **(West-central)**

**Design:** Plots were established May 8 near Ottertail, MN under center pivot irrigation in a randomized complete block design with 3 replications. Hybrids were planted at 35,700 seeds

per acre with 30-inch row spacing. Fertilizer was fall applied liquid manure at 8000 gallons per acre plus 25 gallons per acre 28% in July. Pre-emergent herbicide was applied to control weeds.

**Harvesting:** Plots were harvested and whole-plant herbage sampled for yield and forage quality analysis on September 24.

## RESULTS PROVIDED

Tables 1-5 summarize hybrid yield and forage quality results from LaCrescent, Rochester, Paynesville, Melrose and Ottertail, respectively. Moisture content, whole-plant dry matter (DM) yield and silage yield are listed, and hybrids are ranked in descending order of milk yield per acre (Milk Yield, lb/acre). Genetic trait information is supplied by companies entered in the hybrid corn silage performance trial.

Whole-plant forage quality traits listed include crude protein (CP), neutral detergent fiber (NDF), 48-hour *in vitro* digestibility (IVD), 48-hour neutral detergent fiber digestibility (NDFD), and starch concentration. With the exception of NDFD, all forage quality traits are expressed as a percent of dry matter. NDFD is expressed as a percent of NDF.

Milk production potentials per ton (lb milk/ton forage) and per acre (lb milk/acre forage) of forage were calculated using the MILK2006 spreadsheet developed by the University of Wisconsin. MILK2006 approximates animal performance based on a standard cow weight and milk production level (1350 lb body weight and 90 lb/day at 3.8% fat). Field values for moisture and DM yield at harvest; laboratory values for CP, NDF, NDFD, starch, oil and ash concentration; and book values for NDFCP (1.3%) were used for spreadsheet calculations. For MILK2006 predictions, we assumed that kernel processing occurred.

## HOW TO USE RESULTS

NDF is a negative indicator of forage intake potential; higher NDF concentration generally implies lower animal performance potential. IVD provides an estimate of forage dry matter digestibility, and NDFD estimates digestibility of the fiber fraction. Starch concentration is positively associated with digestibility because it is assumed to be 100% digestible. Relatively higher IVD, NDFD and/or starch concentrations generally imply greater animal performance potential. Milk yield per acre represents the combined effects of yield and quality.

Corn hybrids differed in yield, forage quality, and milk production potential at all sites. Means and least significant difference (LSD) values at the 10% probability level are shown for each parameter at each site. Where the difference between two hybrids for a particular yield or quality trait is greater than the LSD value, there is a 90% probability that there is a statistically significant difference between the two hybrids for that parameter (i.e. moisture, yield, quality concentration, or milk production).

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## PARTICIPATING COMPANIES

Companies participating in the 2008 hybrid corn silage performance trials are listed below:

**Crop Production Services (VIGORO)**, 220 Bottemiller Dr., Wadena Industrial Park, Wadena, MN 56482  
[www.cropproductionservices.com](http://www.cropproductionservices.com)

**Dairyland Seed Co, Inc.** P O Box 958, West Bend, WI 53095 [www.dairylandseed.com](http://www.dairylandseed.com)

**Dekalb (Monsanto Co)** 800 N Lindberg Blvd., St Louis, MO 63167 [www.dekalb.com](http://www.dekalb.com)

**Fielder's Choice Direct**, 306 North Main, P O Box 898, Monticello, IN 47960  
[www.fielderschoicedirect.com](http://www.fielderschoicedirect.com)

**Garst Seed Company**, 2369 330<sup>th</sup> St, Slater, IA 50244 [www.garst.seed](http://www.garst.seed)

**Gold Country Seed, Inc.**, 16506 Hwy 15 North, P O Box 604, Hutchinson, MN 55350  
[www.goldcountryseed.com](http://www.goldcountryseed.com)

**Golden Harvest Seeds, Inc.**, 100 JC Robinson Blvd, P O Box 307, Waterloo, NE 68069  
[www.goldenharvestseeds.com](http://www.goldenharvestseeds.com)

**Heartland Hybrids**, 850 1<sup>st</sup> St North, P O Box J, Dassel, MN 55325  
[www.heartlandhybrids.com](http://www.heartlandhybrids.com)

**Hyland Seeds**, 2 Hyland Drive, Blenheim, Ontario, Canada N0P 1A0 [www.hylandseeds.com](http://www.hylandseeds.com)

**La Coop Federee (ELITE)**, 9001 Blvd de L' Acadia, Bureau 200, Montreal, Quebec, Canada H4N 3H7  
[www.coopfed.qc.ca](http://www.coopfed.qc.ca)

**Legacy Seeds, Inc.**, 210 Pine Street, Waupaca, WI 54981 [www.legacyseeds.com](http://www.legacyseeds.com)

**Mycogen Seeds**, 9330 Zionsville Rd, Indianapolis, IN 46268 [www.mycogen.com](http://www.mycogen.com)

**Nu Tech Seed Co.**, 307 3<sup>rd</sup> Street, Alice, ND 58031 [www.yieldleader.com](http://www.yieldleader.com)

**Pioneer Hi-Bred, Int'l.**, 7000 NW 62<sup>nd</sup> Ave, Johnston, IA 50131 [www.pioneer.com](http://www.pioneer.com)

**Producers Hybrids**, P.O. Box C, Battle Creek, NE 68715 [www.producershybrids.com](http://www.producershybrids.com)

**Renk Seed Co.**, 6800 Wilburn Road, Sun Prairie, WI 53590 [www.renkseed.com](http://www.renkseed.com)

**Trelay Seeds**, 11623 State Road 80N, Livingston, WI 53554 [www.trelay.com](http://www.trelay.com)

**Wensman Seed Co.**, Box 190, Wadena, MN 56482 [www.wensmanseed.com](http://www.wensmanseed.com)

**Table 1.** Relative maturity (RM), whole-plant moisture (Moist), dry matter and silage yield and quality traits for corn hybrids planted at LaCrescent, MN (Houston County) in 2008.

