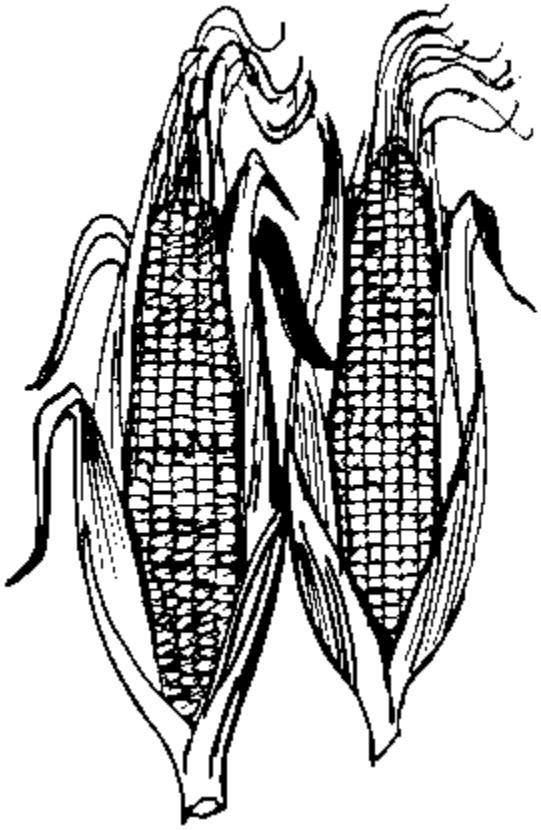
2007
Northwest Vermont Corn Hybrid Performance Trial Results



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The UNIVERSITY of VERMONT EXTENSION

2007 NORTHWEST VERMONT CORN SILAGE HYBRID PERFORMANCE TRIALS

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In 2007, the University of Vermont Extension conducted a hybrid corn evaluation program, in cooperation with local farmers and seed companies. The purpose of the program is to provide unbiased performance comparisons of hybrid corn available in the northern part of Vermont. It is important to remember, however, that the data presented are from a single test at only a few locations. Hybrid-performance data from additional tests in different locations and often over several years should be compared before you make conclusions.

TESTING PROCEDURE

In 2007, silage performance trials were conducted at four locations in Northwest Vermont. Local farmers were asked to host the trials on their farms and seed companies submitted hybrids for evaluation in each location. Companies and contact names are listed in Table 1.

Table 1. Participating Companies and Local Contact Information

Mycogen	Pioneer	Seedway
Claude Fortin District Sales Manager Highgate, VT 802-363-2803	Jacob Bourdeau Bourdeau Bros. Sheldon, VT 802-933-2277	Tony Rossier District Sales Manager St. Albans, 05478 802-363-7121
Dekalb/Monsanto	**TA Seeds**	**Wolf River Valley**
Bob Dewaine Technology Development Rep. Sherrill, NY 315-363-3903	Taylor Doebler III TA Seeds President Avis, PA 866-813-7333	Marcel Moreau District Sales Manager Swanton, VT 802-309-4674

Location trials were either early or late maturity trials, based on the hybrid Relative Maturities provided by the companies. The specific hybrids and relative maturities are listed for each trial location in Table 2.

Table 2. Hybrids evaluated at four Northwest locations

Company	Variety			Location			
	Hybrid	RM	Traits	North Hero	Sheldon	Westford	Addison
Dekalb/Monsanto	DKC41-57	86	RR2, YGPL				X
Dekalb/Monsanto	DKC45-82	90	RR2				X
Dekalb/Monsanto	DKC48-46	93	RR2, YGPL				X
Dekalb/Monsanto	DKC49-35	99	RR2			X	
Dekalb/Monsanto	DKC50-44	95	VT3			X	X
Dekalb/Monsanto	DKC52-59	97	VT3			X	
Dekalb/Monsanto	DKC54-46	99	RR2, YGPL			X	
Dekalb/Monsanto	DKC57-79	107	RR2, YGPL	X	X		
Dekalb/Monsanto	DKC61-69	109	RR2, YGPL	X	X		
Dekalb/Monsanto	RX674VT3	107	RR2, YGPL	X	X		
Mycogen	F2F566	105	BMR	X	X		
Mycogen	F2F444	99	BT, LL, RR, BMR	X		X	
Mycogen	F2F485	98	BMR			X	X
Mycogen	F2F633	110	BT, LL, BMR		X		
Mycogen	TMF 2H308	94	BT, LL				X
Mycogen	F2F610	110	BMR	X	X		
Mycogen	TMF 2L416	93	BT, LL			X	X

Company	Variety			Location			
	Hybrid	RM	Traits	North Hero	Sheldon	Westford	Addison
Pioneer	33D14	110	HXX, LL, RR2	X			
Pioneer	34A89	108	HXX, LL, RR2	X		X	
Pioneer	38B87	97	HXX, LL, RR2			X	
Pioneer	38H72	99	HXX, LL, RR2				X
Pioneer	38N87	90	HX1, LL, RR2				X
Seedway	SW 3301L	93	Leafy				X
Seedway	E390L	95	Leafy				X
Seedway	4091LYG	100	Leafy, YG			X	
Seedway	SW 5501L	105	Leafy		X		
Seedway	SW 6601L	108	Leafy		X		
T.A. Seeds	TA 689-02F	110	RR, Leafy		X		
T.A. Seeds	TA 500-00	100				X	
T.A. Seeds	TA 470-00	97				X	
T.A. Seeds	TA 310-02F	90	RR, Leafy				X
T.A. Seeds	TA 370-00	93					X
T.A. Seeds	TA 678-13	110	CB, RW, RR	X	X		
Wolf River Valley	WRV 2096L	96-98	Leafy			X	X
Wolf River Valley	WRV 2702L	102	Leafy			X	
Wolf River Valley	7201 BMR		BMR			X	

Seasonal precipitation and temperature recorded at weather stations close in proximity to the 2007 sites are shown in Table 3. This season brought near average temperatures but variable rainfall patterns across the region. In general, silage yields were average to above average for most farms including our trial locations. Above average precipitation during July resulted in late season nitrogen deficiencies in many fields. In Addison County below average precipitation resulted in early corn harvest across much of the region. However, yields still remained respectable on most farms.

Table 3. 2007 Temperature and Precipitation Summary

Location*		May		June		July		August		September	
	Temp. Precip.	Average Total	Departure Departure	Average Total	Departure Departure	Average Total	Departure Departure	Average Total	Departure Departure	Average Total	Departure Departure
North Hero	Temp.	56	-1	67	+2	69	-2	70	0	64	+3
	Precip.	2.2	-0.8	2.9	-0.6	6.8	+3.4	2.2	-1.8	2.0	+1.3
Sheldon	Temp.	55	-1	68	+3	67	-2	64	-2	58	0
	Precip.	3.2	-0.7	3.4	-0.2	5.3	+0.8	2.4	-2.3	2.3	-2.0
Westford	Temp.	56	0	67	2	67	-2	69	+1	61	+1
	Precip.	2.7	-0.8	2.4	-1.4	6.5	+2.1	1.7	-2.9	2.1	-2.2
Addison	Temp.	54	-1	67	2	67	-1	66	-2	58	-2
	Precip.	2.0	-1.5	1.8	-1.0	6.7	+2.5	1.2	-1.1	2.3	-0.5

*Based on National Weather Service data from cooperative observer stations in close proximity to field trials. Historical averages are for 30 years of data, except for Westford (21 years) and Addison (7 years).

