2016

Short Season Corn Silage Variety Trial

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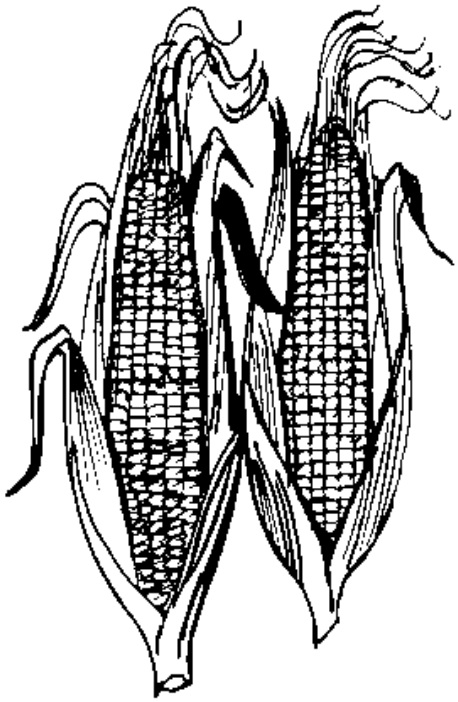

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UNIVERSITY OF VERMONT EXTENSION
CULTIVATING HEALTHY COMMUNITIES

2016 SHORT SEASON CORN SILAGE VARIETY TRIAL

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In 2016, the University of Vermont Extension Northwest Crops and Soils Program evaluated yield and quality of short season corn silage varieties at Borderview Research Farm in Alburgh, VT. 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. Growing a shorter season variety can allow for more time in the fall to adequately prepare the soil for winter by applying manure and planting cover crops, thereby minimizing nutrient and soil losses. In addition to these benefits, past UVM Extension variety trials have shown that many of these shorter season corn varieties can have comparable yield and quality to longer season corn varieties. It is important to remember that the data presented in this report are from a single year. Hybrid-performance data from additional tests over several years should be compared when making varietal selections.

MATERIALS AND METHODS

Several seed companies submitted varieties for evaluation (Table 1). Thirty-nine corn varieties were evaluated, ranging in relative maturity (RM) from 80 to 97 days. Details for the varieties including company, genetic traits, and RM are listed in Table 2.

Table 1. Participating companies and contact information.

Albert Lea Seed	DEKALB-Monsanto	Channel Bio, LLC	Chemgro
Matt Leavitt Albert Lea, MN (800) 235-3547	Gaurav Goyal Ithaca, NY (352) 278-7131	James Valent St. Louis, MO (814) 571-8600	Donald Upton Clayton, NY (315) 486-1080

Mycogen	Seedway	T.A. Seeds
Claude Fortin Highgate, VT (802) 363-2803	Ed Schillawski Shoreham, VT (802) 338-6930	Cory Chelko Jersey Shore, PA (866) 813-7333

Table 2. Short season silage corn varieties evaluated in Alburgh, VT, 2016.

Variety	Company	Traits	Relative Maturity
2D095	Mycogen	HXT, LL, RR2	80
185-15VT2PRIB	Channel Bio, LLC	VT2PRIB	85
TMF2R198	Mycogen	LL, RR2, RA, SSX	85
2G165	Mycogen	Agrisure 3122, LL, GT	85
4668G3A	Chemgro Seeds	Artesian 3011A	86
DKC36-30	DEKALB-Monsanto	VT2PRIB	86
TMF86H77 RA	Mycogen	SSX, LL, RA, RR2	86
SW 2754-RR	Seedway	RR	86
TA266-28RIB	T.A. Seeds	SSRIB	86
187-49VT2PRIB	Channel Bio, LLC	VT2PRIB	87
4775RDP	Chemgro Seeds	VT2PRIB	87
189-03VT2PRIB	Channel Bio, LLC	VT2PRIB	89
DKC39-27	DEKALB-Monsanto	SSRIB	89
TA089-00	T.A. Seeds	None	89
5018G3	Chemgro Seeds	Agrisure 3000 GT	90
190-13VT2RIB	Channel Bio, LLC	VT2PRIB	90
5141RRN	Chemgro Seeds	RR	91
TMF91Q25	Mycogen	SSX, LL, RR2	91
SW 3019	Seedway	GT, CB, LL	91
SW 3654-RR	Seedway	RR	91
Viking 42-92N	Albert Lea Seed	None	92
192-09VT3PRIB	Channel Bio, LLC	VT3PRIB	92
5245RDP	Chemgro Seeds	VT2PRIB	92
F2F345	Mycogen	SSX, LL, RR2, RA	92
TA370-53EZ	T.A. Seeds	None	92
TA387-22DPRIB	T.A. Seeds	VT2PRIB	92
193-53STXRIB	Channel Bio, LLC	SSRIB	93
DKC43-48	DEKALB-Monsanto	VT3PRIB	93
194-14VT2PRIB	Channel Bio, LLC	VT2PRIB	94
DKC44-13	DEKALB-Monsanto	SSRIB	94
TMF94L37	Mycogen	SSX, LL RR2	94
TMF2L395	Mycogen	RR2	94
DKC45-07	DEKALB-Monsanto	SSRIB	95
DKC45-65	DEKALB-Monsanto	SSRIB	95
F2F379	Mycogen	SSX, LL, RR2, RA	95
DKC46-20	DEKALB-Monsanto	VT3PRIB	96
TMF2Q419	Mycogen	SSX, LL, RR2, RA	96
197-68STXRIB	Channel Bio, LLC	SSRIB	97
5775GTCB	Chemgro Seeds	GT, CB, LL	97

