

2011 VERMONT RELATIVE MATURITY CORN SILAGE TRIALS

In 2011, the University of Vermont Extension conducted an experiment to evaluate yield and quality of corn hybrids with a range of relative maturities. The goal is to document the best range of corn silage maturities to grow in this area to maximize corn yield and quality.

Table 2. Corn silage hybrids, relative maturity (RM) and traits.

Company	Hybrid	RM	Traits
Wolf River	2087L	87	Leafy
Wolf River	2290GT	90	GT
Dekalb	DKC44-92	94	RR2
Mycogen	TMF2L418	94	HXT, RR2, LL

The trial

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.

Results for the maturity variety trial are listed in Table 5. Dry matter yields were calculated and then adjusted to 35% dry matter for the report. CP, ADF, NDF, and starch are reported on a dry matter basis, and dNDF is reported on a % NDF basis. The numbers presented in the tables are of two replications. A figure is included to report yields in order of relative maturity (Figure 1). There is a figure displaying the relationship between milk per ton and milk per acre (Figure 2). The dotted lines dividing the figure into four quadrants represent the mean milk per ton and acre for the location. Therefore

RESULTS

Seasonal precipitation and temperatures recorded at a weather station in close proximity to the 2011 research site are shown in Table 4. The 2011 growing season had a wide range of weather extremes. In May, 8.67 inches of rain fell, 5.35 inches above the 30 year average. This additional moisture made planting difficult, compacted soils, and affected corn emergence. During June and July, low rainfall amounts and higher than normal temperatures caused the corn to show

Table 5. Yield and quality of corn silage hybrids ranging in maturity from 87-114 RM.

Company	Hybrid	Relative maturity	DM at harvest %	Plant density plants/acre	Yield 35% DM T/A	Forage Quality Characteristics						Milk per	
						CP %	ADF %	NDF %	dNDF %	Starch %	Nel Mcal/lb	ton	acre
Wolf River	2087L	87	40.3	31015*	12.2	8.15*	28.3	48.2	57.7	26.2	0.72	2849	12190
Wolf River	2290GT	90	42.8	35196*	14.5	7.30	19.0*	31.4*	59.6	44.6*	0.80*	3099	15848
Dekalb	DKC44-92	94	35.9	29098*	15.6	6.80	22.9	38.1	59.5	36.8	0.77	3351*	18275
Mycogen	TMF2L418	94	37.5	23522	14.0	8.05*	22.3	37.4	61.9	35.8	0.78*	3370*	16504
Dekalb	DKC45-51	95	36.3	33106*	15.8	6.55	23.7	38.0	58.7	37.7	0.77	3285*	18155
Dekalb	DKC46-07	95	40.4	32931*	17.6	7.35	20.6*	34.4*	60.4	41.3*	0.79*	3185	19579
Dekalb	DKC46-61	96	39.3	35022*	18.8	6.70	23.0	38.2	60.0	38.1	0.77	3198*	21117
Seedway	SW3788VT3	97	40.9	31886*	18.7	7.00	22.5	37.2	56.7	39.1	0.78*	3064	20176
Mycogen	TMF2N494	97	39.2	34674*	18.7	7.25	22.5	36.4	62.0	37.4	0.78*	3206*	21091
Seedway	39041L	98	43.2	32583*	22.7	7.75*	22.7	38.3	59.3	35.4	0.77	3045	24098
Dekalb	DKC48-12	98	38.6	32409*	19.3	6.95	22.9	36.8	57.6	38.0	0.77	3080	20877
Dekalb	DKC48-40	98	39.4	35371*	14.7	7.30	21.2*	35.2*	55.5	39.6*	0.78*	3181	16306
Dekalb	DKC50-77	100	47.7*	26136	17.9	7.30	21.5*	36.1	56.0	40.8*	0.78*	2832	17812
Mycogen	TMF2L533	101	47.0*	31015*	19.6	7.35	21.1*	37.7	55.4	40.7*	0.79*	2957	20320
Seedway	SW4704RR	102	45.9*	27181*	17.0	8.15*	20.8*	35.6*	57.9	40.6*	0.79*	3019	17988
Dekalb	DKC53-45	103	44.0	28053*	21.0	7.30	23.5	39.5	57.2	37.2	0.76	2827	20776
Seedway	SW5501L	106	38.5	15507	15.2	8.05*	21.9	39.2	61.0	36.8	0.77	3421*	18223
Wolf River	2114L	106-108	38.1	25091	19.8	7.80*	23.7	40.8	57.7	35.6	0.77	3285*	22695
Seedway	6601L	108	38.0	26310	18.9	8.05*	23.8	42.2	60.2	34.7	0.76	3402*	22518
Seedway	SW6414RR	108	37.8	20909	14.9	7.70*	21.2*	35.8*	57.6	39.1	0.78*	3343*	17440
Pioneer	34A89	109	37.4	25091	18.6	7.80*	23.5	40.8	59.4	34.4	0.76	3341*	21760
Mycogen	TMF2Q717	109	37.3	22651	21.6	8.10*	23.3	38.0	56.5	36.2	0.77	3233*	24526
Pioneer	P1011AM1	110	37.1	26659	18.5	7.75*	24.6	41.2	57.8	33.6	0.76	3265*	21103
Mycogen	TMF2W727	113	36.0	25613	19.4	7.55*	25.3	41.5	56.8	31.5	0.76	3326*	22562
Pioneer	33F88	114	37.2	27704*	19.3	7.65*	21.1*	35.7*	58.6	38.5	0.79*	3408*	22976
LSD (0.10)**			3.16	8213	NS	0.68	2.82	4.47	NS	5.1	0.02	230	NS
Trial Mean			39.8	28589	17.8	7.51	22.7	38.1	58.4	37.2	0.77	3183	19796