CULTURAL PRACTICES

The seedbed at each location was prepared by conventional tillage methods. Fertilizer and herbicides were applied. Plots were planted with a six row corn planter. Plots were planted the length of the field and averaged 350 feet in length. The six row plots were harvested with a self propelled corn chopper. Yield was measured by weighing wagons on drive-up platform scales. A subsample of corn was taken and analyzed for forage quality by the DairyOne Forage Laboratory in New York. Information for each location is summarized in Table 4.

Table 4. Individual Trial Information - 2006

	Trial Location & Cooperator			
Trial Information	Addison Jake & Bert Gosliga	Essex Don Pouliot & Family	Sheldon Andy Brouillette & Family	North Hero Andre Quintin & Family
Soil type	Clay	Silt loam	Sandy loam	Silt loam
Previous Crop	Alfalfa	Corn	Corn	Corn
Row Width (in.)	30	30	30	30
Planting date	14-May	9-May	10-May	9-May
Harvest date	7-Sep	2-Oct	24-Sep	1-Oct
Harvest population (plants/acre)	30,000	28,000	32,000	30,000
Tillage operations	Fall Plow	Spring Chisel	Spring chisel	Fall Chisel
Manure (gal/acre)	Spring applied - 5000 gal/acre	Spring applied – 8000 gal/acre	Spring applied - 5000 gal/acre	None
Starter fertilizer (lbs/A)	10-20-20 @ 150 lbs/a	5-20-30 @ 300 lbs/a	10-20-20 @ 150 lbs/a	10-20-20 @ 150 lbs/a
Other fertilizer (lbs/A)	45 lbs N/acre sidedressed	140 lbs N/acre sidedressed	45 lbs N/acre sidedressed	90 lbs N/acre sidedressed

SILAGE QUALITY

Silage quality was analyzed using wet chemistry techniques at the DairyOne Forage Laboratory in New York. Plot samples were dried, ground and analyzed for crude protein (CP), neutral detergent fiber (NDF), 30h *in vitro* digestibility (IVD), and 30h digestible NDF (dNDF). Mixtures of true proteins, composed of amino acids, and nonprotein nitrogen make up the CP content of forages. The CP content of forages is determined by measuring the amount of N and multiplying by 6.25. The bulky characteristics of forage come from fiber. Forage feeding values are negatively associated with fiber since the less digestible portions of plants are contained in the fiber fraction. The detergent fiber analysis system separates forages into two parts: cell contents, which include sugars, starches, proteins, nonprotein nitrogen, fats and other highly digestible compounds; and the less digestible components found in the fiber fraction. The total fiber content of forage is contained in the neutral detergent fiber (NDF). Chemically, this fraction includes cellulose, hemicellulose, and lignin. Because of these chemical components and their association with the bulkiness of feeds, NDF is closely related to feed intake and rumen fill in cows. Recently, forage testing laboratories have begun to evaluate forages for NDF digestibility. Evaluation of forages and other feedstuffs for NDF digestibility is being conducted to aid prediction of feed energy content and animal performance. Research has demonstrated that lactating dairy cows will eat more dry matter and produce more milk when fed forages with optimum NDF digestibility. Forages with increased NDF digestibility will result in higher energy values, and perhaps more importantly, increased forage intakes. Forage NDF digestibility can range from 20 – 80%.

The silage performance indices of milk per acre and milk per ton were calculated using a model derived from the spreadsheet entitled, "MILK2006" developed by researchers at the University of Wisconsin. Milk per ton measures the pounds of milk that could be produced from a ton of silage. This value is generated by approximating a balanced ration meeting animal energy, protein, and fiber needs based on silage quality. The value

is based on a standard cow weight and level of milk production. Milk per acre is calculated by multiplying the milk per ton value by silage dry matter yield. Therefore milk per ton is an overall indicator of forage quality and milk per acre an indicator of forage yield and quality. Milk per ton and milk per acre calculations provide relative rankings of forage samples, but should not be considered as predictive of actual milk responses in specific situations for the following reasons:

1) equations and calculations are simplified to reduce inputs for ease of use.
2) farm to farm differences exist.
3) genetic, dietary, and environmental differences affecting feed utilization are not considered.

PRESENTATION OF DATA

Results for individual locations are listed in Table 5, 6, 7, and 8. Dry matter yields were calculated and than adjusted to 35% dry matter for the report. Within each trial, hybrids are ranked by dry matter at harvest. The numbers presented in the tables are an average of two replications (unless otherwise noted). For each location, there is a figure displaying the relationship between milk per ton and milk per acre. The dotted lines dividing the figure into four quadrats represent the mean milk per ton and acre for the location. Therefore hybrids that fall above the lines performed higher than the average and hybrids below the lines performed below average. Lastly, a table has been included for each location to report yields. Hybrids with the same letter were not statistically different in yield.

LEAST SIGNIFICANT DIFFERENCE (LSD)

Variations in yield and quality can occur because of variations in genetics, soil, weather, and other growing conditions. Statistical analysis makes it possible to determine, whether a difference among hybrids is real or whether it might have occurred due to other variations in the field. At the bottom of each table a LSD value is presented for each variable (i.e. yield). Least Significant differences (LSD's) at the 10% level of probability are shown. Where the difference between two hybrids within a column is equal to or greater than the LSD value at the bottom of the column, you can be sure in 9 out of 10 chances that there is a real difference between the two hybrids. Hybrids that were not significantly lower in performance than the highest hybrid in a particular column are indicated with an asterisk. In the example below hybrid A is significantly different from hybrid C but not from hybrid B. The difference between A and B is equal to 1.5 which is less than the LSD value of 2.0. This means that these hybrids did not differ in yield. The difference between A and C is equal to 3.0 which is greater than the LSD value of 2.0. This means that the yields of these hybrids were significantly different from one another. The asterisk indicates that hybrid B was not significantly lower than the top yielding hybrid.

