

## Corn Silage

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The Minnesota Hybrid Corn Silage Evaluation Program evaluates the silage potential of corn hybrids in Minnesota. The program's goal 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. These locations are important dairy regions of Minnesota.

### Companies participating in 2009 hybrid corn silage performance trials.

AgriGold Hybrids	www.agrigold.com
Anderson Seeds	37825 County Rd 63, St Peter, MN 56082
Channel Seeds	www.monsanto.com
Dahlco Seeds	www.dahlcoseeds.com
Dairyland Seed Co, Inc.	www.dairylandseed.com
Dekalb (Monsanto Co)	www.dekalb.com
Dyna-Gro Seeds	www.dynagroseed.com
G2 Genetics	www.yieldleader.com
Hyland Seeds	www.hylandseeds.com
Legacy Seeds, Inc.	www.legacyseeds.com
Mycogen Seeds	www.mycogen.com
Nu Tech Seed Co.	www.yieldleader.com
Pioneer Hi-Bred International	www.pioneer.com
Producers Hybrids	www.producershybrids.com
Renk Seed Co.	www.renkseed.com
Trelay Seeds	www.trelay.com
Wensman Seed Co.	www.wensmanseed.com

### Test Sites

Silage hybrids entered in the south-east 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:

La Crescent, (Houston County)  
Rochester (Olmsted County)

#### Central Dairy Region:

Paynesville (Stearns County)  
Melrose (Stearns County)

#### West-Central Dairy Region:

Ottertail (Otter Tail County)

### Test Procedure

#### Southeast and Central Regions

**Design:** Plots were established at La Crescent, Rochester, Paynesville and Melrose in randomized complete block designs with four replications. Hybrids were planted at 33,000 seed per acre with 30-inch row spacing. La Crescent and Rochester sites were planted on April 27 and April 24, respectively. The Central sites, Paynesville and Melrose, were both planted on May 7, 2009. Plant nutrients as manure or inorganic fertilizer

were applied according to University of Minnesota recommendation. Weeds were controlled using standard cultivation and herbicide application practices.

**Harvesting:** Plots were harvested and whole-plant herbage sampled for dry matter and forage quality analysis. Each site was harvested when the average whole-plant moisture across entries was estimated to be 65%. In 2009, harvest dates at La Crescent, Rochester, Paynesville and Melrose were September 18, September 23, September 24 and September 29, respectively.

#### West-Central Region

**Design:** Plots near Ottertail were established May 5 under center-pivot irrigation in a randomized complete block design with three replications. Hybrids were planted at 35,700 seeds per acre with 30-inch row spacing. Fertilizer was fall-applied liquid manure at 8,000 gallons per acre plus 150 pounds of urea in 2009. 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 30.

### Results Provided

Tables 1-5 summarize hybrid yield and forage quality results from La Crescent, Rochester, Paynesville, Melrose and Ottertail, respectively. Hybrid trait information is supplied by companies entered in the hybrid corn silage trial. 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). 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 (1,350-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. Milk production (lb milk/ton and lb milk/acre) values can be used as a quick reference for relative comparison of hybrids within test locations.

### 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 significant difference between the two hybrids for that parameter (i.e. moisture, yield, quality concentration, or milk production).

### Test Plot Research

Test plot establishment and management were supervised by T.R. Hoverstad, M.D. Bickell, L.M. Behnken, F.R. Breitenbach, D.L. Holen and P. Glogoza.

**Table 1. Relative maturity (RM), whole-plant moisture (Moist), dry matter and silage yield and quality traits for corn hybrids planted at La Crescent (Houston County) in 2009.**

