2011 SHORT SEASON CORN SILAGE REPORT

In 2011, the University of Vermont Extension Crops and Soils Team evaluated yield and quality of short season silage corn varieties in two different locations. While short season corn is an obvious choice in areas that accumulate fewer Growing Degree Days (GDDs), it also has a place in longer season areas. Past UVM Extension variety trials have shown that many shorter season corn varieties can have comparable yields to longer season corn. A shorter season variety can allow for an earlier harvest, providing more time in the fall to apply cover crops and manure. To this end, test sites were chosen in two locations that display these scenarios. One test site was at the Seward Family Farm in East Wallingford, VT, which has a short growing season (2011 GDDs 2028). The second test site was at Borderview Farm in Alburgh, VT, which has a longer growing season (2011 GDDs 2200), and would like to include cover crops in the rotation. Several seed companies submitted varieties for evaluation. Companies and contact names are listed in Table 1. It is important to remember that the data presented in this report is from a single year. Hybrid-performance data from additional tests over several years should be compared before you make a conclusion.

Table 1. Participating companies and local contact information.

Dekalb/Monsanto	**Mycogen**	**Pioneer**	**Schlessman Seed Co.**
Klaus Busch Territory Sales Manager Knox, NY 518-320-2462	Claude Fortin District Sales Manager Highgate, VT 802-363-2803	Jacob Bourdeau Bourdeau Bros. Sheldon, VT 802-933-2277	11513 U.S. Rt. 250 Milan, OH 888-534-7333
Seedway	**TA Seeds**	**Wolf River Valley Seeds**	
Ed Schillawski 3442 Rt 22A Shoreham, VT 802-897-2281	Jeff Grembowicz 2375 Creek Road North Clarendon, VT 802-345-2231	Marcel Moreau District Sales Manager Swanton, VT 802-309-4674	

MATERIALS AND METHODS

Fourteen corn varieties ranging in relative maturity from 70 – 93 days were grown in East Wallingford, and seventeen varieties ranging in relative maturity from 78 – 94 days were grown in Alburgh. Relative Maturity (RM) was provided by the company. Specific varieties, their traits, relative maturities, and at which site they were grown are listed in Table 2.

Table 2. Short season silage corn varieties evaluated in East Wallingford and Alburgh, VT.

Company	Variety	RM (days)	Traits	East Wallingford, VT	Alburgh, VT
Dekalb	DKC 40-22	90	GenSS		X
Dekalb	DKC 43-10	93	GenVT2P		X
Dekalb	DKC 44-92	94	HFC, RR2		X
Mycogen	2K126	82	LL, RR2, SSX	X	X
Mycogen	2J144	83	YGCB	X	
Mycogen	2P174	85	RR2, YGCB	X	X
Mycogen	2R081	80	RR2	X	
Mycogen	2T222	85	RR2	X	X
Mycogen	2T224	86	LL, RR2, SSX	X	X
Mycogen	F2F298	90	HXI, LL, RR2		X
Mycogen	TMF2Q298	89	HXT, RR2, LL		X
Mycogen	X21120	84	Experimental variety		X
Pioneer	38N85	92	RR2		X
Schlessman	698 RR	70-75	RR2	X	
Seedway	3008VT3	90	VT3		X
Seedway	E316RR	90	RR2	X	
Seedway	SW1994RR	80	RR2	X	X
Seedway	SW3254RR	90	RR2		X
Seedway	SW3301L	93	Leafy	X	X
Seedway	SWX29013	78	Experimental variety		X
Syngenta	N19G-GT	85	GT	X	
TA Seeds	TA232-00	83	No traits	X	
TA Seeds	TA240-18	84	Agrisure® GT	X	
Wolf River	2291GT	91	Agrisure® GT	X	X

Agrisure® GT – Glyphosate herbicide (Roundup®, Touchdown®) tolerant.

GenVT2P - Genuity® VT Double PRO™ provides protection against corn earworm and other ear-feeding insects as well as fall armyworm, European corn borer, and corn earworm.

GenSS – Genuity® SmartStax™ provides protection against corn earworm, fall armyworm, Northern corn rootworm, Western bean cutworm, European corn borer, and black cutworm, as well as glyphosate herbicide (Roundup®, Touchdown®) and glufosinate-ammonium herbicide (LibertyLink®) tolerant.