Hybrid	Yield
A	6.0
B	7.5*
C	9.0
LSD	2.0

RESULTS

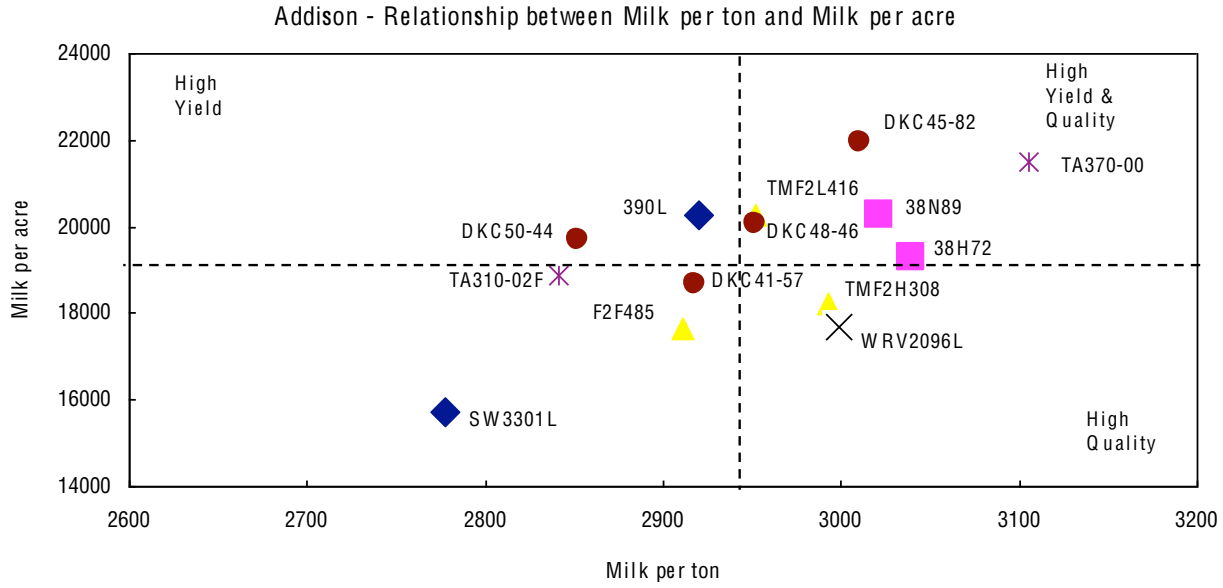
Table 5. Addison – Short Maturity Corn Silage Variety Trial

Company	Hybrid	DM at harvest	Yield 35 % DM	Forage Quality Characteristics					Milk per	
				CP	NDF	IVD	dNDF	Nel	ton	acre
		%	T/A	%	%	%	%	%		
Wolf River Valley	WRV2096L	33.3	16.8	8.65	38.3*	85.0	61.0	0.71	2999	17680
Mycogen	F2F485	36.1	17.4	7.75	40.1	83.5	58.0	0.69	2911	17659
Seedway	SWE390L	37.3	20.0	9.20	47.3	81.0	60.5	0.67	2920	20276
Seedway	SW3301L	37.9	16.2	8.95	42.0	80.5	54.0	0.67	2778	15730
Dekalb	DKC45-82	38.2	20.8	7.65	38.9*	85.5	61.5	0.70	3011	21934
TA Seeds	TA310-02F	38.2	19.0	7.05	46.2	80.0	57.0	0.67	2842	18871
Mycogen	TMF2H308	38.5	17.4	8.75	40.7	84.5	61.0	0.70	2993	18238
Mycogen	TMF2L416	39.0	19.6	7.55	41.5	83.5	60.0	0.70	2952	20272
Dekalb	DKC48-46	39.2	19.5	7.80	36.5*	85.0	59.0	0.70	2952	20053
Dekalb	DKC50-44	40.6	19.7	7.50	38.5*	83.0	55.0	0.69	2852	19692
TA Seeds	TA370-00	40.9	19.7	7.15	37.5*	87.0	66.0	0.72	3105	21480
Dekalb	DKC41-57	41.0*	18.4	8.00	36.0*	84.0	57.5	0.70	2918	18677
Pioneer	38H72	43.2*	18.1	7.00	34.4*	87.0	62.0	0.71	3040	19304
Pioneer	38N89	43.9*	19.2	8.00	35.8*	86.0	61.0	0.71	3022	20284
Trial Mean		39.1	18.7	7.93	39.5	84.0	59.5	0.69	2949	19296
LSD (0.10)**		2.9	NS	NS	6.4	NS	NS	NS	NS	NS

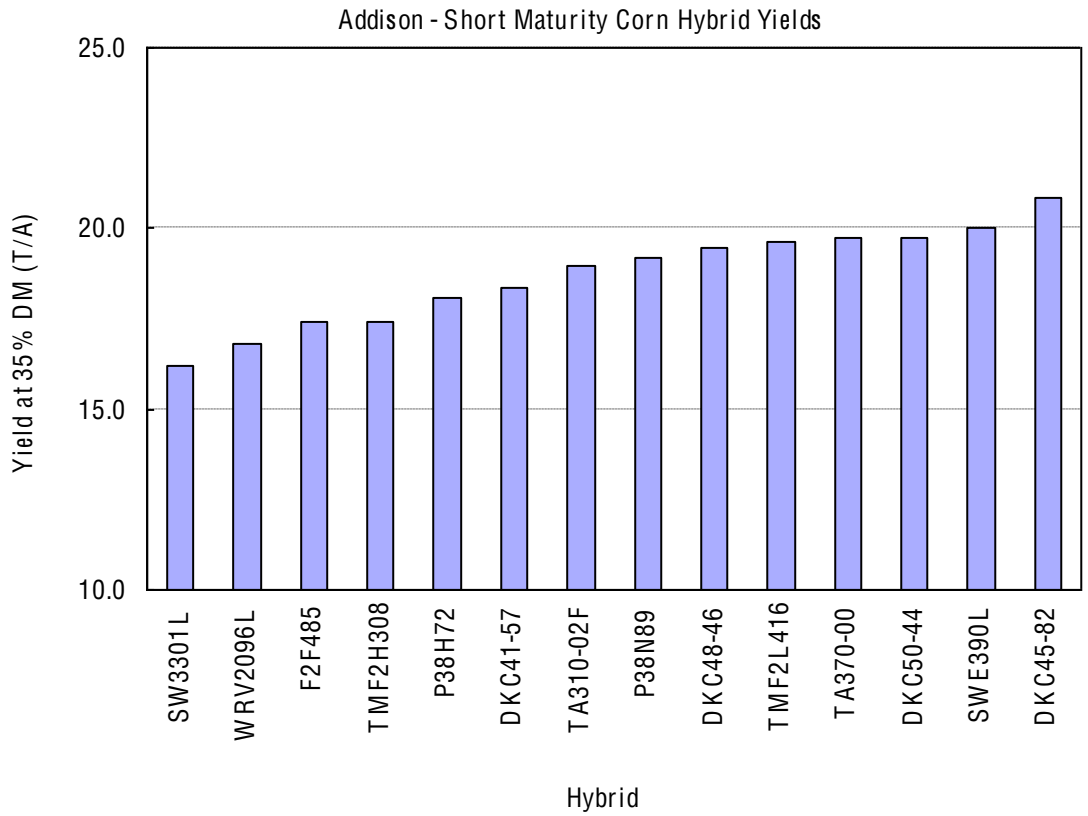
* Hybrids that did not perform significantly lower than the top performing hybrid in a particular column are indicated with an asterisk.

** See text for further explanation.

NS - None of the hybrids were significantly different from one another.



Dotted lines represent the mean milk per ton and milk per acre at the Addison location.



Hybrids did not differ significantly in yield at the Addison location.