Brand / Hybrid Entry	Traits <sup>1</sup>	RM	Moist		Yield, Ton/Acre <sup>2</sup>		Quality (Concentration), % <sup>3</sup>					Milk Yield <sup>4</sup>	
			%	DM	Silage	CP	NDF	IVD	NDFD	Starch	Lb/ Ton	Lb/ Acre	
Mycogen/ TMF2Q716	Bt,CRW,GLY,LL	109	66.2	13.1	38.6	7.5	41	80	48	36	3,160	41,400	
AgriGold Hybrids/ A6439VT3	Bt,CRW,GLY	109	68.6	12.4	39.4	8.2	41	79	49	36	3,230	40,000	
Legacy Seeds Inc/ L-5350 GTCBLL	Bt,GLY,LL	104	63.7	11.8	32.4	6.8	37	81	49	41	3,360	39,600	
Dekalb/ DKC53-41(VT3)	Bt, CRW, GLY	103	60.4	12.5	31.5	6.7	40	79	49	38	3,150	39,200	
Dekalb/ DKC59-64(VT3)	Bt, CRW, GLY	109	68.1	12.2	38.2	6.9	41	79	49	37	3,220	39,200	
Legacy Seeds Inc/ L-5309 GT	GLY	104	65.9	11.7	34.2	6.9	38	81	49	39	3,340	39,000	
Renk/ RK829VT3	Bt, CRW, GLY	112	68.0	12.0	37.6	7.4	40	78	47	38	3,230	38,800	
Renk/ RK711RRHXTRA	Bt,CRW,GLY,LL	107	68.9	12.5	40.1	7.4	43	79	48	35	3,090	38,500	
Trelay/ 6VT981	Bt,CRW,GLY	107	66.8	11.5	34.6	7.4	38	79	48	40	3,340	38,400	
Producers Hybrids/ 7325 VT3	Bt, CRW, GLY	113	70.4	12.0	40.6	7.8	42	79	47	36	3,150	37,900	
Legacy Seeds Inc/ L-6609 HXTRR	Bt,CRW,GLY,LL	108	69.4	12.0	39.3	7.1	41	80	47	36	3,140	37,700	
Pioneer Brand/ 34A89	Bt, CRW, GLY	110	67.8	11.9	37.0	7.4	41	79	48	35	3,150	37,600	
Dekalb/ DKC61-69(VT3)	Bt, CRW, GLY	111	66.8	11.6	34.8	7.4	40	80	48	37	3,240	37,500	
Anderson Seeds/ 103R	GLY	102	65.0	11.3	32.2	7.5	39	81	49	38	3,290	37,100	
Renk/ RK844VT3	Bt, CRW, GLY	111	68.9	11.5	36.9	7.4	41	79	48	36	3,180	36,400	
Channel/ 210-61VT3 Brand	Bt, CRW, GLY	110	68.2	11.7	36.8	7.3	42	78	48	35	3,110	36,300	
G2 Genetics/ 5X-909 RR/HXT	Bt,CRW,GLY,LL	109	68.0	11.7	36.5	7.8	42	79	48	35	3,110	36,300	
Channel/ 209-77VT3 Brand	Bt, CRW, GLY	109	67.3	10.9	33.2	7.5	39	79	50	38	3,310	36,000	
Mycogen/ TMF2Q759	Bt,CRW,GLY,LL	113	71.0	11.7	40.3	7.3	43	78	48	33	3,080	36,000	
NuTech Seed/ 5N-809 GT/CB/LL	Bt,CRW,GLY,LL	109	69.3	11.4	37.2	7.0	42	79	48	34	3,140	35,800	
Renk/ RK744VT3	Bt, CRW, GLY	107	67.1	11.3	34.3	7.1	41	79	47	37	3,160	35,600	
NuTech Seed/ 3T-013 VT3	Bt, CRW, GLY	113	68.6	10.8	34.5	7.5	39	79	48	38	3,280	35,500	
Mycogen/ TMF2R521	Bt,CRW,GLY	98	65.4	10.7	31.0	7.2	39	80	47	39	3,260	35,000	
AgriGold Hybrids/ A6309VT3	Bt,CRW,GLY	103	67.6	10.7	33.0	6.6	39	80	47	39	3,250	34,800	
Anderson Seeds/ 103 VT3	Bt, CRW, GLY	103	66.5	10.6	31.8	7.1	40	80	49	38	3,260	34,700	
Trelay/ 7T231	Bt,CRW,GLY	111	69.1	10.6	34.4	7.1	40	79	48	38	3,250	34,500	
AgriGold Hybrids/ A6323CL	CL	103	66.7	10.5	31.6	6.7	41	80	49	36	3,230	34,100	
AgriGold Hybrids/ A6459VT3	Bt,CRW,GLY	110	69.7	10.6	35.0	7.4	41	80	47	37	3,170	33,600	
Trelay/ 6T226	Bt,CRW,GLY	106	66.1	10.5	31.1	7.0	42	79	48	36	3,130	33,000	
Wensman Seed/ W 7562VT3	Bt, CRW, GLY	111	70.2	10.2	34.3	7.5	41	79	48	37	3,220	32,900	
Dekalb/ DKC50-44(VT3)	Bt, CRW, GLY	100	67.5	10.0	30.7	7.2	40	79	49	38	3,290	32,800	
Dekalb/ DKC57-50(VT3)	Bt, CRW, GLY	107	66.9	10.5	31.7	6.2	43	79	48	36	3,110	32,700	
NuTech Seed/ 3T-413 VT3	Bt, CRW, GLY	113	69.2	10.4	33.8	7.1	42	79	48	35	3,140	32,700	
AgriGold Hybrids/ A6279VT3	Bt,CRW,GLY	101	68.7	10.2	32.8	7.5	42	78	48	36	3,160	32,400	
Mycogen/ 2W587	Bt,CRW,GLY,LL	104	68.4	10.0	31.8	8.2	42	79	47	37	3,120	31,300	
Trelay/ 5T429	Bt,CRW,GLY	102	67.6	9.9	30.6	7.3	42	79	49	35	3,160	31,300	