GT – Glyphosate herbicide (Roundup®, Touchdown®) tolerant.

HFC – Processor Preferred® High Fermentable Corn – exhibits characteristics desired by dry mill ethanol plants.

HXI – Herculex I® provides protection against above-ground pests such as European corn borer, Western bean cutworm and black cutworm.

HXT – Herculex Xtra® provides season-long control of a variety of pests, including European corn borer, Western bean cutworm, corn rootworm, and black cutworm.

LL – Glufosinate-ammonium herbicide (LibertyLink®) tolerant.

RR2 – Roundup Ready corn is glyphosate herbicide (Roundup®, Touchdown®) tolerant.

SSX – SmartStax corn provides a broad spectrum of insect control, using multiple modes of action, as well as glyphosate herbicide (Roundup Ready®, Touchdown®) and glufosinate-ammonium (LibertyLink®) tolerance.

VT3 – YieldGard VT Triple™ uses VecTran™ technology which stacks insect- and weed-control traits in one variety. Provides glyphosate herbicide (Roundup®, Touchdown®) tolerance, as well as protection against Western corn rootworms, Northern corn rootworms, European corn borers, black cutworms, stalk borers, wireworms, white grubs, seed corn maggots, early flea beetles, and corn earworms.

YGCB – YieldGard® against corn borer.

The soil type in East Wallingford is a Tioga fine sandy loam. The previous crop was silage corn followed by a winter rye cover crop. Starter fertilizer (16-8-14) was applied at a rate of 250 lbs acre^{-1}. Treatments were planted with a John Deere 7000 at a rate of 32,000 seeds acre^{-1} on 8-June. Lumax (S-metolachlor, atrazine, and mesotrione) was used for weed control at a rate of 2.5 qt acre^{-1}. The plot design was a randomized complete block with two replications. Treatments were varieties. Plots were two rows spaced at 30 inches which ran the length of the field. Population was taken at the time of harvest. On 5-October, an 87.5 ft^2 subplot was harvested by hand and weighed with a platform scale. A subsample of ten plants was chopped with a Troy-Bilt chipper shredder, mixed, and a sample collected and vacuum sealed into 10" x 13" 3 Mil Poly Nylon Vacuum Bags (Uline, model number S-7558) with a Uline 20" Vacuum Sealer (model number H-1075). Samples were then sent to Cumberland Valley Analytical Services in Hagerstown, MD for quality analysis. Dry matter yields were calculated and then adjusted to 35% dry matter. Trial specifics can be found in Table 3.

The soil type at the Alburgh location was a Benson rocky silt loam. The seedbed was spring disked followed by spike tooth harrow. The previous crop was wheat. Starter fertilizer (10-20-20) was applied at a rate of 260 lbs acre^{-1}. Two-row, 40' plots were planted with a John Deere 1750 planter on 1-June. The seeding rate was 34,000 seeds acre^{-1}. The plot design was a randomized complete block with two replications. Treatments were varieties. Cinch ATZ Lite at 3 pints acre^{-1} and Accent at 3/4 oz acre^{-1} were sprayed post emergence for weed control. Ammonium sulfate was side-dressed at a rate of 99 lbs N acre^{-1} at the V6 growth stage. On 7-October, the corn was harvested by a John Deere 2-row chopper and the forage wagon was weighed on a platform scale. Population was taken at the time of harvest, and each treatment was evaluated for percent lodging. A subsample of the harvested material was collected and vacuum sealed into 10" x 13" 3 Mil Poly Nylon Vacuum Bags (Uline, model number S-7558) with a Uline 20" Vacuum Sealer (model number H-1075) and sent to Cumberland Valley Analytical Services in Hagerstown, MD for quality analysis. Dry matter yields were calculated and then adjusted to 35% dry matter. Trial specifics can be found in Table 3.

Table 3. 2011 short season corn trial specifics at two locations, East Wallingford, VT and Alburgh, VT.