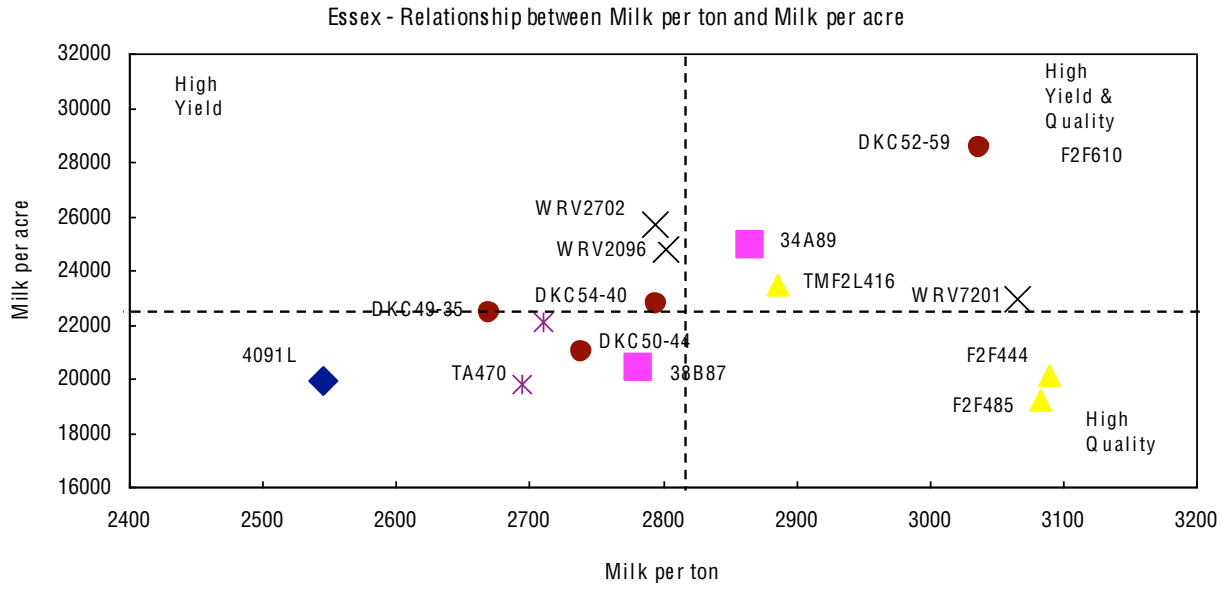
Table 6. Essex - Short Maturity Corn Silage Variety Trial

Company	Hybrid	DM at harvest %	Yield 35 % DM T/A	Forage Quality Characteristics CP %	NDF %	IVD %	dNDF %	Nel %	Milk per ton	Milk per acre
TA Seeds	TA500-00	33.7	23.3	8.65*	41.1	79.5	51.0	0.66	2710	22080
Pioneer	34A89	34.1	24.8	8.10	45.2	81.0	58.0*	0.68*	2866*	24894*
Mycogen	F2F444	36.2	18.6	8.55*	43.9	85.5*	66.5*	0.70	3090*	20127
Seedway	SW 4091LYG	36.4	22.0	7.60	45.4	75.5	47.0	0.62	2545	19931
Mycogen	F2F485	36.5	17.8	8.75*	40.6	85.5*	65.0*	0.71*	3084*	19209
Dekalb	DKC54-46	37.0	23.3	8.65*	44.2	80.5	55.5	0.67	2795	22766
TA Seeds	TA470	37.4	21.1	8.75*	41.3	79.5	50.5	0.65	2695	19786
Dekalb	DKC50-44	37.6	21.9	6.90	39.6*	81.0	51.0	0.66	2739	20964
Wolf Riv. Valley	WRV7201BMR	38.5	21.5	7.70	40.2*	85.5*	64.0*	0.71*	3066*	22981*
Wolf Riv. Valley	WRV2096	38.7	25.2	7.95	36.4*	82.5*	52.0	0.68*	2802*	24773*
Wolf Riv. Valley	WRV2702L	39.4	26.2	7.90	44.1	80.5	55.0	0.66	2794	25691*
Dekalb	DKC52-59	39.6	26.9	7.75	41.4	86.0*	65.5*	0.69*	3038*	28507*
Pioneer	38B87	40.1*	20.9	8.85*	41.9	81.0	54.0	0.67	2782	20405
Mycogen	TMF2L416	40.4*	23.2	7.90	39.8*	83.0*	56.5*	0.69*	2886	23474*
Dekalb	DKC49-35	41.8*	24.0	7.75	40.5	79.5	49.0	0.65	2671	22415
Trial Mean		37.8	22.7	8.12	41.7	81.7	56.0	0.67	2837	22534
LSD (0.10)**		2.0	NS	0.59	3.95	4.38	10.5	0.03	249	NS

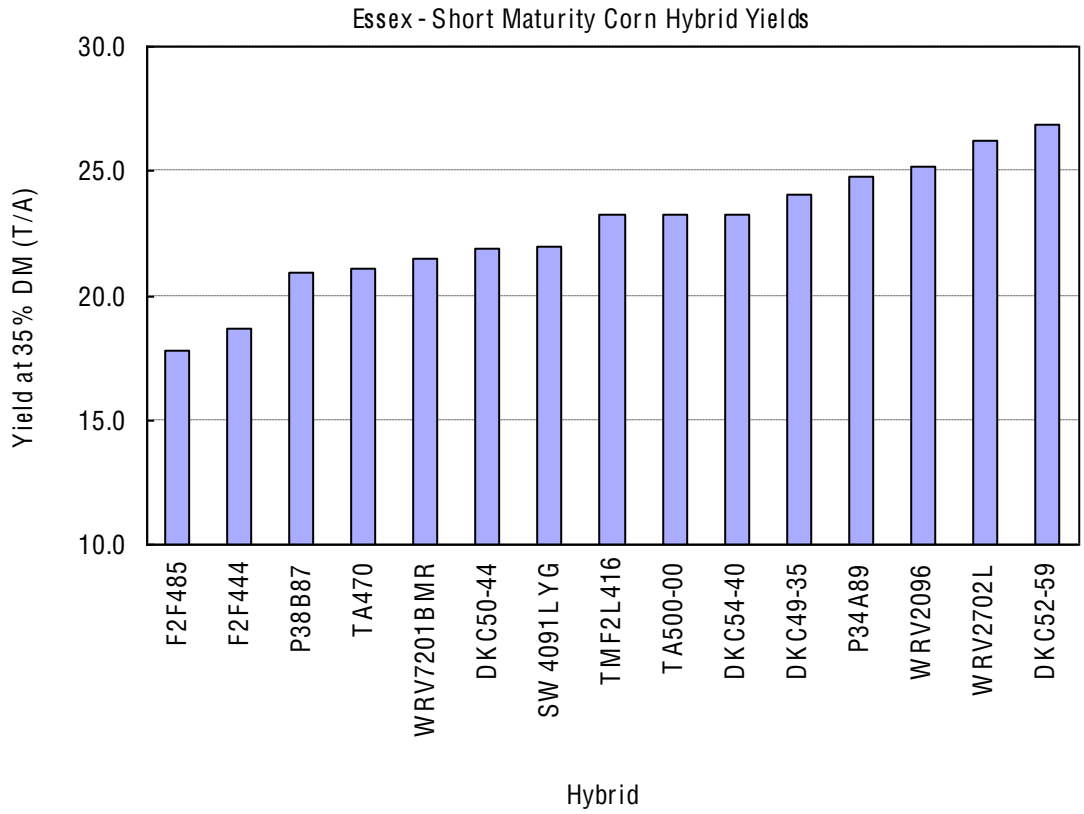
* Hybrids that did not perform significantly lower than the top performing hybrid in a particular column are indicated with an asterisk.