**Table 1 (continued). Relative maturity (RM), whole-plant moisture (Moist), dry matter and silage yield and quality traits for corn hybrids planted at La Crescent (Houston County) in 2009.**

Brand / Hybrid Entry	Traits <sup>1</sup>	RM	Moist %	Yield, Ton/Acre <sup>2</sup>		Quality (Concentration), % <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	Silage	CP	NDF	IVD	NDFD	Starch	Lb/ Ton	Lb/ Acre
Channel/ 207-07VT3 Brand	Bt, CRW, GLY	107	69.1	10.0	32.2	7.5	42	80	47	36	3,110	31,000
Producers Hybrids/ 7077 VT3	Bt, CRW, GLY	110	72.1	10.1	36.1	8.0	43	80	47	33	3,010	30,300
Pioneer Brand/ 33D14	Bt, CRW, GLY	113	69.3	9.8	31.8	7.4	44	78	48	33	3,040	29,700
Wensman Seed/ W 7455VT3	Bt, CRW, GLY	107	69.8	9.6	31.8	7.6	42	79	47	35	3,090	29,700
Dekalb/ DKC55-07(VT3)	Bt, CRW, GLY	105	64.3	10.2	28.5	7.4	43	74	47	36	2,900	29,500
Dekalb/ DKC54-49(VT3)	Bt, CRW, GLY	104	69.6	8.6	28.1	7.2	43	79	48	35	3,090	26,400
Mean	—	—	67.8	11.0	34.3	7.3	41	79	48	37	3,180	35,000
LSD(0.10)	—	—	3.4	1.6	3.4	0.4	ns	ns	2	ns	ns	5,400
CV	—	—	4.3	12.5	8.3	4.8	7.2	2.3	2.9	9.5	6.3	13.1

<sup>1</sup> Bt, CRW, GLY, LL, Lf traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate, Liberty LinkR (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 (Olmsted County) in 2009.**