Trial information	Seward Family Farm E. Wallingford, VT	Borderview Farm Alburgh, VT
Soil type	Fine sandy loam	Rocky silt loam
Previous crop	Corn, winter rye	Spring wheat
Row width (in.)	30	30
Planting date	8-June	1-June
Harvest date	5-October	7-October
Tillage operations	Spring plow, disk	Spring disk, spike tooth harrow
Starter fertilizer	250 lbs ac^{-1} 16-8-14	260 lbs ac^{-1} 10-20-20
Sidedress	None	99 lbs ac^{-1} N

Silage quality was analyzed using wet chemistry at Cumberland Valley Analytical Services in Hagerstown, MD. Plot samples were vacuum-sealed and sent overnight to the lab where they were analyzed for crude protein (CP), starch, acid detergent fiber (ADF), neutral detergent fiber (NDF), and 30 hour 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 nitrogen 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 (dNDF). Evaluation of forages and other feedstuffs for dNDF 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 dNDF. Forages with increased dNDF will result in higher energy values and, perhaps more importantly, increased forage intakes. Forage dNDF can range from 20 – 80% NDF.

Net energy of lactation (NEL) is calculated based on concentrations of NDF and ADF. NEL can be used as a tool to determine the quality of a ration, but should not be considered the sole indicator of the quality of a feed, as NEL is affected by the quantity of a cow's dry matter intake, the speed at which her ration is consumed, the contents of the ration, feeding practices, the level of her production, and many other factors. Most labs calculate NEL at an intake of three times maintenance. Starch can also have an effect on NEL, where the greater the starch content, the higher the NEL (measured in Mcal per pound of silage), up to a certain point. High grain corn silage can have average starch values exceeding 40%, although levels greater than 30% are not considered to affect energy content, and might in fact have a negative impact on digestion. Starch levels vary from field to field, depending on growing conditions and variety.

The silage performance indices of milk per acre and milk per ton were calculated using a model 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.

Yield data and stand characteristics were analyzed using mixed model analysis using the mixed procedure of SAS (SAS Institute, 1999). Replications within trials were treated as random effects, and hybrids were treated as fixed. Hybrid mean comparisons were made using the Least Significant Difference (LSD) procedure when the F-test was considered significant ($p<0.10$).

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 0.10 level of significance 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 that for 9 out of 10 times, 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 C is significantly different from hybrid A but not from hybrid B. The difference between C 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 C and A 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 C, indicated in bold.

Hybrid	**Yield**
A	6.0
B	7.5*
C	**9.0***
LSD	2.0

RESULTS

April and May 2011 brought excessive rainfall and floods throughout Vermont, saturating many fields and delaying planting on many farms. In August, Tropical Storm Irene hit the Northeast, dumping 4-6" of rain in East Wallingford (Table 4) and Alburgh (Table 5). Weather data is based on National Weather Service data from cooperative observer stations in Rutland and South Hero, VT, which are in close proximity to the variety trials. Historical averages are for 30 years of data (1971-2000).

Table 4. Data from a weather station in close proximity to East Wallingford, VT.

East Wallingford, VT	June	July	August	September
Average temperature (°F)	64	70.6	67.8	62.2
Departure from normal	-0.8	1.4	1.3	2.2
Precipitation (inches)	4.38	4.88	11.24	8.48
Departure from normal	0.53	0.3	7.17	4.33
Growing Degree Days (base 50°F)	419	620	536	453
Departure from normal	-25.5	25.9	2.3	141

Table 5. Data from a weather station in close proximity to Alburgh, VT.

Alburgh, VT	June	July	August	September
Average temperature (°F)	67.1	74.4	70.4*	63.8*
Departure from normal	1.3	3.3	1.6	5.8
Precipitation (inches)	3.52*	3.68*	10.2	5.56
Departure from normal	0.09	-0.29	6.38	2.10
Growing Degree Days (base 50°F)	513	732	563	392
Departure from normal	39.0	79.5	-27.0	79.5

*Due to missing data from the South Hero station, precipitation from March to July 2011, and average temperatures for August and September 2011 are taken from an observer station in Burlington, VT.