Brand/ Hybrid entry	Traits <sup>1</sup>	RM	Moist	Yield <sup>2</sup>		Quality (concentration) <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	silage	CP	NDF	IVD	NDFD	Starch	Ton	Acre
			%	- ton/ acre -	%					lb/ ton	lb/ acre	
DeKalb/ DKC61-69	Bt,CRW,GLY	111	67.6	11.1	34.4	8.6	41	77	39	34	3,440	38,300
Producers Hybrids/ 7325VT3	Bt,CRW,GLY	113	69.1	10.9	35.2	8.6	44	77	44	31	3,490	38,000
Midwest Seed Genetic/ 76126VT3	Bt,CRW,GLY	105	66.0	10.8	31.7	8.6	45	73	43	31	3,470	37,400
DeKalb/ DKC57-43	Bt,CRW,GLY	107	69.2	11.1	35.9	8.5	47	70	40	28	3,250	36,000
Pioneer Brand/ 34A89	Bt,CRW,GLY,LL	110	67.8	10.7	33.3	8.9	46	72	42	29	3,360	36,000
Crow's/ 4822B	Bt	107	67.2	10.5	31.9	8.6	44	74	41	31	3,400	35,600
Crow's/ 3848VT3	Bt,CRW,GLY	105	65.5	10.4	30.2	8.4	47	75	43	30	3,400	35,500
Mycogen/ TMF 2Q716	Bt,CRW,GLY	110	69.0	10.1	32.6	8.8	45	74	44	31	3,470	35,100
Renk/ RK844VT3	Bt,CRW,GLY	112	69.4	10.3	33.5	9.0	45	74	44	30	3,420	35,100
Nu Tech Seed/ 3T-310 VT3	Bt,CRW,GLY	110	68.0	10.3	32.1	8.5	46	70	41	30	3,370	34,600
Legacy Seeds/ L-5350 CBLLGT	Bt,GLY,LL	104	66.7	10.2	30.7	9.0	43	74	40	31	3,340	34,200
Mycogen/ TMF 2W587	Bt,CRW	105	68.0	9.9	30.8	9.3	45	70	46	31	3,470	34,200
Renk/ RK829VT3	Bt,CRW,GLY	112	68.6	10.4	33.1	8.4	47	71	40	28	3,250	33,800
G2 Genetics/ 1X-911 HXT/LL	Bt,CRW,LL	111	70.8	10.1	34.4	9.6	46	72	43	27	3,350	33,600
Gold Country Seed/ 100-11 SSVT3	Bt,CRW,GLY,Lf	100	65.9	9.8	28.8	8.6	45	76	42	30	3,380	33,200
Midwest Seed Genetic/ 76865VT3	Bt,CRW,GLY	109	69.4	9.9	32.4	8.8	44	73	40	31	3,350	33,200
Fielders Choice/ NG 6720	Bt,CRW,GLY	108	67.4	10.2	31.3	7.6	46	73	38	29	3,220	32,800
Midwest Seed Genetic/ 76996VT3	Bt,CRW,GLY	109	67.1	9.8	29.9	8.6	47	70	42	29	3,330	32,800
Renk/ RK692CBLLRW	Bt,CRW,LL	105	63.4	9.4	25.8	8.7	43	74	45	34	3,470	32,700
Trelay/ 7T231	Bt,CRW,GLY	111	69.8	9.9	32.7	9.1	46	72	41	31	3,320	32,700
Crow's/ 4354VT3	Bt,CRW,GLY	107	68.3	9.7	30.6	8.2	44	69	39	30	3,320	32,200
Legacy Seeds/ L-6600 HX	Bt,LL	110	72.6	10.2	37.1	9.1	50	68	41	24	3,130	31,900
DeKalb/ DKC52-59	Bt,CRW,GLY	102	68.9	9.7	31.3	8.8	47	71	42	28	3,260	31,800
Trelay/ 6T226	Bt,CRW,GLY	106	68.1	10.0	31.2	8.7	50	71	41	26	3,180	31,700
Renk/ RK698RRYGRW	CRW,GLY	104	65.9	9.0	26.4	8.3	43	74	42	33	3,460	31,100
Fielders Choice/ NG 6686	Bt,CRW,GLY	107	67.2	9.4	28.5	8.3	49	74	42	28	3,300	30,800
Dairyland/ HiD.F.-3104		104	68.6	9.8	31.1	7.8	49	71	40	25	3,140	30,600
Midwest Seed Genetic/ 76485VT3	Bt,CRW,GLY	107	69.6	9.3	30.5	9.0	47	68	41	28	3,270	30,400
Gold Country Seed/ 98-11 SSRR	GLY,Lf	98	66.3	9.2	27.3	8.1	45	76	40	29	3,280	30,200
Pioneer Brand/ 34B41	Bt,CRW,GLY,LL	110	69.7	10.1	33.5	8.5	50	71	37	23	2,980	30,200
Dairyland/ HiD.F.-3110-6	GLY	110	69.7	10.2	33.7	8.2	51	68	37	22	2,940	30,000
DeKalb/ DKC55-82	GLY	105	69.7	9.3	30.7	9.2	50	73	42	27	3,200	29,800
Dairyland/ HiD.F.-3008-4	CRW,GLY	108	69.8	9.4	31.3	8.4	49	73	40	26	3,120	29,500
Crow's/ 1928R	GLY	99	65.4	9.0	26.1	8.5	46	73	40	29	3,260	29,400
Jung Seed Genetics/ HDS 76V78		107	66.9	9.5	28.8	7.7	48	72	37	25	3,060	29,200
DeKalb/ DKC50-44	Bt,CRW,GLY	100	69.9	9.0	30.0	8.9	49	71	41	28	3,190	28,800
DeKalb/ DKC55-24	Bt,CRW,GLY	105	67.8	9.3	28.9	9.0	51	70	40	24	3,060	28,500
DeKalb/ DKC54-49	Bt,CRW,GLY	104	69.9	9.3	30.8	8.4	50	69	39	25	3,060	28,400
Crow's/ 2123VT3	Bt,CRW,GLY	101	70.2	8.8	29.5	8.4	50	72	42	25	3,210	28,300
G2 Genetics/ 1X-716 HXT/LL	Bt,CRW,LL	116	73.3	9.0	33.6	9.1	50	72	40	23	3,120	28,000
Midwest Seed Genetic/ 70006R	GLY	99	67.8	8.8	27.3	8.5	48	71	39	27	3,140	27,600
Nu Tech Seed/ 0C-413 YGCB	Bt,CRW	113	69.5	8.8	28.9	8.2	49	70	39	26	3,130	27,600
Jung Seed Genetics/ HDS 7113QRR/YGP	Bt,CRW,GLY	113	70.2	8.9	29.7	8.5	51	72	41	23	3,090	27,400
Jung Seed Genetics/ HDS 66W46		104	65.6	8.8	25.6	8.3	51	70	40	27	3,080	27,200
Producers Hybrids/ 6634VT3	Bt,CRW,GLY	106	68.0	9.2	28.6	9.0	52	71	39	24	2,970	27,200
Renk/ RK770VT3	Bt,CRW,GLY	108	72.8	8.6	31.8	9.5	50	71	41	26	3,140	27,100
Jung Seed Genetics/ HDS 7105VT3	Bt,CRW,GLY	109	70.6	8.2	28.0	8.8	49	70	41	26	3,170	26,100
DeKalb/ DKC53-17	Bt,CRW,GLY	103	70.2	7.5	25.2	9.1	50	72	40	23	3,060	22,900
<b>mean</b>			<b>68.5</b>	<b>9.7</b>	<b>30.8</b>	<b>8.6</b>	<b>47</b>	<b>72</b>	<b>41</b>	<b>28</b>	<b>3,250</b>	<b>31,400</b>
<b>LSD(0.10)</b>			<b>2.5</b>	<b>1.1</b>	<b>3.4</b>	<b>0.6</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>5</b>	<b>ns</b>	<b>5,300</b>
<b>CV</b>			<b>3.1</b>	<b>9.7</b>	<b>9.6</b>	<b>6.8</b>	<b>9.7</b>	<b>5.0</b>	<b>7.8</b>	<b>16.5</b>	<b>8.1</b>	<b>14.5</b>