Brand / Hybrid Entry	Traits <sup>1</sup>	RM	Moist %	Yield, Ton/Acre <sup>2</sup>		Quality (Concentration), % <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	Silage	CP	NDF	IVD	NDFD	Starch	Lb/ Ton	Lb/ Acre
Channel/ 209-77VT3 Brand	Bt, CRW, GLY	109	69.0	10.8	34.8	7.5	44	78	49	35	3,090	33,400
AgriGold Hybrids/ A6323CL	CL	103	69.3	10.4	33.7	6.4	41	79	49	37	3,200	33,100
AgriGold Hybrids/ A6309VT3	Bt,CRW,GLY	103	68.0	10.4	32.3	6.4	41	78	47	39	3,160	32,800
AgriGold Hybrids/ A6439VT3	Bt,CRW,GLY	109	69.7	11.3	37.4	7.3	46	76	47	32	2,900	32,800
Channel/ 210-61VT3 Brand	Bt, CRW, GLY	110	70.1	11.0	36.8	7.2	46	77	50	32	2,980	32,700
Trelay/ 7T231	Bt,CRW,GLY	111	70.2	10.6	35.7	7.4	43	78	47	35	3,010	31,900
Pioneer Brand/ 34A89	Bt, CRW, GLY	110	71.2	10.7	37.0	7.2	47	77	50	31	2,960	31,500
Mycogen/ TMF2Q716	Bt,CRW,GLY,LL	109	70.1	10.3	34.3	7.5	46	77	48	33	2,960	30,400
Trelay/ 6VT981	Bt,CRW,GLY	107	70.6	9.8	33.5	7.4	42	79	48	35	3,090	30,300
NuTech Seed/ 3T-413 VT3	Bt, CRW, GLY	113	70.2	10.0	33.5	6.7	44	78	46	35	2,990	29,900
Channel/ 207-07VT3 Brand	Bt, CRW, GLY	107	70.2	9.7	32.6	7.4	43	77	48	36	3,060	29,700
Pioneer Brand/ 33D14	Bt, CRW, GLY	113	69.9	10.1	33.6	7.3	47	76	48	31	2,870	29,000
Anderson Seeds/ 103R	GLY	102	68.4	9.7	30.9	7.0	46	77	48	32	2,960	28,800
Dekalb/ DKC53-41(VT3)	Bt, CRW, GLY	103	70.5	9.5	32.1	7.3	45	77	49	34	3,040	28,800
Renk/ RK844VT3	Bt, CRW, GLY	111	71.2	9.4	32.7	7.3	43	78	48	34	3,060	28,800
Dekalb/ DKC57-50(VT3)	Bt, CRW, GLY	107	68.8	9.4	30.2	6.0	45	76	49	34	3,050	28,700
Producers Hybrids/ 7325 VT3	Bt, CRW, GLY	113	70.7	9.8	33.4	7.3	46	77	48	31	2,920	28,700
AgriGold Hybrids/ A6279VT3	Bt,CRW,GLY	101	68.5	9.2	29.1	7.4	44	78	50	35	3,110	28,600
Dekalb/ DKC59-64(VT3)	Bt, CRW, GLY	109	69.6	10.1	33.3	7.0	47	75	47	30	2,820	28,500
Anderson Seeds/ 103 VT3	Bt, CRW, GLY	103	68.5	9.1	28.9	7.2	43	78	48	36	3,110	28,300
Renk/ RK744VT3	Bt, CRW, GLY	107	71.3	9.0	31.5	6.9	42	79	48	36	3,120	28,200
Producers Hybrids/ 7077 VT3	Bt, CRW, GLY	110	71.4	9.3	32.6	7.8	45	78	49	33	3,020	28,100
Dekalb/ DKC55-07(VT3)	Bt, CRW, GLY	105	68.7	8.8	28.3	7.1	42	79	49	37	3,160	27,900
Renk/ RK829VT3	Bt, CRW, GLY	112	71.4	9.5	33.3	7.1	47	76	49	30	2,920	27,900
Legacy Seeds Inc/ L-6609 HXTRR	Bt,CRW,GLY,LL	108	72.0	9.5	34.0	7.4	47	76	49	31	2,900	27,500
Mycogen/ 2W587	Bt,CRW,GLY,LL	104	70.0	9.1	30.3	6.9	45	77	48	34	3,020	27,500
Legacy Seeds Inc/ L-5350 GTCBLL	Bt,GLY,LL	104	71.3	8.8	30.6	6.6	43	79	49	36	3,130	27,400
Dekalb/ DKC61-69(VT3)	Bt, CRW, GLY	111	70.0	9.2	30.6	7.5	45	77	48	33	2,970	27,300
G2 Genetics/ 5X-909 RR/HXT	Bt,CRW,GLY,LL	109	71.1	9.1	31.6	7.5	46	77	49	32	2,980	27,100
Mycogen/ TMF2Q759	Bt,CRW,GLY,LL	113	72.3	9.9	35.6	7.2	50	76	49	25	2,740	27,100
NuTech Seed/ 3T-013 VT3	Bt, CRW, GLY	113	71.8	9.0	32.0	7.7	46	77	50	32	2,940	26,400
Renk/ RK711RRHXTRA	Bt,CRW,GLY,LL	107	71.0	8.8	30.4	7.2	47	76	48	32	2,930	25,800
Trelay/ 6T226	Bt,CRW,GLY	106	70.2	8.9	30.0	6.7	49	75	49	30	2,870	25,600
Dekalb/ DKC50-44(VT3)	Bt, CRW, GLY	100	68.4	8.3	26.3	6.6	45	77	49	35	3,040	25,300
Mycogen/ TMF2R521	Bt,CRW,GLY	98	71.2	8.1	28.1	7.2	43	78	49	35	3,110	25,200
Legacy Seeds Inc/ L-5309 GT	GLY	104	71.4	8.2	28.7	7.2	45	77	50	34	3,040	25,000
Trelay/ 5T429	Bt,CRW,GLY	102	69.9	8.2	27.3	6.9	46	77	49	33	2,980	24,500
NuTech Seed/ 5N-809 GT/CB/LL	Bt,CRW,GLY,LL	109	71.6	8.4	29.5	6.9	47	76	48	30	2,870	24,000
Wensman Seed/ W 7562VT3	Bt, CRW, GLY	111	72.8	8.4	30.7	7.6	47	77	48	31	2,860	23,900
Wensman Seed/ W 7455VT3	Bt, CRW, GLY	107	72.0	8.2	29.2	7.4	45	77	47	32	2,900	23,800

**Table 2 (continued). Relative maturity (RM), whole-plant moisture (Moist), dry matter and silage yield and quality traits for corn hybrids planted at Rochester (Olmsted County) in 2009.**