East Wallingford Results

Varieties grown in East Wallingford are ranked by dry matter yields at harvest in Table 6. The data presented in the table is of two replications. There were no significant yield differences among the varieties. The lack of significant yield difference may have been due to stand variability among the two replicates. Poor early season conditions may have led to reduced populations. Plant populations were lower than the recommended 30,000 to 32,000 plants acre^{-1}. There was a significant difference among variety quality parameters. Mycogen variety 2J144 had the highest CP concentration (8.45%), but was

not significantly different from 2R081 (Mycogen), 2T222 (Mycogen), 2T244 (Mycogen), SW1994RR (Seedway), SW3301L (Seedway), or TA232-00 (TA Seeds). Varieties differed significantly in fiber concentration but not fiber digestibility. Corn varieties also differed significantly in starch content. Wolf River variety 2291GT had the highest starch content but was not significantly different from the varieties N19G-GT (Syngenta), 2K126 (Mycogen), 2T244, 2J144, 2R081, TA232-00, TA240-18, or 698RR (Schlessman). The Wolf River variety 2291GT also performed highest in NEL and milk per ton. Varieties did not differ in pounds milk per acre.

Table 6. 2011 yield and quality of 14 short season silage corn varieties trialed in East Wallingford, VT.

Hybrid	RM	Harvest moisture	Yield 35% DM	Pop.	Forage quality characteristics						Milk per	
					CP	ADF	NDF	dNDF	Starch	NEL	ton	acre
		%	T ac^{-1}	plants ac^{-1}	%	%	%	%	%	Mcal lb^{-1}	lbs	lbs
E316RR	90	**72.7***	**18.2**	26400	7.00	34.3	56.4	52.3	23.9	0.68	2360	43000
2T222	86	71.0*	17.9	**30600**	7.75*	31.8	52.4	50.6	27.6	0.70	2330	41600
N19G-GT	85	70.9*	17.3	27400	7.05	29.1*	50.1*	54.1	32.1*	0.72*	2580*	**44400**
2291GT	91	68.2	16.4	24900	7.20	27.9*	47.1*	**55.8**	**33.3***	**0.74***	**2700***	44300
2K126	82	70.8*	16.3	28900	6.95	30.6*	48.4*	54.4	30.3*	0.72*	2320	37700
2T244	86	70.4*	15.9	26900	8.10*	28.3*	**46.9***	55.3	30.8*	0.74*	2620*	41700
SW1994RR	80	71.0*	15.8	23900	7.90*	31.2*	52.7	53.1	27.9	0.70	2510*	39800
2J144	83	68.6	15.0	25400	**8.45***	**27.8***	48.5*	52.8	31.6*	0.72*	2580*	38800
2R081	80	71.0*	14.8	19400	7.90*	29.8*	49.2*	55.3	30.3*	0.71	2560*	38000
TA232-00	83	65.5	13.9	22700	8.00*	28.9*	49.0*	54.1	30.2*	0.73*	2610*	36400
TA240-18	84	69.2*	13.6	24900	7.45	30.1*	48.1*	53.6	31.0*	0.72*	2330	31700
SW3301L	93	72.7*	13.5	22200	7.65*	35.4	57.8	53.0	21.3	0.67	2340	31700
2P174	85	70.3*	13.3	25600	7.35	29.5*	49.5*	54.5	30.6*	0.72*	2560*	34500
698RR	70	60.0	13.2	20400	5.95	30.7*	51.3*	55.4	29.8*	0.73*	2610*	34300
LSD (0.10)		3.7	NS	NS	0.86	3.4	5.0	NS	4.7	0.03	218	NS
Mean		69.5	15.4	25000	7.48	30.4	50.5	53.9	29.3	0.71	2500	38400

NS – no statistical significance was determined between varieties.

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

Figure 1 displays the relationship between milk per ton and milk per acre. The dotted lines dividing the figure into four quadrants represent the mean milk per ton and milk per acre for the location. Therefore hybrids that fall above or to the right of the lines performed better than the trial average and hybrids below or to the left of the lines performed below average. Based on the data from this one location the varieties 2291GT, N19G-GT, SW1994RR, 2T224, and 2J144 all performed above average for both yield and quality.