<sup>1</sup> Bt, CRW, GLY, LL, Lf traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate, Liberty Link <sup>R</sup> (glufosinate-ammonium) herbicide resistance, and leafy trait, respectively.

<sup>2</sup> DM yield is whole-plant corn yield at 100% dry matter; Silage yield is whole-plant corn yield at harvest moisture.

<sup>3</sup> Quality concentration expressed as a % of DM, except NDFD which is expressed as a % of NDF. Refer to *Results Provided* text for additional information.

<sup>4</sup> Milk production was estimated using spreadsheet MILK2006 developed at the University of Wisconsin. Refer to *Results Provided* text for additional information.

**Table 2.** Relative maturity (RM), whole-plant moisture (Moist), dry matter and silage yield and quality traits for corn hybrids planted at Rochester, MN (Olmsted County) in 2008.

Brand/ Hybrid entry	Traits <sup>1</sup>	RM	Moist	Yield <sup>2</sup>		Quality (concentration) <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	silage	CP	NDF	IVD	NDFD	Starch	Ton	Acre
			%	- ton/ acre -		%					lb/ ton	lb/ acre
Legacy Seeds/ L-5350 CBLTGT	Bt,GLY,LL	104	64.6	10.2	28.7	8.7	40	78	44	38	3,600	36,600
Producers Hybrids/ 7325VT3	Bt,CRW,GLY	113	69.9	10.1	33.6	9.1	42	77	45	33	3,530	35,700
Renk/ RK829VT3	Bt,CRW,GLY	112	67.5	9.7	29.8	8.9	43	76	44	33	3,460	33,600
Trelay/ 7T231	Bt,CRW,GLY	111	66.4	9.2	27.3	8.6	42	76	43	34	3,520	32,400
Legacy Seeds/ L-6600 HX	Bt,LL	110	69.4	9.7	31.7	8.9	45	74	42	31	3,320	32,300
Dairyland/ HiD.F.-3008-4	CRW,GLY	108	67.1	9.5	29.0	8.8	44	74	43	33	3,370	32,100
G2 Genetics/ 1X-716 HXT/LL	Bt,CRW,LL	116	68.4	9.2	29.0	9.6	42	77	44	34	3,510	32,100
Pioneer Brand/ 34A89	Bt,CRW,GLY,LL	110	65.7	9.3	27.1	9.0	43	75	43	32	3,440	31,900
DeKalb/ DKC57-43	Bt,CRW,GLY	107	68.5	9.3	29.7	8.7	44	75	42	33	3,400	31,700
Midwest Seed Genetic/ 76485VT3	Bt,CRW,GLY	107	66.0	8.8	25.8	9.3	42	77	45	37	3,540	31,100
Crow's/ 2123VT3	Bt,CRW,GLY	101	66.5	9.0	26.7	8.6	43	75	43	36	3,460	31,000
Renk/ RK844VT3	Bt,CRW,GLY	112	67.9	8.8	27.4	9.5	42	77	45	35	3,520	30,900
Crow's/ 3848VT3	Bt,CRW,GLY	105	65.3	9.1	26.2	8.5	46	74	42	32	3,300	30,000
DeKalb/ DKC55-82	GLY	105	68.6	9.0	28.6	8.7	46	74	43	32	3,340	30,000
Crow's/ 4354VT3	Bt,CRW,GLY	107	68.0	8.6	27.0	9.3	44	76	44	33	3,450	29,800
DeKalb/ DKC61-69	Bt,CRW,GLY	111	67.8	8.9	27.5	8.8	45	74	43	31	3,360	29,800
G2 Genetics/ 1X-911 HXT/LL	Bt,CRW,LL	111	69.2	9.1	29.4	9.1	46	74	43	29	3,290	29,800
DeKalb/ DKC52-59	Bt,CRW,GLY	102	63.3	8.6	23.4	8.3	42	76	43	36	3,440	29,500
Trelay/ 6T226	Bt,CRW,GLY	106	64.9	8.6	24.4	8.5	44	75	43	35	3,420	29,400
Crow's/ 1928R	GLY	99	65.1	8.2	23.4	8.8	40	77	43	37	3,550	29,000
Producers Hybrids/ 6634VT3	Bt,CRW,GLY	106	66.1	8.6	25.2	8.9	43	75	42	34	3,380	28,900
Crow's/ 4822B	Bt	107	67.5	9.0	27.7	8.8	47	73	42	28	3,190	28,700
Nu Tech Seed/ 0C-413 YGCB	Bt,CRW	113	66.1	8.3	24.5	8.6	44	75	43	32	3,380	28,100
DeKalb/ DKC55-24	Bt,CRW,GLY	105	65.2	8.5	24.3	8.8	46	73	43	33	3,300	27,900
Fielders Choice/ NG 6720	Bt,CRW,GLY	108	66.4	8.4	25.0	8.6	46	73	41	34	3,290	27,600
Midwest Seed Genetic/ 76126VT3	Bt,CRW,GLY	105	64.1	8.2	22.9	8.2	45	74	42	33	3,350	27,600
Dairyland/ HiD.F.-3104		104	69.9	8.2	27.4	8.8	45	74	42	31	3,310	27,300
Renk/ RK692CBLLRW	Bt,CRW,LL	105	67.1	7.9	23.9	10.0	44	76	45	35	3,470	27,300
Dairyland/ HiD.F.-3110-6	GLY	110	71.1	8.5	29.4	8.8	48	73	43	25	3,190	27,100
DeKalb/ DKC50-44	Bt,CRW,GLY	100	66.7	8.6	25.7	8.5	48	72	41	30	3,160	27,100
Fielders Choice/ NG 6686	Bt,CRW,GLY	107	66.4	8.7	25.8	8.3	49	71	41	29	3,130	27,100
Midwest Seed Genetic/ 76996VT3	Bt,CRW,GLY	109	62.8	8.1	21.9	8.2	45	74	43	33	3,330	27,100
Renk/ RK698RRYGRW	CRW,GLY	104	65.4	8.0	23.0	8.7	44	74	42	34	3,350	26,700
Renk/ RK770VT3	Bt,CRW,GLY	108	69.1	7.8	25.3	10.0	45	75	44	32	3,390	26,500
Mycogen/ TMF 2Q716	Bt,CRW,GLY	110	69.7	8.6	28.5	8.3	51	70	42	24	3,060	26,400
Mycogen/ TMF 2W587	Bt,CRW	105	66.5	7.9	23.6	9.4	48	74	45	29	3,330	26,300
Jung Seed Genetics/ HDS 76V78		107	68.8	8.6	27.7	8.6	51	70	40	25	2,990	25,800
Jung Seed Genetics/ HDS 7105VT3	Bt,CRW,GLY	109	70.0	8.0	26.5	9.0	48	73	44	27	3,240	25,800
Nu Tech Seed/ 3T-310 VT3	Bt,CRW,GLY	110	66.0	7.8	22.9	8.4	45	74	42	31	3,300	25,700
Jung Seed Genetics/ HDS 66W46		104	66.5	8.2	24.5	8.2	48	71	40	29	3,080	25,300
Midwest Seed Genetic/ 76865VT3	Bt,CRW,GLY	109	68.3	7.6	24.1	8.9	45	74	42	31	3,310	25,300
Jung Seed Genetics/ HDS 7113QRR/YGP	Bt,CRW,GLY	113	70.4	7.6	25.6	8.7	46	73	43	28	3,260	24,700
Gold Country Seed/ 100-11 SSVT3	Bt,CRW,GLY,Lf	100	66.0	7.8	23.0	8.0	49	71	40	28	3,070	24,000
Gold Country Seed/ 98-11 SSR	GLY,Lf	98	68.5	7.8	24.7	8.4	50	70	40	27	3,040	23,600
Midwest Seed Genetic/ 70006R	GLY	99	67.8	6.9	21.5	8.7	44	75	43	33	3,370	23,300
DeKalb/ DKC53-17	Bt,CRW,GLY	103	66.0	7.3	21.5	8.7	49	72	42	30	3,140	23,000
DeKalb/ DKC54-49	Bt,CRW,GLY	104	67.5	7.3	22.5	8.4	49	71	41	28	3,120	22,900
	<b>mean</b>		<b>67.2</b>	<b>8.5</b>	<b>26.1</b>	<b>8.8</b>	<b>45</b>	<b>74</b>	<b>43</b>	<b>32</b>	<b>3,330</b>	<b>28,400</b>
	<b>LSD(0.10)</b>		<b>2.4</b>	<b>1.3</b>	<b>4.1</b>	<b>0.5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>260</b>	<b>5,400</b>
	<b>CV</b>		<b>3.0</b>	<b>13.1</b>	<b>13.3</b>	<b>5.4</b>	<b>8.9</b>	<b>4.1</b>	<b>4.9</b>	<b>13.4</b>	<b>6.6</b>	<b>16.3</b>

<sup>1</sup> Bt, CRW, GLY, LL, Lf traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate, Liberty Link<sup>R</sup> (glufosinate-ammonium) herbicide resistance, and leafy trait, respectively.