** See text for further explanation.

NS - None of the hybrids were significantly different from one another.



Dotted lines represent the mean milk per ton and milk per acre at the Essex location.

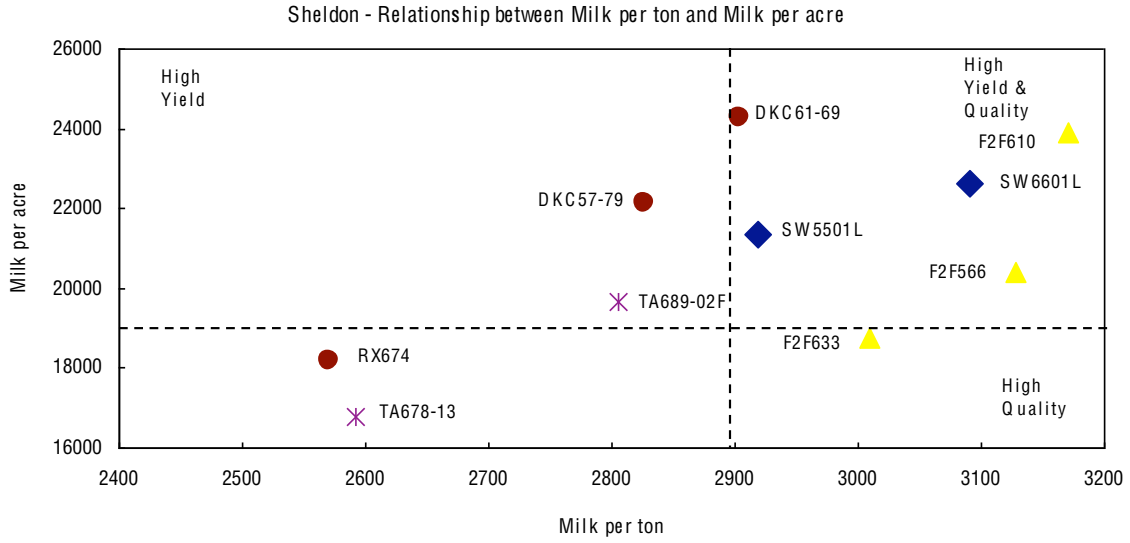


Hybrids did not differ significantly in yield at the Essex location.

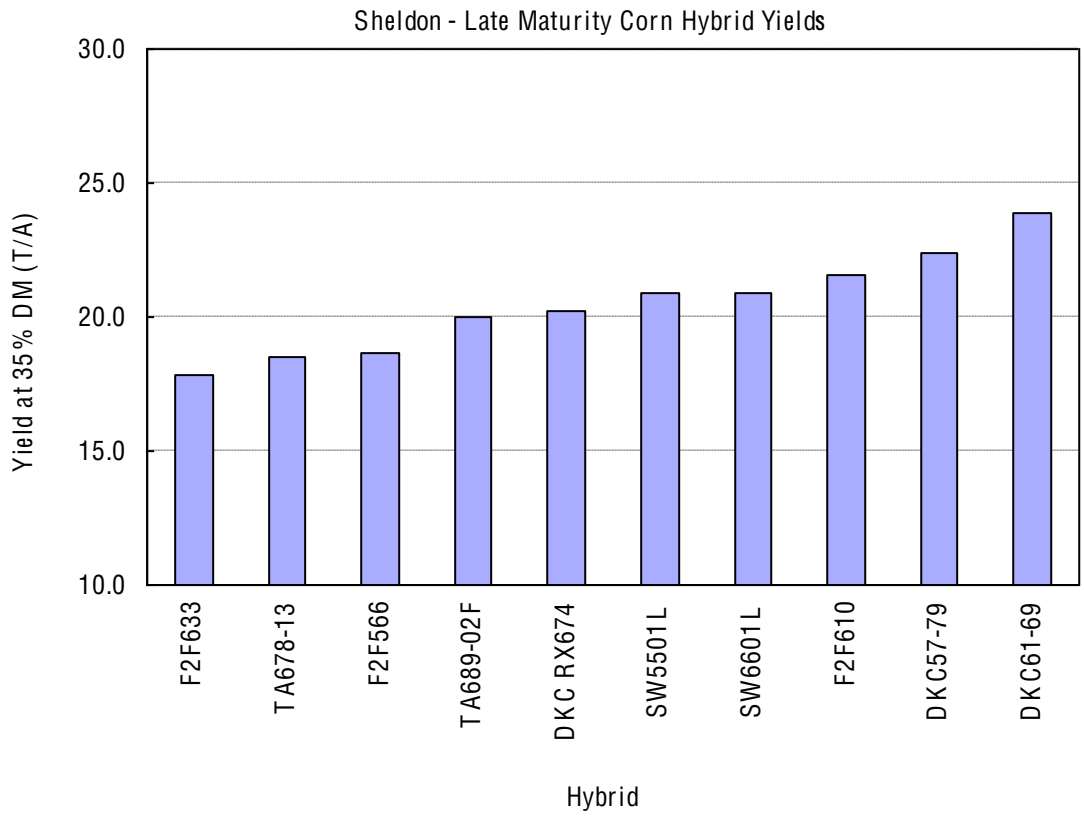
Table 7. Sheldon – Late Maturity Corn Silage Variety Trial

Company	Hybrid	DM at harvest %	Yield 35 % DM T/A	Forage Quality Characteristics CP %	NDF %	IVD %	dNDF %	Nel %	Milk per ton	Milk per acre
Mycogen	F2F610	31.0	21.5	10.20	45.5	87.0	72.0	0.69	3171	23904
Mycogen	F2F633	32.6	17.8	9.00	43.7	84.0	63.0	0.70	3009	18757
Dekalb	DKC RX674VT3	33.4	20.2	9.00	47.9	75.0	49.0	0.62	2570	18189
Mycogen	F2F566	33.5	18.6	9.00	46.8	85.0	68.0	0.68	3128	20390
Seedway	SW6601L	34.0	20.9	9.20	49.4	84.0	67.0	0.67	3091	22639
Seedway	SW5501L	35.1	20.9	8.70	47.5	81.0	60.0	0.68	2918	21361
Dekalb	DKC57-79	35.3	22.4	8.60	42.7	81.0	56.0	0.67	2826	22122
TA Seeds	TA689-02F	35.9	20.0	9.20	47.4	79.0	57.0	0.66	2805	19670
Dekalb	DKC61-69	36.2	23.9	8.60	39.8	83.0	58.0	0.69	2904	24271
Trial Mean		34.5	20.5	9.03	45.1	81.7	59.6	0.67	2901	20810
LSD (0.10)*		NA	NA	NA	NA	NA	NA	NA	NA	NA

* NA – statistics were not calculated due to missing data.



Dotted lines represent the mean milk per ton and milk per acre at the Sheldon location.



Yield statistics were not calculated at this location due to missing data.