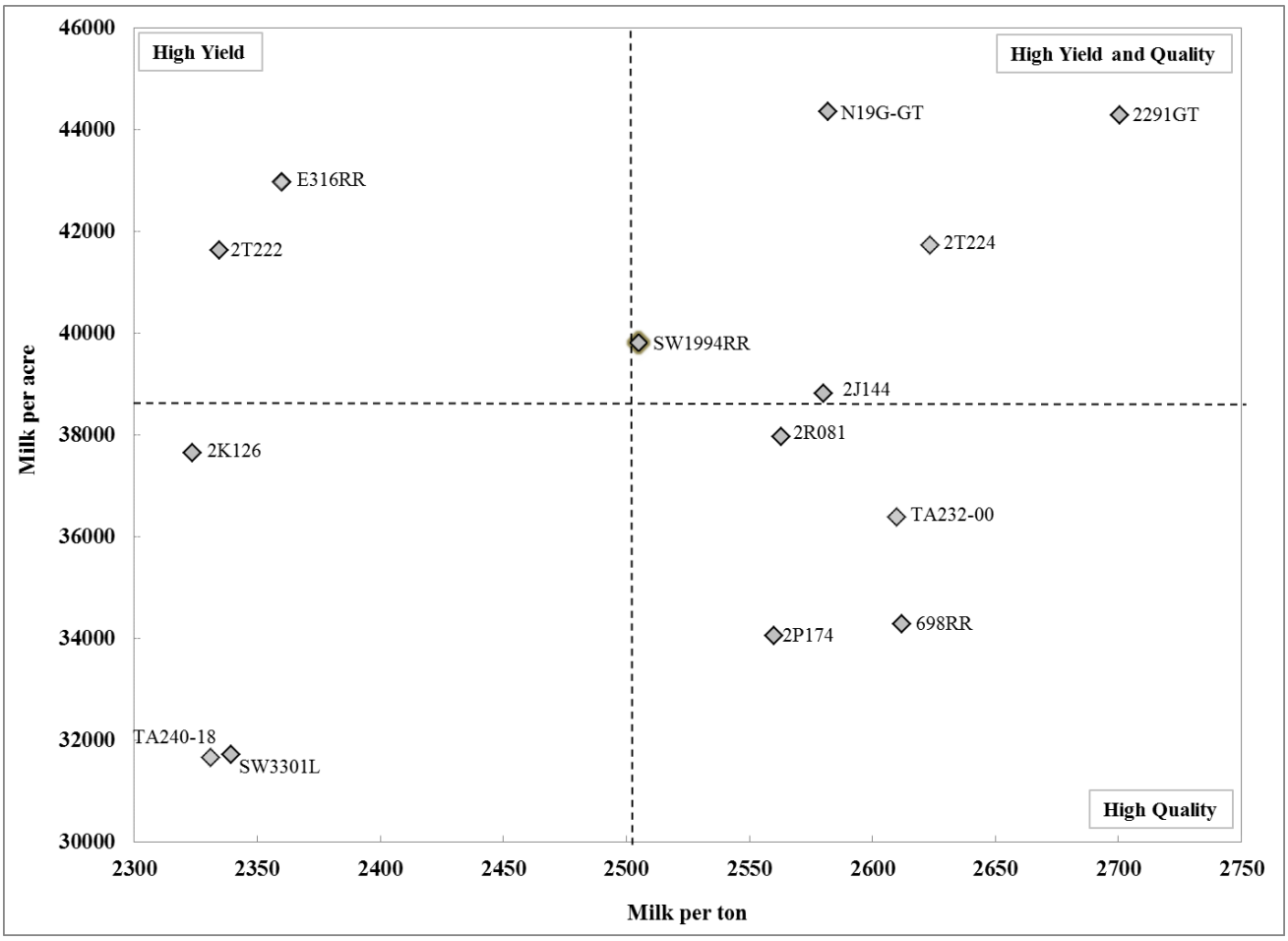

Figure 1. Relationship between milk per ton and milk per acre for short season corn silage varieties grown in East Wallingford, VT. ***Dotted lines represent the mean milk per ton and milk per acre for the location.***

Alburgh Results

In Alburgh, the corn trial was harvested at moisture levels below the recommended range of 60 to 70% whole plant moisture. Rain prevented the trial from being harvested at the proper moisture content. The Seedway variety SW3301L yielded the highest, although not significantly different from DKC43-10 (Dekalb), X21120 (Mycogen), DKC44-92 (Dekalb), 3008VT3 (Seedway), or 2T222 (Table 7 and Figure 2). Significant lodging was recorded in Alburgh due to raccoons and Tropical Storm Irene. Some plots had up to 50% lodged plants, although some lodged plants were still harvestable.