<sup>2</sup> **DM** yield is whole-plant corn yield at 100% dry matter; **Silage** yield is whole-plant corn yield at harvest moisture.

<sup>3</sup> Quality concentration expressed as a % of DM, except NDFD which is expressed as a % of NDF. Refer to *Results Provided* text for additional information.

<sup>4</sup> Milk production was estimated using spreadsheet MILK2006 developed at the University of Wisconsin. Refer to *Results Provided* text for additional information.

**Table 3.** Relative maturity (RM), whole-plant moisture (Moist), dry matter and silage yield and quality traits for corn hybrids planted at Paynesville, MN (Stearns County) in 2008.

Brand/ Hybrid entry	Traits <sup>1</sup>	RM	Moist	Yield <sup>2</sup>		Quality (concentration) <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	silage	CP	NDF	IVD	NDFD	Starch	Ton	Acre
				%	- ton/ acre -	%					lb/ ton	lb/ acre
Fielders Choice/ NG 6720	Bt,CRW,GLY	108	64.2	10.8	30.1	8.5	40	76	41	37	3,530	38,000
DeKalb/ DKC55-24	Bt,CRW,GLY	105	65.4	10.1	29.3	9.0	42	76	44	35	3,530	35,700
Crow's/ 2155VT3	Bt,CRW,GLY	102	64.5	9.9	28.0	9.1	41	76	41	38	3,480	34,500
Pioneer Brand/ 35F40	Bt,GLY,LL	107	66.0	9.8	28.9	9.5	42	76	43	36	3,490	34,300
Hyland Seeds/ HL SR59	RR	101	68.8	9.9	31.7	9.1	44	74	42	32	3,390	33,600
Producers Hybrids/ 6634VT3	Bt,CRW,GLY	106	66.4	9.7	28.8	8.9	43	75	41	36	3,430	33,200
G2 Genetics/ 5H-501 RR/HX	Bt,GLY,LL	101	66.8	9.1	27.4	9.2	41	77	44	39	3,620	32,900
Hyland Seeds/ HL B337	Bt	105	68.6	9.3	29.7	9.3	41	76	42	36	3,500	32,700
Renk/ RK692CBLRW	Bt,CRW,LL	105	65.6	9.3	26.9	9.1	41	76	43	36	3,510	32,500
NuTech Seed/ 3T-302 VT3	Bt,CRW,GLY	102	66.1	9.2	27.1	9.2	42	76	43	37	3,530	32,400
DeKalb/ DKC50-44	Bt,CRW,GLY	100	64.8	9.4	26.6	8.3	43	75	41	36	3,430	32,100
Legacy Seeds/ L-5350 CBLTGT	Bt,GLY,LL	104	65.5	9.4	27.2	8.8	43	75	42	36	3,420	32,100
Jung Seed Genetic/ HDS 7105VT3	Bt,CRW,GLY	109	69.6	9.7	31.9	9.4	48	73	43	29	3,280	31,800
Pioneer Brand/ 34A89	Bt,CRW,GLY,LL	110	69.1	9.6	31.0	9.9	46	74	43	31	3,320	31,800
DeKalb/ DKC54-49	Bt,CRW,GLY	104	67.7	9.4	28.9	9.0	45	74	42	34	3,370	31,600
DeKalb/ DKC55-82	GLY	105	69.6	9.3	30.5	9.6	44	75	43	33	3,420	31,600
Midwest Seed Genetic/ 70505VT3	Bt,CRW,GLY	101	65.7	8.7	25.3	8.8	40	77	43	38	3,610	31,400
Hyland Seeds/ HL S067		103	67.5	9.5	29.2	9.1	46	73	40	31	3,280	31,100
Gold Country Seed/ 100-11 SSVT3	Bt,CRW,GLY,Lf	100	65.9	9.3	27.2	8.8	45	74	42	33	3,340	31,000
Trelay/ 6T226	Bt,CRW,GLY	106	66.0	9.2	26.9	8.7	46	73	42	33	3,370	30,800
NuTech Seed/ 3T-500A VT3	Bt,CRW,GLY	100	63.3	9.0	24.5	8.8	43	75	41	36	3,380	30,400
Hyland Seeds/ HL B49R	Bt,GLY	100	67.0	8.9	26.9	9.6	45	74	43	35	3,410	30,300