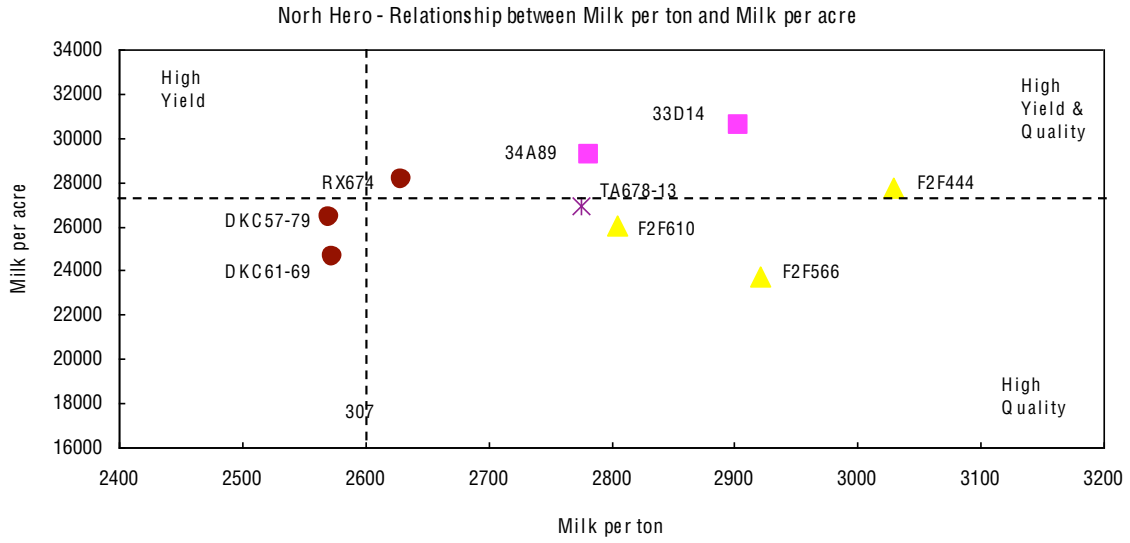
Table 8. North Hero – Late Maturity Corn Silage Variety Trial

Company	Hybrid	DM at harvest %	Yield 35 % DM T/A	Forage Quality Characteristics CP %	NDF %	IVD %	dNDF %	Nel %	Milk per ton	Milk per acre
Mycogen	F2F566	41.0	23.3	7.60	45.2	81.5	59.5*	0.67	2921*	23760
Mycogen	F2F610	41.4	26.5	6.75	48.7	79.0	56.5*	0.65	2805	26018
Pioneer	33D14	41.6	30.2*	6.65	42.5*	82.0*	58.0*	0.68	2904*	30594*
Dekalb	DKC61-69	41.9	29.4*	7.50	38.5*	78.0	44.0	0.64	2571	26426
Pioneer	34A89	43.1	30.0*	7.35	38.7*	81.5	52.0	0.67	2783	29259*
Dekalb	DKC57-79	43.5	27.3	7.30	43.4*	77.0	46.5	0.63	2574	24636
Mycogen	F2F444	44.4	26.2	7.65	39.3*	85.0*	62.5*	0.71*	3030*	27765*
Dekalb	DKCRX674VT3	45.1	30.5*	6.20	44.2	77.5	49.0	0.63	2630	28090*
TA Seeds	TA678-13	45.3	26.6	7.45	40.3*	80.5	52.5	0.67	2767	25759
Trial Mean		43.04	27.78	7.16	42.3	80.2	53.4	0.66	2776	26923
LSD (0.10)**		NS	2.57	NS	5.49	3.42	7.19	0.02	188	2887

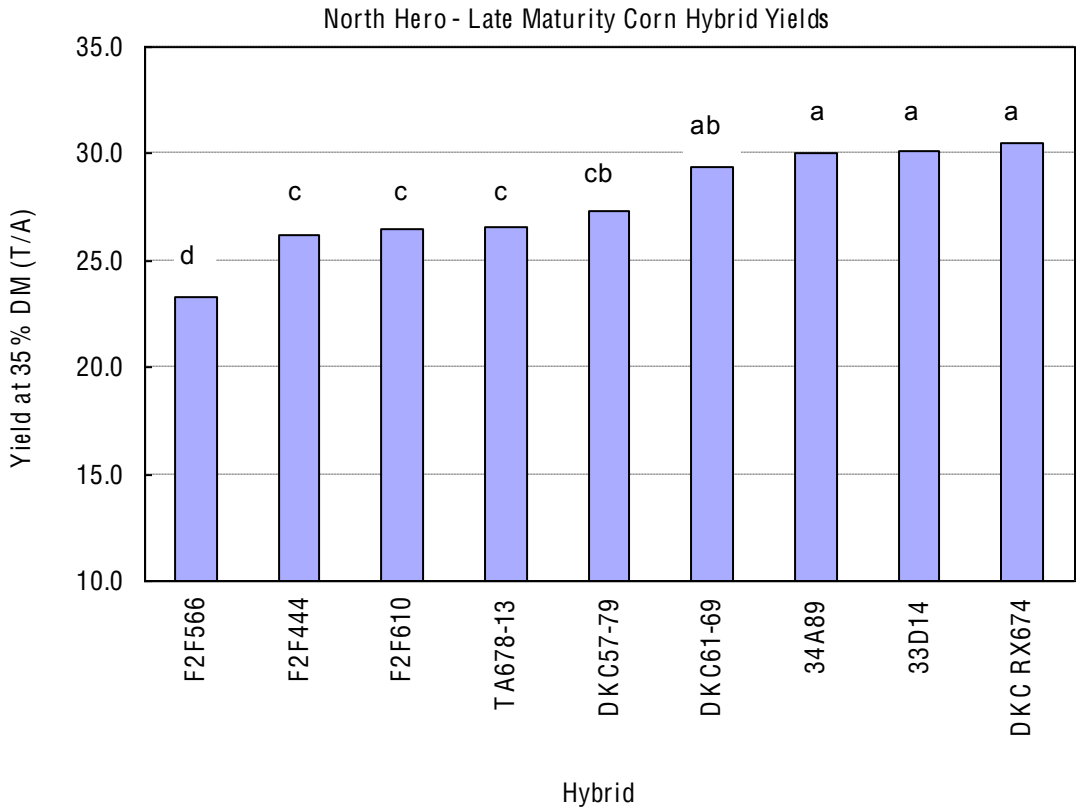
* Hybrids that did not perform significantly lower than the top performing hybrid in a particular column are indicated with an asterisk.

** See text for further explanation.

NS - None of the hybrids were significantly different from one another.



Dotted lines represent the mean milk per ton and milk per acre at the North Hero location.



Hybrids with the same letter did not differ in yield at the North Hero location.

2007 CORN SILAGE HYBRID MATURITY DATE PERFORMANCE TRIALS

In 2007, the University of Vermont Extension conducted an experiment to evaluate yield and quality of a range of short and long season corn hybrids. It is important to remember that the data presented are from a single test at only one location. Hybrid-performance data from additional tests in different locations and often over several years should be compared before you make conclusions.