Table 7. Harvest characteristics of 17 short season corn silage varieties – Alburgh, VT.

Hybrid	RM	Harvest moisture	Yield 35% DM	Harvest population	Plants lodged
		%	T ac^{-1}	plants ac^{-1}	%
SW3301L	93	53.0*	**22.5***	24100	50.0
DKC 43-10	93	52.6*	20.7*	26500	15.0
X21120	84	45.3	19.6*	26000	5.00
DKC 44-92	94	55.8*	19.3*	23400	32.5
3008VT3	90	55.1*	17.3*	23300	25.0
2T222	85	45.1	17.0*	23100	7.50
TMF2Q298	89	52.2	16.4	24400	37.5
38N85	92	50.6	16.1	27300	10.0
SWX29013	78	43.9	15.6	28900	**0.00**
F2F298	90	52.5*	15.5	26400	32.5
DKC 40-22	90	54.0*	15.1	24200	22.5
SW1994RR	80	47.6	13.2	23200	2.50
2291GT	91	50.5	13.2	28400	30.0
2K126	82	51.5	12.9	**30100**	10.0
2T224	86	49.4	12.6	25600	10.0
2P174	85	54.2*	11.4	23400	2.50
SW3254RR	90	**58.0***	9.8	20400	42.5
LSD (0.10)		5.7	6.1	NS	NS
Means		51.2	15.8	25200	19.7

NS – no statistical significance was determined between varieties.
* Varieties that did not perform significantly lower than the top performing variety in a particular column are indicated with an asterisk.

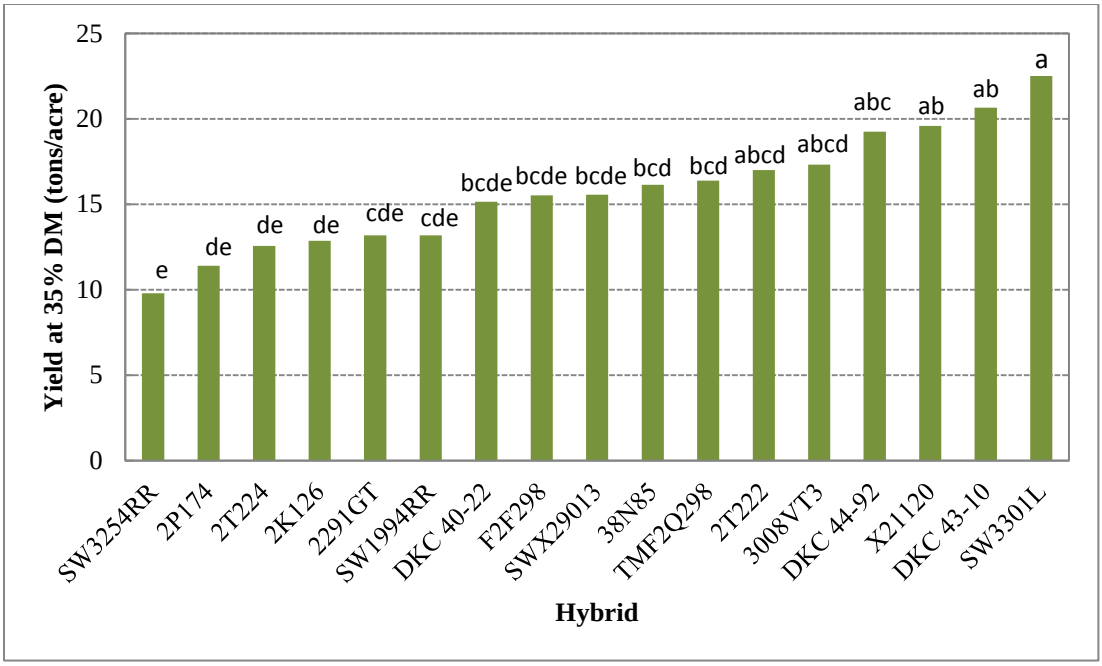

Figure 2. Short season silage corn yields in Alburgh, VT.