Crow's/ 1928R	GLY	99	65.6	9.0	26.2	9.4	45	74	42	35	3,350	30,100
Hyland Seeds/ HL CVR64	Bt,CRW,GLY	97	64.2	8.8	24.5	9.1	43	75	42	36	3,410	30,000
Midwest Seed Genetic/ 69805VT3	Bt,CRW,GLY	98	62.6	8.9	23.7	8.5	42	75	40	38	3,390	30,000
Dairyland/ HiD.F.-3000-6	GLY	100	67.1	8.9	27.0	9.1	46	74	43	32	3,340	29,700
Fielders Choice/ NG 6520	Bt,CRW,GLY	98	65.0	9.1	26.1	8.2	45	73	40	35	3,260	29,700
DeKalb/ DKC52-59	Bt,CRW,GLY	102	65.1	9.1	26.2	8.6	45	73	39	36	3,230	29,600
Renk/ RK698RRYGRW	CRW,GLY	104	63.1	8.7	23.5	8.5	42	76	41	37	3,410	29,500
DeKalb/ DKC50-19	Bt,CRW,GLY	100	64.8	8.3	23.6	8.9	42	76	44	38	3,520	29,200
DeKalb/ DKC38-89	Bt,CRW,GLY	89	61.4	8.6	22.4	8.9	44	75	42	38	3,360	29,000
Jung Seed Genetic/ HDS 66W46		104	67.1	8.9	27.1	9.2	47	72	41	30	3,230	28,700
Mycogen/ TMF 2W587	Bt,CRW	105	67.1	8.1	24.5	9.9	43	77	45	34	3,550	28,600
DeKalb/ DKC45-79	Bt,CRW,GLY	95	64.2	8.4	23.5	8.8	44	74	41	37	3,380	28,500
Fielders Choice/ NG 6686	Bt,CRW,GLY	107	67.3	8.5	25.9	9.2	46	74	44	32	3,360	28,500
Hyland Seeds/ HL SVT50	Bt,CRW,GLY	101	71.3	8.7	30.3	8.9	47	73	43	28	3,280	28,500
Jung Seed Genetic/ HDS 76V78		107	69.0	8.8	28.4	9.2	48	72	42	29	3,220	28,500
Wensman Seed/ W 7143VT3	Bt,CRW,GLY	93	64.3	8.3	23.1	9.1	45	74	42	35	3,320	27,400
DeKalb/ DKC41-60	Bt,CRW,GLY	91	61.6	8.5	22.2	8.4	46	73	41	35	3,200	27,300
DeKalb/ DKC53-17	Bt,CRW,GLY	103	67.2	7.9	24.0	9.1	45	74	43	34	3,400	26,800
Renk/ RK632RRYGPL	Bt,CRW,GLY	102	65.2	8.7	24.9	8.4	49	71	40	29	3,080	26,700
DeKalb/ DKC43-27	Bt,CRW,GLY	93	63.0	7.8	21.0	9.0	42	76	42	38	3,410	26,500
Producers Hybrids/ 5624VT3	Bt,CRW,GLY	96	60.7	8.0	20.4	8.6	43	74	41	39	3,300	26,500
Renk/ RK616VT3	Bt,CRW,GLY	102	65.0	8.2	23.5	8.4	47	72	40	33	3,220	26,500
Gold Country Seed/ 98-11 SSRR	GLY,Lf	98	67.3	8.4	25.7	8.4	48	71	39	30	3,150	26,400
Wensman Seed/ W 7107VT3	Bt,CRW,GLY	90	59.6	8.7	21.5	8.6	48	71	39	35	3,020	26,200
DeKalb/ DKC48-46	Bt,CRW,GLY	98	62.5	8.6	22.9	7.9	47	71	38	30	3,030	26,000
Hyland Seeds/ HL S047		99	64.4	7.9	22.1	8.7	46	73	41	32	3,260	25,700
Trelay/ 6T672	Bt,CRW,GLY	107	67.1	8.1	24.7	8.3	48	71	39	30	3,150	25,600
Mycogen/ TMF 2N422	GLY	94	61.8	8.2	21.3	9.0	49	71	40	32	3,050	24,900
Jung Seed Genetic/ HDS 6098QVTRW/R	CRW,GLY	98	68.3	7.8	24.7	8.9	50	71	42	28	3,130	24,500
<b>mean</b>			<b>65.6</b>	<b>8.9</b>	<b>26.1</b>	<b>8.9</b>	<b>45</b>	<b>74</b>	<b>42</b>	<b>34</b>	<b>3,350</b>	<b>29,800</b>
<b>LSD(0.10)</b>			<b>2.7</b>	<b>1.2</b>	<b>3.2</b>	<b>0.7</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>250</b>	<b>5,200</b>
<b>CV</b>			<b>3.6</b>	<b>12.1</b>	<b>10.5</b>	<b>6.8</b>	<b>8.9</b>	<b>3.8</b>	<b>4.9</b>	<b>13.8</b>	<b>6.3</b>	<b>14.9</b>