Brand / Hybrid Entry	Traits <sup>1</sup>	RM, Rating	Moist %	Yield, Ton/Acre <sup>2</sup>		Quality (Concentration), % <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	Silage	CP	NDF	IVD	NDFD	Starch	Lb/ Ton	Lb/ Acre
AgriGold Hybrids/ A6459VT3	Bt,CRW,GLY	110	72.1	7.9	28.4	7.3	45	78	47	33	2,960	23,400
Dekalb/ DKC54-49(VT3)	Bt, CRW, GLY	104	70.4	7.7	26.1	6.9	45	77	48	34	2,980	23,100
Mean	—	—	70.4	9.4	31.7	7.1	45	77	48	33	2,990	28,100
LSD(0.10)	—	—	2.1	1.5	4.4	0.6	2	1	2	3	130	5,000
CV	—	—	2.6	13.8	12.0	7.1	4.2	1.4	2.8	6.7	3.6	15.2

<sup>1</sup> Bt, CRW, GLY, LL, Lf traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate, Liberty LinkR (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 (Stearns County) in 2009.**

Brand / Hybrid Entry	Traits <sup>1</sup>	RM	Moist %	Yield, Ton/Acre <sup>2</sup>		Quality (Concentration), % <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	Silage	CP	NDF	IVD	NDFD	Starch	Lb/ Ton	Lb/ Acre
Legacy Seeds Inc/ L-5350 GTCBLL	Bt,GLY,LL	104	68.6	10.0	31.7	7.1	39	80	48	41	3,290	32,800
Dyna-Gro/ V4592VTNS	Bt, CRW, GLY	105	72.9	10.5	38.9	9.2	43	79	47	36	3,080	32,500
Trelay/ 6VT981	Bt,CRW,GLY	107	70.1	9.8	32.6	7.8	40	79	47	40	3,200	31,200
Dekalb/ DKC53-41 (VT3)	Bt, CRW, GLY	103	68.9	10.1	32.4	7.1	44	77	47	36	3,040	30,600
Dekalb/ DKC55-07 (VT3)	Bt, CRW, GLY	105	68.0	9.3	29.1	8.0	41	79	49	41	3,260	30,400
Dahlco/ 8041 GTCBLL	Bt,GLY,LL	104	68.3	9.5	29.8	7.2	41	78	47	39	3,180	30,100
Dekalb/ DKC52-59 (VT3)	Bt, CRW, GLY	102	70.7	9.4	32.0	7.0	41	79	48	39	3,190	29,900
Renk/ RK698VT3	Bt, CRW, GLY	103	69.0	9.6	30.9	7.1	43	78	47	37	3,090	29,500
Renk/ RK692GTCBLLRW	Bt,CRW,GLY,LL	105	71.3	9.7	33.8	8.7	42	79	45	37	3,050	29,500
Dekalb/ DKC50-44 (VT3)	Bt, CRW, GLY	100	69.3	9.2	29.9	7.1	40	80	47	39	3,200	29,300
Dekalb/ DKC59-64 (VT3)	Bt, CRW, GLY	109	73.6	10.2	38.6	7.2	46	76	46	32	2,880	29,300
Legacy Seeds Inc/ L-5309 GT	GLY	104	72.7	8.7	31.8	7.4	39	80	49	40	3,320	28,800
Wensman Seed/ W 7433VT3	Bt, CRW, GLY	105	69.9	9.4	31.1	7.3	42	78	46	38	3,070	28,800
Mycogen/ 2W587	Bt,CRW,GLY,LL	104	70.1	9.4	31.6	7.9	42	78	44	38	3,030	28,500
Channel/ 201-13VT3 Brand	Bt, CRW, GLY	105	70.3	9.0	30.3	7.5	42	79	49	36	3,150	28,400