Table 8. Forage quality of 17 short season corn silage varieties - Alburgh, VT.

Hybrid	RM	Forage quality characteristics						Milk per	
		CP	ADF	NDF	dNDF	Starch	NEL	ton	acre
		%	%	%	%	%	Mcal lb^{-1}	lbs	lbs
SW3301L	93	6.95	24.2	41.3	53.5	36.7	0.76	2890	**22700***
DKC 43-10	93	6.95	22.5	37.8	55.7	40.0	0.77*	2960	21200*
X21120	84	7.85	**19.9**	**34.5**	52.4	42.5	0.79*	2840	19400*
DKC 44-92	94	6.90	22.1	36.7	55.7	40.1	0.78*	2900	19500*
3008VT3	90	7.40	24.1	39.3	52.6	37.0	0.76	2690	15800
2T222	85	7.10	20.6	34.8	52.1	**43.9**	0.80*	2880	17100*
TMF2Q298	89	7.95	23.2	37.3	52.6	36.3	0.78*	2750	15800
38N85	92	7.55	21.1	35.2	54.3	39.5	0.79*	2940	16600
SWX29013	78	7.05	21.8	37.1	62.0*	41.2	0.78*	**3010**	16500
F2F298	90	7.15	23.3	38.1	**63.0***	37.7	0.78*	2960	16100
DKC 40-22	90	6.75	24.8	39.0	48.8	37.1	0.76	2530	13600
SW1994RR	80	7.30	21.1	**34.5**	56.3	41.7	**0.80***	2890	13500
2291GT	91	6.75	26.1	43.0	45.9	34.6	0.75	2570	12000
2K126	82	7.25	24.0	40.7	54.4	36.4	0.77*	2870	13000
2T224	86	7.60	23.0	37.9	51.5	38.2	0.78*	2790	12200
2P174	85	7.80	22.7	35.9	52.1	38.0	0.77*	2720	10900
SW3254RR	90	**8.45**	27.8	46.4	52.1	27.8	0.73	2760	9480
LSD (0.10)		NS	NS	NS	4.9	NS	0.03	NS	6100
Means		7.34	23.1	38.2	53.8	38.1	0.77	2820	15600

NS – no statistical significance was determined between varieties.

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

No significant difference was determined between short season corn silage hybrids in Alburgh, VT for CP, ADF, NDF, starch, or milk per ton (Table 8). In Alburgh, the BMR variety F2F298 (Mycogen) had the highest 30-hour digestible NDF (dNDF), although not statistically significant from SWX29013 (Seedway). SW1994RR had the highest NEL, but was not statistically different from the varieties DKC43-10, X21120, DKC44-92, 2T222, TMF2Q298 (Mycogen), 38N85 (Pioneer), SWX29013, F2F298, 2K126, 2T224, and 2P174 (Mycogen). It was calculated that SW3301L, DKC43-10, X21120, DKC 44-92, and 2T222 would yield the most milk per acre.

Figure 3 displays the relationship between milk per ton and milk per acre for varieties trialed in Alburgh, VT. The dotted lines dividing the figure into four quadrants represent the mean milk per ton and acre for the location. Therefore hybrids that fall above or to the right of the lines performed better than the average, and hybrids below or to the left of the lines performed below average. There were many varieties at the Alburgh location that ranked above average in yield and quality. Varietal selection should be based on the goals of the farm as well as data compared from multiple sites and years.