<sup>1</sup> Bt, CRW, GLY, LL, Lf traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate, Liberty Link<sup>R</sup> (glufosinate-ammonium) herbicide resistance, and leafy trait, respectively.

<sup>2</sup> DM yield is whole-plant corn yield at 100% dry matter; Silage yield is whole-plant corn yield at harvest moisture.

<sup>3</sup> Quality concentration expressed as a % of DM, except NDFD which is expressed as a % of NDF. Refer to *Results Provided* text for additional information.

<sup>4</sup> Milk production was estimated using spreadsheet MILK2006 developed at the University of Wisconsin. Refer to *Results Provided* text for additional information.

**Table 4.** Relative maturity (RM), whole-plant moisture (Moist), dry matter and silage yield and quality traits for corn hybrids planted at Melrose, MN (Stearns County) in 2008.

Brand/ Hybrid entry	Traits <sup>1</sup>	RM	Moist %	Yield <sup>2</sup>		Quality (concentration) <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	silage	CP	NDF	IVD	NDFD	Starch	Ton	Acre
				- ton/ acre -		%					lb/ ton	lb/ acre
DeKalb/ DKC55-24	Bt,CRW,GLY	105	66.6	9.2	27.6	9.2	42	76	44	39	3,610	33,300
Pioneer Brand/ 35F40	Bt,GLY,LL	107	66.4	8.7	25.8	9.7	42	77	44	40	3,590	31,100
Trelay/ 6T226	Bt,CRW,GLY	106	65.5	9.0	26.0	9.1	45	74	43	35	3,440	30,900
Gold Country Seed/ 98-11 SSRR	GLY,Lf	98	68.2	9.3	29.2	9.2	47	72	41	34	3,290	30,500
Pioneer Brand/ 34A89	Bt,CRW,GLY,LL	110	69.6	9.0	29.5	9.2	44	74	41	32	3,400	30,500
DeKalb/ DKC50-19	Bt,CRW,GLY	100	67.0	8.6	26.0	9.8	45	75	45	38	3,530	30,400
Midwest Seed Genetic/ 70505VT3	Bt,CRW,GLY	101	67.0	8.8	26.8	9.3	44	74	42	36	3,440	30,400
Renk/ RK632RRYGPL	Bt,CRW,GLY	102	65.9	8.6	25.1	9.6	43	76	43	39	3,530	30,200
Fielders Choice/ NG 6686	Bt,CRW,GLY	107	65.5	8.6	24.8	8.8	44	75	44	34	3,510	30,000
Dairyland/ HiD.F.-3000-6	GLY	100	68.0	8.4	26.1	10.0	45	76	47	34	3,570	29,900
Jung Seed Genetic/ HDS 66W46		104	68.1	9.0	28.4	9.5	47	72	41	34	3,260	29,500
Legacy Seeds/ L-5350 CBLLGT	Bt,GLY,LL	104	68.4	9.0	28.5	9.4	47	72	40	34	3,270	29,500
Crow's/ 2155VT3	Bt,CRW,GLY	102	66.3	8.9	26.3	9.2	47	72	41	33	3,280	29,100
Renk/ RK698RRYGRW	CRW,GLY	104	63.8	8.5	23.5	9.3	43	75	41	39	3,410	29,100
Jung Seed Genetic/ HDS 6098QVTRW/R	CRW,GLY	98	66.8	8.7	26.1	8.9	45	73	40	35	3,340	29,000
DeKalb/ DKC43-27	Bt,CRW,GLY	93	63.6	8.5	23.4	9.4	44	74	41	40	3,370	28,700
G2 Genetics/ 5H-501 RR/HX	Bt,GLY,LL	101	67.3	8.1	24.8	9.2	42	76	43	37	3,530	28,700
Gold Country Seed/ 100-11 SSVT3	Bt,CRW,GLY,Lf	100	66.9	8.8	26.6	8.7	46	72	40	32	3,260	28,700
DeKalb/ DKC55-82	GLY	105	70.0	8.8	29.4	9.2	48	72	41	31	3,230	28,600
DeKalb/ DKC52-59	Bt,CRW,GLY	102	67.5	8.4	25.8	9.1	44	74	41	38	3,410	28,500
Mycogen/ TMF 2W587	Bt,CRW	105	68.1	8.4	26.4	9.0	46	74	42	32	3,380	28,400