Mycogen/ TMF2Q716	Bt,CRW,GLY,LL	109	71.6	10.3	36.2	7.7	47	76	43	32	2,760	28,400
Hyland Seeds/ HL SR59	GLY	101	73.8	9.8	37.5	7.7	46	77	46	31	2,880	28,300
Channel/ 200-22VT3 Brand	Bt, CRW, GLY	100	70.0	9.0	29.9	7.2	42	79	47	38	3,120	28,100
Dekalb/ DKC50-66 (VT3)	Bt, CRW, GLY	100	70.0	9.1	30.5	7.3	43	77	48	37	3,070	28,000
Trelay/ 5T128	Bt,CRW,GLY	101	69.7	8.8	29.2	7.7	40	79	46	39	3,160	27,900
Trelay/ 5T429	Bt,CRW,GLY	102	70.0	8.9	29.7	8.0	42	79	48	38	3,120	27,800
Producers Hybrids/ 6464 VT3	Bt, CRW, GLY	104	72.3	9.5	34.4	7.5	45	76	46	33	2,880	27,400
NuTech Seed/ 3T-098 VT3	Bt, CRW, GLY	96	70.3	9.2	31.0	7.8	44	76	45	37	2,960	27,300
Dekalb/ DKC61-69 (VT3)	Bt, CRW, GLY	111	72.4	9.5	34.3	7.8	45	77	45	34	2,880	27,200
NuTech Seed/ 5X-100 RR/HXT	Bt,CRW,GLY,LL	100	72.5	9.3	33.7	8.1	44	78	46	34	2,940	27,200
Pioneer Brand/ 35F40	Bt,GLY	105	71.1	9.1	31.5	8.1	45	77	47	35	2,990	27,200
Dyna-Gro/ 55R10	Bt,CRW,GLY,LL	101	72.3	9.0	32.6	7.8	43	78	45	36	2,980	26,900
Pioneer Brand/ 34A89	Bt, CRW, GLY	110	72.9	9.9	36.5	7.7	49	75	46	29	2,720	26,900
Wensman Seed/ W 7455VT3	Bt, CRW, GLY	107	73.8	8.8	33.5	8.0	44	78	47	34	2,980	26,200
Dekalb/ DKC55-64 (VT3)	Bt, CRW, GLY	105	69.7	8.6	28.4	8.2	45	77	46	37	2,980	25,600
NuTech Seed/ 3T-600 VT3	Bt, CRW, GLY	97	71.3	8.7	30.4	7.2	46	76	45	35	2,880	25,200
Pioneer Brand/ 36V53	Bt,GLY	102	71.1	8.0	27.8	8.0	42	78	47	37	3,100	24,900
Dekalb/ DKC48-37 (VT3)	Bt, CRW, GLY	98	67.1	7.9	24.1	7.4	41	78	45	40	3,080	24,400
Hyland Seeds/ HL SVT50	Bt,CRW,GLY	100	70.1	8.8	29.5	7.7	46	75	42	34	2,770	24,400
Producers Hybrids/ 5684 VT3	Bt, CRW, GLY	96	70.5	8.0	27.2	7.6	44	76	46	37	3,000	24,100
Dekalb/ DKC54-49 (VT3)	Bt, CRW, GLY	104	73.2	7.8	29.1	8.0	45	77	48	35	3,040	23,700
Dyna-Gro/ V3593VT3	Bt, CRW, GLY	95	69.0	7.8	25.2	7.0	45	76	44	36	2,880	22,600
NuTech Seed/ 3T-295 VT3	Bt, CRW, GLY	95	66.3	7.3	21.6	7.5	43	78	46	39	3,030	22,100
Trelay/ 2RR530	GLY	86	64.2	7.2	20.2	7.0	42	77	47	35	2,950	21,300
Mean	—	—	70.5	9.1	31.0	7.6	43	78	46	36	3,030	27,500
LSD(0.10)	—	—	2.7	1.3	3.3	0.5	4	2	2	4	210	4,900
CV	—	—	3.3	12.4	9.0	6.4	7.0	2.3	4.1	10.2	5.9	15.3