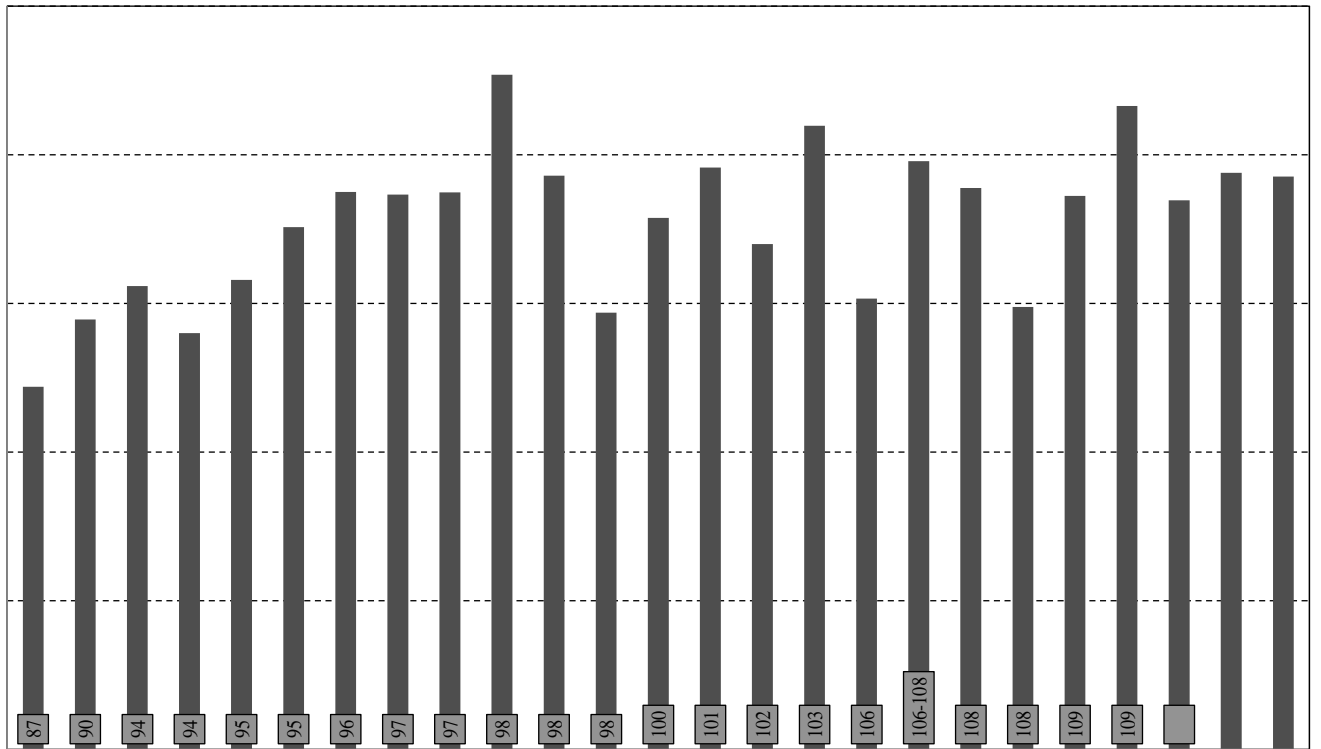


Figure 1. Yield comparison of corn silage hybrids ranging in maturity from 87 to 114 RM. Hybrids did not differ statistically in yield.

Milk per ton was significantly different between hybrids (Table 3). Hybrids with a milk per ton range between 3421 and 3198 lbs of milk per ton of silage ranked at the top of trial (Table 5). Overall there were several varieties that were above average in both yield and quality (Figure 2). These varieties ranged between 96 and 114 RM.