TESTING PROCEDURE

In 2007, the corn hybrid maturity trial was conducted in Alburgh, Vermont. There were two replications of each variety. The seedbed at the location was prepared by conventional tillage methods. Fertilizer and herbicides were applied. Plots were planted with a four row corn planter. Plots were planted the length of the field and averaged 200 feet in length. The four row plots were harvested with a two row corn chopper. Yield was measured by weighing wagons on drive-up platform scales. A subsample of corn was taken and analyzed for forage quality Plot samples were dried, ground and analyzed for crude protein (CP), neutral detergent fiber (NDF), 30h *in vitro* digestibility (IVD), and 30h digestible NDF (dNDF).

PRESENTATION OF DATA

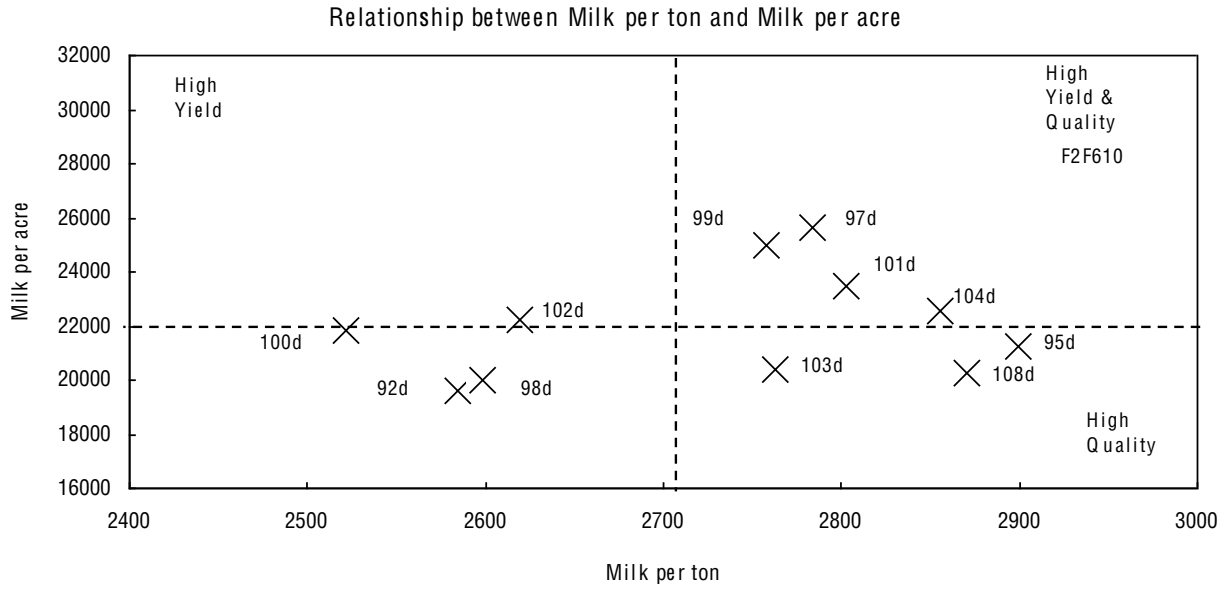
The results are reported as an average of the two replications. There were two replication of each hybrid at one location. The data are reported in Table 10. Dry matter yields were calculated and than adjusted to 35% dry matter for the report. There is also a figure displaying the relationship between milk per ton and milk per acre. The dotted lines dividing the figure into four quadrats represent the mean milk per ton and acre for the location. Therefore hybrids that fall above the lines performed higher than the average and hybrids below the lines performed below average. Lastly, a table has been included to report yields. Hybrids with the same letter were not statistically different in yield. A LSD value is presented for each variable (i.e. yield) comparing if hybrids with different relative maturities differed from each other in yield and quality. Least Significant differences (LSD's) at the 10% level of probability are shown. If there is no significant difference (NS) this means that these hybrids did not differ from one another.

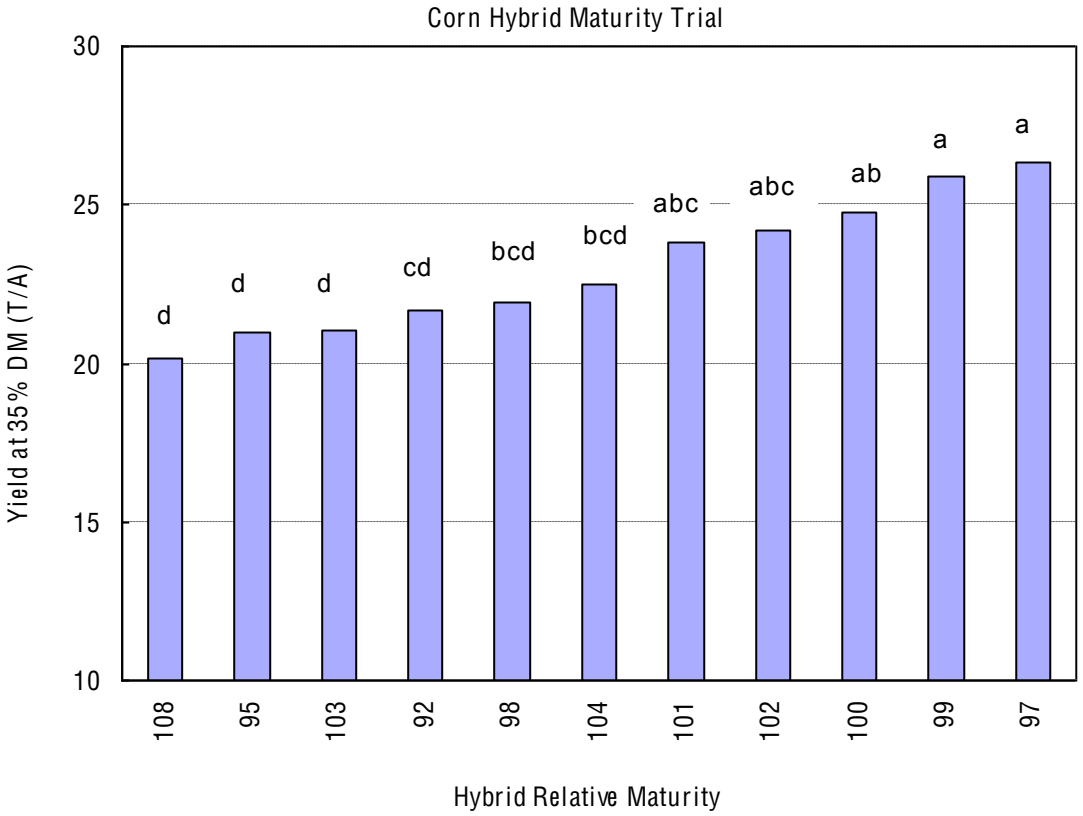
Table 9. Hybrids evaluated in maturity trial

Company	Variety	
	Hybrid	RM
Dekalb	DKC45-82	92
Dekalb	DKC48-46	95
Dekalb	DKC50-44	97
Pioneer	38B86	98
Dekalb	DKC52-59	99
Dekalb	DKC53-18	100
Dekalb	DKC54-46	101
Dekalb	DKC55-12	102
Pioneer	36W65	103
Dekalb	DKC57-79	104
Dekalb	DKC61-69	108

Table 10. Corn hybrid maturity trial.