<sup>1</sup> CB, CRW, GLY, LL traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate and Liberty Link R (glufosinate-ammonium) herbicide resistance, 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, (Stearns County) in 2009.**

Brand / Hybrid Entry	Traits <sup>1</sup>	RM	Moist %	Yield, Ton/Acre <sup>2</sup>		Quality (Concentration), % <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	Silage	CP	NDF	IVD	NDFD	Starch	Lb/ Ton	Lb/ Acre
Dekalb/ DKC61-69 (VT3)	Bt, CRW, GLY	111	63.9	9.7	26.8	7.7	40	81	48	37	3,150	30,400
Dekalb/ DKC50-44 (VT3)	Bt, CRW, GLY	100	61.0	9.1	23.3	7.4	39	82	51	40	3,250	29,500
Dekalb/ DKC53-41 (VT3)	Bt, CRW, GLY	103	62.0	8.8	23.2	8.2	38	82	50	40	3,300	29,100
Wensman Seed/ W 7433VT3	Bt, CRW, GLY	105	63.1	9.0	24.3	7.7	38	82	50	39	3,240	29,100
Trelay/ 6VT981	Bt,CRW,GLY	107	66.4	8.8	26.2	8.4	39	82	50	39	3,300	29,000
Pioneer Brand/ 35F40	Bt, GLY	105	66.0	8.7	25.7	7.9	39	81	49	39	3,290	28,700
Mycogen/ 2W587	Bt,CRW,GLY,LL	104	64.3	8.9	24.9	8.4	40	82	49	37	3,210	28,500
NuTech Seed/ 3T-295 VT3	Bt, CRW, GLY	95	56.4	8.4	19.2	7.8	35	84	51	44	3,250	27,200
Trelay/ 5T128	Bt,CRW,GLY	101	61.6	8.6	22.4	8.0	39	81	50	38	3,170	27,200
Dahlco/ 8041 GTCBLL	Bt, GLY, LL	104	61.9	8.6	22.5	7.0	40	81	48	37	3,160	27,000
Dyna-Gro/ V4592VTNS	Bt, CRW, GLY	105	66.3	8.3	24.6	8.7	39	82	49	37	3,250	27,000
Hyland Seeds/ HL SR59	GLY	101	67.5	8.6	26.4	8.1	43	81	51	32	3,120	26,800
Legacy Seeds Inc/ L-5350 GTCBLL	Bt,GLY,LL	104	65.5	7.8	22.6	7.0	39	82	52	38	3,330	25,900
Dyna-Gro/ 55R10	Bt,CRW,GLY,LL	101	67.3	8.0	24.5	7.9	42	81	50	34	3,160	25,300
Mycogen/ TMF2Q716	Bt,CRW,GLY,LL	109	65.7	8.3	24.2	7.5	45	78	49	31	2,980	24,700
Dekalb/ DKC52-59 (VT3)	Bt, CRW, GLY	102	65.9	7.6	22.2	7.8	39	81	49	39	3,250	24,600
Producers Hybrids/ 5684 VT3	Bt, CRW, GLY	96	62.4	7.6	20.2	8.5	38	82	49	40	3,230	24,600
NuTech Seed/ 5X-100 RR/HXT	Bt,CRW,GLY,LL	100	66.2	7.6	22.4	8.0	40	82	48	37	3,230	24,400
Dekalb/ DKC55-64 (VT3)	Bt, CRW, GLY	105	62.2	7.7	20.3	7.9	41	80	51	37	3,160	24,300
Pioneer Brand/ 34A89	Bt, CRW, GLY	110	66.1	7.9	23.2	8.5	44	80	52	31	3,090	24,300
Channel/ 200-22VT3 Brand	Bt, CRW, GLY	100	68.1	7.5	23.5	7.9	40	82	50	38	3,220	24,100
Dekalb/ DKC59-64 (VT3)	Bt, CRW, GLY	109	65.4	7.7	22.3	7.7	43	80	53	32	3,120	24,100
Wensman Seed/ W 7455VT3	Bt, CRW, GLY	107	69.6	7.6	24.9	8.6	41	81	51	34	3,170	24,000
Channel/ 201-13VT3 Brand	Bt, CRW, GLY	105	66.4	7.5	22.2	7.7	40	81	49	36	3,190	23,900
Dekalb/ DKC50-66 (VT3)	Bt, CRW, GLY	100	63.7	7.2	19.9	7.5	38	82	49	40	3,270	23,600
NuTech Seed/ 3T-600 VT3	Bt, CRW, GLY	97	63.1	7.5	20.4	7.5	41	81	49	36	3,110	23,400
Producers Hybrids/ 6464 VT3	Bt, CRW, GLY	104	66.1	7.5	22.1	7.2	43	79	50	34	3,120	23,400
Dekalb/ DKC55-07 (VT3)	Bt, CRW, GLY	105	62.0	7.3	19.1	7.8	39	81	51	37	3,210	23,300
NuTech Seed/ 3T-098 VT3	Bt, CRW, GLY	96	66.0	7.1	20.8	8.8	39	81	51	39	3,270	23,100
Hyland Seeds/ HL B337	Bt,GLY	108	65.9	7.2	21.2	8.6	41	81	50	34	3,170	22,900
Dekalb/ DKC54-49 (VT3)	Bt, CRW, GLY	104	67.3	7.4	22.6	7.8	44	80	51	31	3,050	22,600
Renk/ RK692GTCBLLRW	Bt,CRW,GLY,LL	105	63.5	7.0	19.1	8.0	39	81	48	39	3,230	22,600
Dyna-Gro/ V3593VT3	Bt, CRW, GLY	95	64.1	7.0	19.5	7.9	40	81	50	37	3,210	22,500
Hyland Seeds/ HL SVT50	Bt,CRW,GLY	100	66.5	7.3	21.8	7.8	43	79	49	34	3,080	22,500
Trelay/ 5T429	Bt,CRW,GLY	102	66.4	7.2	21.5	7.7	43	79	50	33	3,090	22,300
Renk/ RK698VT3	Bt, CRW, GLY	103	66.1	6.8	19.9	8.0	41	81	50	35	3,150	21,300
Pioneer Brand/ 36V53	Bt ,GLY	102	65.3	6.6	19.0	7.7	40	80	49	38	3,200	21,100
Legacy Seeds Inc/ L-5309 GT	GLY	104	67.1	6.7	20.5	7.9	43	80	50	33	3,120	21,000
Trelay/ 2RR530	GLY	86	59.9	6.7	16.6	8.5	41	80	51	36	3,060	20,400
Dekalb/ DKC48-37 (VT3)	Bt, CRW, GLY	98	64.6	6.1	17.3	7.7	41	81	49	36	3,130	19,100
Mean	—	—	64.7	7.8	22.1	7.9	40	81	50	36	3,180	24,700
LSD(0.10)	—	—	3.5	1.5	3.6	0.6	3	2	ns	4	150	5,000
CV	—	—	4.7	16.6	14.2	7.1	6.9	1.7	4.2	10.3	4.0	17.3