Traits:
Artesian 3011A- protection from corn borer and corn rootworm, Agrisure Artesian drought tolerance and herbicide tolerance
Agrisure® 3122 – protects against corn borer, rootworm, glyphosate tolerant, 5% integrated, single-bag refuge
CB- Corn borer resistant
GT- Glyphosate tolerant.
HXT- Herculex Xtra®, provides season-long insect protection from corn borer, corn rootworm, black cutworm, western bean cutworm, and fall army work
LL – Glufosinate-ammonium herbicide (LibertyLink®) tolerant.
RA- Refuge Advanced® contains refuge seed mixed in with hybrid seed eliminating the need to plant a separate refuge.
RR – Roundup Ready corn is glyphosate herbicide (Roundup®) tolerant.
RR2 – Roundup Ready corn is glyphosate herbicide (Roundup®, Touchdown®) tolerant.
SSRIB- Genuity® SmartStax®RIB Complete® provides broad spectrum protection against corn earworm and other ear-feeding insects as well as fall armyworm, European corn borer, and corn earworm with multiple modes of action; glyphosate herbicide tolerance ((Roundup Ready®, Touchdown®) and glufosinate-ammonium (LibertyLink®)). Bags of this seed also contain refuge seed mixed in eliminating the need for a separate refuge (Refuge-in-bag).
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.
VT2PRIB- Genuity® VT Double PRO™ RIB Complete® provides protection against corn earworm and other ear-feeding insects as well as fall armyworm, European corn borer, and corn earworm. Bags of this seed also contain refuge seed mixed in, eliminating the need for a separate refuge (Refuge-in-bag).
VT3PRIB- Genuity® VT Triple PRO™ same as double with addition of rootworm trait

The soil type at the Alburgh location was Benson rocky silt loam (Table 3). The previous crop was corn and the seedbed was spring disked followed by spike tooth harrow. Starter fertilizer (10-20-20) was applied at a rate of 200 lbs ac^{-1}. Plots were 30' long and consisted of two rows spaced at 30 inches planted with a John Deere 1750 planter. The seeding rate was 36,000 seeds per acre. The plot design was a randomized complete block with three replications. The treatments were 39 varieties that ranged in relative maturity from 80 to 97 days. Nitrogen fertilizer in form of urea (46-0-0) was applied on 27-Jun at a rate of 240 lbs ac^{-1}, along with 100 lbs ac^{-1} potash (0-0-62). Fertility rates were based on soil and nitrate tests. Lumax was sprayed at a rate of 3 pints ac^{-1} on 3-Jun.

Table 3. Short season corn trial specifics for Alburgh, VT, 2016.

	Borderview Research Farm Alburgh, VT
Soil type	Benson rocky silt loam 8-15% slope
Previous crop	Corn
Row width (in.)	30
Planting date	17-May
Harvest date	19-Sep
Tillage operations	Spring disk, spike tooth harrow
Weed Control	3-Jun, Lumax 3 pints ac^{-1}
Starter fertilizer	200 lbs ac^{-1} 10-20-20
Side-dress	27-Jun 100 lbs ac^{-1} 0-0-62 27-Jun 140 lbs ac^{-1} 46-0-0

On the 19-Sep, the corn was harvested with a John Deere 2-row chopper, and the forage wagon was weighed on a scale. A subsample of the harvested material was collected, dried, ground, and then analyzed at the University of Vermont's Testing Laboratory, Burlington, VT, for silage quality. The samples were ground through a Wiley mill (2mm screen), and then through a UDY Corporation cyclone sample mill (1mm screen). The samples were then analyzed using the FOSS NIRS (near infrared reflectance spectroscopy) DS2500 Feed and Forage analyzer for crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (NDF), starch, and 48-hour digestible NDF (NDFD). A subset of samples

(n=20) was sent to DairyOne forage laboratory (Ithaca, NY) for wet chemistry analysis. This information was used to bias our current NIR forage calibration. Dry matter yields were calculated and then adjusted to 35% dry matter.

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, non-protein 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). This fraction includes cellulose, hemicellulose, and lignin. Because these components are associated 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 (NDFD). NDFD is the percent of NDF that is digestible in 48 hours. Research has demonstrated that lactating dairy cows will eat more dry matter and produce more milk when fed forages with optimum NDFD. Forages with increased NDFD will result in higher energy values and, perhaps more importantly, increased forage intakes. Forage NDFD can range from 20 – 80% NDF.