DeKalb/ DKC48-46	Bt,CRW,GLY	98	65.7	8.7	25.5	8.7	48	71	40	34	3,230	28,200
Crow's/ 1928R	GLY	99	68.1	8.4	26.4	9.6	46	73	41	35	3,320	27,900
DeKalb/ DKC50-44	Bt,CRW,GLY	100	68.3	8.3	26.2	8.9	45	73	41	34	3,370	27,900
DeKalb/ DKC54-49	Bt,CRW,GLY	104	69.2	8.2	26.7	9.0	46	73	41	33	3,340	27,500
Producers Hybrids/ 5624VT3	Bt,CRW,GLY	96	67.1	8.0	24.4	8.4	45	74	42	37	3,400	27,300
Mycogen/ TMF 2N422	GLY	94	65.3	8.3	24.0	9.6	49	72	42	34	3,260	27,100
DeKalb/ DKC38-89	Bt,CRW,GLY	89	66.7	8.5	25.5	9.1	49	71	41	31	3,170	27,000
Fielders Choice/ NG 6520	Bt,CRW,GLY	98	66.7	8.0	24.1	8.8	45	73	40	37	3,320	26,600
Renk/ RK692CBLLRW	Bt,CRW,LL	105	68.3	7.5	23.6	9.7	43	76	45	37	3,550	26,500
DeKalb/ DKC53-17	Bt,CRW,GLY	103	68.8	8.0	25.6	8.6	47	72	41	34	3,300	26,400
Hyland Seeds/ HL B49R	Bt,GLY	100	66.9	7.6	23.0	8.7	44	75	42	37	3,470	26,400
DeKalb/ DKC45-79	Bt,CRW,GLY	95	67.2	7.5	22.7	9.0	43	75	42	38	3,510	26,200
Midwest Seed Genetic/ 69805VT3	Bt,CRW,GLY	98	67.9	7.9	24.5	9.4	46	73	41	34	3,330	26,200
Hyland Seeds/ HL CVR64	Bt,CRW,GLY	97	65.1	7.8	22.3	9.6	46	73	41	36	3,350	26,100
Jung Seed Genetic/ HDS 7105VT3	Bt,CRW,GLY	109	71.8	8.2	29.1	9.5	48	71	40	29	3,180	26,100
DeKalb/ DKC41-60	Bt,CRW,GLY	91	64.0	7.7	21.5	9.0	46	72	40	37	3,320	25,700
Hyland Seeds/ HL SR59	RR	101	70.7	7.9	26.8	8.6	46	72	41	29	3,260	25,700
Renk/ RK616VT3	Bt,CRW,GLY	102	66.9	7.5	22.8	9.8	45	74	42	37	3,380	25,500
NuTech Seed/ 3T-500A VT3	Bt,CRW,GLY	100	67.5	8.0	24.6	8.7	49	71	40	32	3,180	25,400
Wensman Seed/ W 7107VT3	Bt,CRW,GLY	90	63.4	7.7	21.1	9.4	45	74	41	36	3,280	25,400
Hyland Seeds/ HL S067		103	69.7	8.4	27.6	8.4	51	68	38	26	2,980	24,900
Producers Hybrids/ 6634VT3	Bt,CRW,GLY	106	68.5	7.7	24.6	8.6	46	72	39	32	3,190	24,600
NuTech Seed/ 3T-302 VT3	Bt,CRW,GLY	102	68.9	7.1	22.7	8.8	44	75	44	32	3,450	24,400
Trelay/ 6T672	Bt,CRW,GLY	107	67.1	7.4	22.4	8.5	45	72	38	33	3,230	23,900
Hyland Seeds/ HL B337	Bt	105	71.5	7.3	25.6	10.0	48	72	42	29	3,240	23,600
Jung Seed Genetic/ HDS 76V78		107	70.3	7.3	24.7	8.5	48	70	39	27	3,100	22,700
Wensman Seed/ W 7143VT3	Bt,CRW,GLY	93	66.2	6.5	19.3	9.4	43	75	42	37	3,460	22,600
Hyland Seeds/ HL SVT50	Bt,CRW,GLY	101	71.0	7.0	24.1	9.1	48	72	41	28	3,200	22,400
Hyland Seeds/ HL S047		99	66.4	7.3	21.6	9.3	52	69	40	30	3,080	22,300
Fielders Choice/ NG 6720	Bt,CRW,GLY	108	69.6	6.8	22.3	8.7	49	70	38	28	3,060	20,800
<b>mean</b>			<b>67.5</b>	<b>8.2</b>	<b>25.1</b>	<b>9.1</b>	<b>46</b>	<b>73</b>	<b>41</b>	<b>34</b>	<b>3,340</b>	<b>27,200</b>
<b>LSD(0.10)</b>			<b>2.3</b>	<b>1.2</b>	<b>4.0</b>	<b>ns</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>5</b>	<b>230</b>	<b>4,900</b>
<b>CV</b>			<b>2.9</b>	<b>13.1</b>	<b>13.6</b>	<b>8.3</b>	<b>8.5</b>	<b>3.9</b>	<b>6.4</b>	<b>12.8</b>	<b>6.0</b>	<b>15.5</b>