<sup>1</sup> CB, CRW, GLY, LL traits contain genes for European corn borer tolerance, corn rootworm tolerance, and glyphosate and Liberty Link R (glufosinate-ammonium) herbicide resistance, 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 (Otter Tail County) in 2009.**

Brand / Hybrid Entry	Traits <sup>1</sup>	RM	Moist %	Yield, Ton/Acre <sup>2</sup>		Quality (Concentration), % <sup>3</sup>					Milk Yield <sup>4</sup>	
				DM	Silage	CP	NDF	IVD	NDFD	Starch	Lb/ Ton	Lb/ Acre
Pioneer Brand/ 35F44	Bt, CRW, GLY, LL	105	67.8	10.3	32.2	7.0	43	78	49	32	3,150	32,600
NuTech/ 3A-804 GT	Bt, GLY	104	61.4	10.3	26.6	5.6	42	78	50	34	3,150	32,400
Dekalb/ DKC54-49 VT3	Bt, CRW, GLY	104	66.3	9.2	27.2	6.3	45	77	51	31	3,070	28,100
NuTech/ 3U-306	Bt, CRW, GLY, Lf	106	65.9	9.4	27.7	6.4	48	76	52	25	2,930	27,700
Dyna-Gro/ V3593 VT3	Bt, CRW, GLY	95	57.1	9.3	21.8	6.2	45	77	50	32	2,880	26,900
Dyna-Gro/ V4592VTNS	CRW, GLY	105	62.2	9.0	23.9	6.4	47	76	51	29	2,950	26,600
Dairyland/ 8208	Bt, CRW, LL	108	67.4	8.7	26.8	6.3	45	77	49	29	3,030	26,500
Hyland Seeds/ HL CVR48 VT3	Bt, CRW, GLY	88	62.3	8.7	23.1	5.6	45	78	51	31	3,030	26,400
Dyna-Gro/ 55R10	Bt, CRW, GLY, LL	100	66.8	8.9	26.8	6.3	47	76	50	28	2,960	26,200
Pioneer Brand/ 37N16	Bt, CRW, GLY, LL	99	61.5	9.1	23.8	6.4	47	76	48	30	2,820	25,800
NuTech/ 3T-098 VT3	Bt, CRW, GLY	98	60.4	8.7	22.0	5.8	44	76	49	33	2,940	25,600
Dekalb/ DKC45-79 VT3	Bt, CRW, GLY	95	61.1	8.5	21.8	6.0	47	76	50	30	2,870	24,400
Wensman/ 7107 VT3	Bt, CRW, GLY	90	58.7	7.8	18.8	6.4	40	80	51	37	3,140	24,300
Wensman/ 7273 VT3	Bt, CRW, GLY	98	62.1	8.1	21.3	6.2	46	75	48	31	2,870	23,200
Hyland Seeds/ HL SR35	GLY, Lf	88	58.5	8.8	21.1	6.5	53	72	50	23	2,550	22,300
Dekalb/ DKC50-44 VT3	Bt, CRW, GLY	100	62.3	6.9	18.4	5.7	49	75	51	28	2,860	19,800
Mean	—	—	62.6	8.9	23.9	6.2	46	76	50	30	2,950	26,200
LSD(0.10)	—	—	2.0	ns	4.9	0.6	3	2	2	4	180	5,800
CV	—	—	2.3	14.4	14.9	7.2	5.9	2.3	2.5	9.4	4.5	16.0

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

<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.