Hybrid	Relative maturity	Yield 35 % DM T/A	Forage Quality Characteristics CP %	NDF %	IVD %	dNDF %	Nel %	Milk per ton	Milk per acre
DKC45-82	92	21.6	6.15	44.8	75.0	44.0	0.64	2585	19576
DKC48-46	95	20.9	6.30	36.8*	81.5	49.5	0.70*	2899*	21269
DKC50-44	97	26.3*	5.95	44.2	78.5	51.0	0.66	2784*	25642*
38B86	98	21.9	6.00	45.9	75.0	46.0	0.63	2598	19982
DKC52-59	99	25.9*	6.45	42.2	78.5	49.5	0.67*	2758*	24994*
DKC53-18	100	24.7*	6.05	47.0	74.0	45.0	0.62	2522	21869
DKC54-46	101	23.8*	7.60	42.4	79.0	50.0	0.67	2803*	23479*
DKC55-12	102	24.2*	6.25	45.3	75.0	45.0	0.64	2619	22211
36W65	103	21.0	7.00	39.6*	79.0	47.5	0.68*	2763*	20365
DKC57-79	104	22.5	7.05	39.4*	80.0	48.0	0.69*	2856*	22545*
DKC61-69	108	20.1	6.95	40.1*	79.5	49.0	0.69*	2871*	20247
Trial Mean		23.0	6.52	42.5	77.7	47.7	0.66	2732	22016
LSD (0.10)**		2.7	NS	4.8	NS	NS	0.02	151	3198




Corn Hybrid Maturity Trial
Yield at 35% DM (T/A)
30
25
20
15
10
d
d
d
cd
bcd
bcd
abc
abc
ab
a
a
108
95
103
92
98
104
101
102
100
99
97
Hybrid Relative Maturity

2007 CORN HYBRID SPECIALTY TRAITS PERFORMANCE TRIALS

In 2007, the University of Vermont Extension conducted an experiment to evaluate yield and quality of corn hybrids with and without specialty traits. It is important to remember that the data presented are from a single test at only two locations. Hybrid-performance data from additional tests in different locations and over several years should be compared before you make conclusions.

TESTING PROCEDURE

In 2007, the corn hybrid specialty traits trials were conducted at two locations in Northwest Vermont. Each site had been in corn production for greater than 4 years. The seedbed at each location was prepared by conventional tillage methods. Fertilizer and herbicides were applied. Plots were planted with a six row corn planter. Plots were planted the length of the field and averaged 350 feet in length. The six row plots were harvested with a self propelled corn chopper. Yield was measured by weighing wagons on drive-up platform scales. A subsample of corn was taken and analyzed for forage quality Plot samples were dried, ground and analyzed for crude protein (CP), neutral detergent fiber (NDF), 30h *in vitro* digestibility (IVD), and 30h digestible NDF (dNDF).

PRESENTATION OF DATA

The results are reported as an average of the two locations. There was one replication of each hybrid at each location. The data are reported in Tables 12 and 13. Dry matter yields were calculated and than adjusted to 35% dry matter for the report. In Table 12, the specialty trait hybrid is compared statistically to its conventional counterpart. In Table 13, all specialty trait hybrids are compared to all of the conventional hybrids. This is basically a trial summary. A LSD value is presented for each variable (i.e. yield) comparing if specialty traits hybrids differed from their conventional counterpart. Least Significant differences (LSD's) at the 10% level of probability are shown. If there is no significant difference (NS) this means that these hybrids did not differ from one another.

Table 11. Hybrids evaluated in specialty traits trial

Company	Variety		
	Hybrid	RM	Traits*
Pioneer	33D11	108	None
Pioneer	33D14	110	HXX, LL, RR2
Pioneer	34A85	108	RR2
Pioneer	34A89	107	HXX, LL, RR2
Pioneer	38B85	96	None
Pioneer	38B87	97	HXX, LL, RR2
Pioneer	38H67	98	None
Pioneer	38H72	99	HXX, LL, RR2

* HXX – The HerculexXTRA insect protection trait offers a high level of resistance to European corn borer and fall armyworm. It also offers good resistance to black cutworm and western bean cutworm, and moderate resistance to corn earworm. Lastly it provides protection against Northern and Western corn rootworm.
LL – LIBERTY LINK CORN is tolerant to broadcast applications of Liberty herbicide, glufosinate ammonium. The gene that gives resistance to glufosinate came from a naturally occurring soil bacterium, *Streptomycin hygroscopicus*. Glufosinate is a fast acting, post-emergent, foliar applied, non-selective contact herbicide that controls a broad spectrum of weeds.
RR2 – ROUND-UP READY CORN is resistant to the herbicide glyphosate, a post-emergent, foliar applied, non-selective herbicide that controls a broad spectrum of weeds.

RESULTS

Table 12. Specialty trait hybrids compared to their conventional counterpart.

Hybrid	Specialty traits	DM at harvest %	Yield 35 % DM T/A	Forage Quality Characteristics CP %	NDF %	IVD %	dNDF %	Milk per ton	Milk per acre
33D11	None	32.4	31.9	8.71	41.1	73.6	48.3	2902	31895
33D14	HXX, LL, RR2	29.8	29.4	8.38	38.4	79.5	54.4	3311	34809
	LSD (0.10)	1.6	NS	NS	NS	NS	NS	NS	NS
34A85	RR2	31.8	31.2	7.66	39.8	76.6	50.7	3238	35098
34A89	HXX, LL, RR2	32.2	33.2	8.43	44.8	71.2	46.6	2844	32914
	LSD (0.10)	NS	NS	NS	NS	NS	NS	NS	NS
35A30	None	32.0	30.8	8.47	40.5	82.3	63.2	3394	36519
35A34	HXX, LL, RR2	31.9	29.8	8.30	42.6	76.5	52.7	3154	33351
	LSD (0.10)	NS	NS	NS	NS	NS	6.7	NS	NS
38B85	None	35.8	27.0	8.50	39.8	77.4	49.5	3217	28552
38B87	HXX, LL, RR2	37.1	30.9	8.92	38.8	77.1	52.0	3180	31554
	LSD (0.10)	NS	NS	NS	NS	NS	NS	NS	NS
38H67	None	36.9	29.1	8.79	40.7	77.5	54.7	3184	29394
38H72	HXX, LL, RR2	35.6	30.6	8.35	43.8	71.6	45.3	2863	28795
	LSD (0.10)**	NS	NS	NS	NS	NS	6.7	NS	NS

** See text for further explanation.
NS - None of the hybrids were significantly different from one another.

Table 13. Trial means comparing hybrids with and without specialty traits.

Specialty traits	DM at harvest %	Yield 35 % DM T/A	Forage Quality Characteristics CP %	NDF %	IVD %	dNDF %	Milk per ton	Milk per acre
None	33.8	30.0	8.42	40.4	77.5	53.3	3187	32292
HXX, LL, RR2	33.3	30.8	8.47	41.7	75.2	50.2	3070	32285
LSD (0.10)**	NS	NS	NS	NS	NS	NS	NS	NS

** See text for further explanation.
NS - None of the hybrids were significantly different from one another.

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