<sup>1</sup> Bt, CRW, GLY, LL, Lf traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate, Liberty Link <sup>R</sup> (glufosinate-ammonium) herbicide resistance, and leafy trait, respectively.

<sup>2</sup> **DM** yield is whole-plant corn yield at 100% dry matter; **Silage** yield is whole-plant corn yield at harvest moisture.

<sup>3</sup> Quality concentration expressed as a % of DM, except NDFD which is expressed as a % of NDF. Refer to *Results Provided* text for additional information.

<sup>4</sup> Milk production was estimated using spreadsheet MILK2006 developed at the University of Wisconsin. Refer to *Results Provided* text for additional information.

**Table 5.** Relative maturity (RM), whole-plant moisture (Moist), dry matter and silage yield and quality traits for corn hybrids planted at Ottertail, MN (Otter Tail County) in 2008.

Brand/ Hybrid entry	Traits <sup>1</sup>	RM	Moist	Yield <sup>2</sup>		Quality (concentration) <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	silage	CP	NDF	IVD	NDFD	Starch	Ton	Acre
			%	- ton/ acre -		%					lb/ ton	lb/ acre
DeKalb/ DKC50-42	Bt,CRW,GLY	100	69.0	7.7	25.0	9.2	42	79	51	31	3,310	25,700
Pioneer Brand/ 38P43	Bt,CRW,GLY,LL	94	66.1	7.8	23.0	8.5	43	77	47	31	3,180	24,700
Pioneer Brand/ 37N16	Bt,CRW,GLY,LL	97	69.2	7.6	24.6	8.7	45	76	46	30	3,070	23,300
Elite/ MATRIX		98	71.0	7.7	26.4	8.1	44	76	46	26	2,990	23,000
Hyland Seeds/ HL SR35	GLY,Lf	89	68.1	7.0	22.1	9.2	45	76	47	32	3,110	21,900
Crop Production Service/ V3640		94	66.7	7.4	22.2	8.2	46	74	44	28	2,960	21,900
DeKalb/ DKC45-79	Bt,CRW,GLY	95	68.9	7.9	25.3	8.6	51	72	45	25	2,760	21,700
Pioneer Brand/ 35F37	GLY	107	64.4	7.0	19.7	8.8	46	76	47	32	3,060	21,500
DeKalb/ DKC42-91	Bt,CRW,GLY	92	68.5	7.0	22.1	8.6	45	76	47	29	3,070	21,400
NuTech Seed/ 3U-997	CRW,GLY,Lf	97	66.9	7.0	21.1	9.4	48	75	48	28	3,000	21,000
Hyland Seeds/ HL S038	Bt,GLY	89	69.8	6.7	22.0	9.4	45	76	48	29	3,080	20,500
Dairyland/ HiDF-3094-6	GLY	94	71.3	7.5	26.2	8.1	48	72	42	22	2,690	20,200
NuTech Seed/ 3A-306	GLY,Lf	106	65.9	6.8	20.0	8.8	47	74	44	28	2,930	20,000
Dairyland/ HiDF-3098		98	68.2	6.7	21.1	8.7	46	75	45	26	2,970	19,900
Hyland Seeds/ HL SR42	GLY,Lf	95	67.9	6.9	21.6	8.8	50	71	43	25	2,730	18,900
NuTech Seed/ 5H-298	Bt,CRW,GLY	96	69.3	6.5	21.2	8.9	49	74	46	26	2,920	18,900
<b>mean</b>			<b>68.2</b>	<b>7.2</b>	<b>22.7</b>	<b>8.8</b>	<b>46</b>	<b>75</b>	<b>46</b>	<b>28</b>	<b>2,990</b>	<b>21,500</b>
<b>LSD(0.10)</b>			<b>1.4</b>	<b>0.5</b>	<b>1.5</b>	<b>0.6</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>180</b>	<b>2,100</b>
<b>CV</b>			<b>1.5</b>	<b>5.2</b>	<b>4.8</b>	<b>5.1</b>	<b>4.5</b>	<b>1.9</b>	<b>3.9</b>	<b>8.0</b>	<b>4.3</b>	<b>6.9</b>

<sup>1</sup> Bt, CRW, GLY, LL, Lf traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate, Liberty Link <sup>R</sup> (glufosinate-ammonium) herbicide resistance, and leafy trait, respectively.

<sup>2</sup> **DM** yield is whole-plant corn yield at 100% dry matter; **Silage** yield is whole-plant corn yield at harvest moisture.

<sup>3</sup> Quality concentration expressed as a % of DM, except NDFD which is expressed as a % of NDF. Refer to *Results Provided* text for additional information.

<sup>4</sup> Milk production was estimated using spreadsheet MILK2006 developed at the University of Wisconsin. Refer to *Results Provided* text for additional information.