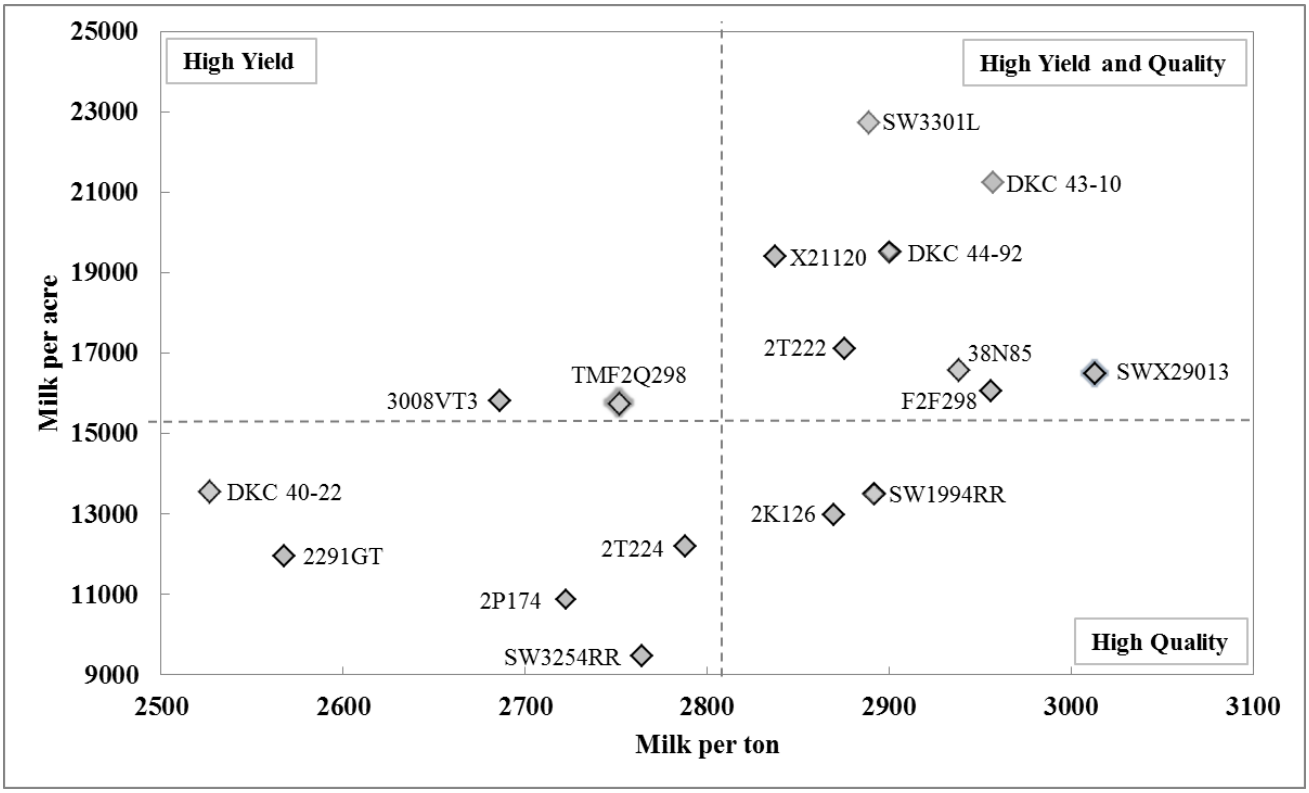

Figure 3. Relationship between milk per ton and milk per acre for short season corn silage varieties grown in Alburgh, VT. ***Dotted lines represent the mean milk per ton and milk per acre.***

DISCUSSION

All varieties trialed in East Wallingford yielded statistically the same with a trial average of 15.4 tons acre^{-1}. Most of the varieties did not reach proper harvest maturity prior to a killing frost. This can impact both yield and quality. The Wolf River variety 2291GT displayed high quality, with low ADF and NDF levels, and was the highest ranking variety in starch, NEL, and milk per ton, but crude protein was below average compared to the other varieties. The Mycogen variety 2J144 had the highest crude protein and the lowest ADF, low NDF, and was a top performer amongst the varieties for starch, NEL, and milk per ton. Poor early season conditions that brought higher than normal precipitation and below average temperatures certainly impacted yields at this site.

In Alburgh, all varieties reached proper maturity for harvest. The variety trial was harvested past optimum maturity due to poor fall harvest conditions. Overall the short season corn yielded an average of 15.8 tons acre^{-1}. Severe lodging in some plots may have reduced the average yield for this trial. The range of yields was between 9.8 and 22.5 tons acre^{-1}, showing the importance of proper varietal selection to maximize short season corn yields. The Seedway variety SW3301L yielded the highest and had the most milk per acre. Short season silage varieties DKC43-10, X21120, and DKC44-92 also yielded and performed well with high NEL and milk per acre.

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