The silage performance indices of total digestible nutrients (TDN), net energy of lactation (NE_L), milk per ton, and milk per acre were calculated using a model derived from the spreadsheet entitled "MILK2006," developed by researchers at the University of Wisconsin. Net energy of lactation (NE_L) is calculated based on concentrations of NDF and ADF. NE_L can be used as a tool to determine the quality of a ration. However, it should not be considered the sole indicator of the quality of a feed as NE_L 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. Starch can also have an effect on NE_L, where the greater the starch content, the higher the NE_L (measured in Mcal per pound of silage), up to a certain point. High grain corn silage can have starch values exceeding 40%. Total digestible nutrients (TDN) report the percentage of digestible material in silage. Total digestible nutrients are calculated from ADF and express the differences in digestible material between silages.

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 (LSDs) 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. In this example, 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.

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

RESULTS

Weather data was recorded with a Davis Instrument Vantage PRO2 weather station, equipped with a WeatherLink data logger at Borderview Research Farm in Alburgh, VT. Missing precipitation data from 17-Aug through 31-Oct was supplemented using data provided by the NOAA from Highgate, VT. The entire corn-growing season was unusually dry, accumulating 7.27 inches less rain than the 30 year average (Table 4). Despite the lack of rain, June and July were close to the average temperature. However, August and September were hotter than the average. Overall, there were an accumulated 2562 GDDs this season, approximately 262 more than the historical 30-year average.

Table 4. Weather data for Alburgh, VT, 2016.

Alburgh, VT	May	June	July	August	September
Average temperature (°F)	58.1	65.8	70.7	71.6	63.4
Departure from normal	1.8	0.0	0.1	2.9	2.9
Precipitation (inches)	1.50	2.80	1.80	3.00	2.50
Departure from normal	-1.92	-0.88	-2.37	-0.93	-1.17
Growing Degree Days (base 50°F)	340	481	640	663	438
Departure from normal	74	7	1	82	98

Based on weather data from a Davis Instruments Vantage Pro2 with WeatherLink data logger. Historical averages are for 30 years of NOAA data (1981-2010) from Burlington, VT.
Missing precipitation data from 17-Aug through 31-Oct was supplemented using data provided by the NOAA from Highgate, VT.

The average yield at 35% dry matter for the trial was 24.9 tons per acre (Table 5, Figure 1). The highest yielding variety was DEKALB's DKC43-48 at 33.5 tons per acre. Other varieties including DKC39-27, TA370-53EZ, 193-53STXRIB, 194-14VT2PRIB, DKC44-13, TMF2L395, and DKC45-65 had yields that were not significantly different from the top yielder. On average varieties were harvested at 38.5% dry matter.

Table 5. Harvest characteristics of short season corn silage varieties – Alburgh, VT, 2016.

Variety	Company	Relative maturity days	Harvest DM† %	Yield @ 35% DM tons ac^{-1}
2D095	Mycogen	80	40.5	26.0
185-15VT2PRIB	Channel Bio, LLC	85	40.8	22.2
TMF2R198	Mycogen	85	39.6	26.1
2G165	Mycogen	85	39.3	26.5
4668G3A	Chemgro Seeds	86	37.7*	19.9
DKC36-30	DEKALB-Monsanto	86	38.4	26.3
TMF86H77RA	Mycogen	86	40.8	21.1
SW 2754-RR	Seedway	86	38.6	21.6
TA266-28RIB	T.A. Seeds	86	40.0	25.0
187-49VT2PRIB	Channel Bio, LLC	87	38.0	27.4
4775RDP	Chemgro Seeds	87	38.8	21.1
189-03VT2PRIB	Channel Bio, LLC	89	37.9	19.4
DKC39-27	DEKALB-Monsanto	89	39.1	31.1*
TA089-00	T.A. Seeds	89	40.6	25.6
5018G3	Chemgro Seeds	90	40.3	19.7
190-13VT2RIB	Channel Bio, LLC	90	38.4	21.6
5141RRN	Chemgro Seeds	91	37.1*	23.5
TMF91Q25	Mycogen	91	40.5	21.5
SW 3019	Seedway	91	37.6*	23.5
SW 3654-RR	Seedway	91	38.8	20.3
Viking 42-92N	Albert Lea Seed	92	39.1	19.5
192-09VT3PRIB	Channel Bio, LLC	92	39.2	20.3
5245RDP	Chemgro Seeds	92	38.1	22.7
F2F345	Mycogen	92	37.8*	23.0
TA370-53EZ	T.A. Seeds	92	37.1*	32.9*
TA387-22DPRIB	T.A. Seeds	92	38.3	24.9
193-53STXRIB	Channel Bio, LLC	93	39.4	29.7*
DKC43-48	DEKALB-Monsanto	93	38.0	**33.5***
194-14VT2PRIB	Channel Bio, LLC	94	39.7	31.3*
DKC44-13	DEKALB-Monsanto	94	38.0	32.6*
TMF94L37	Mycogen	94	35.7*	24.5
TMF2L395	Mycogen	94	**34.0***	30.7*
DKC45-07	DEKALB-Monsanto	95	36.4*	24.8
DKC45-65	DEKALB-Monsanto	95	37.2*	30.6*
DKC46-20	Mycogen	95	38.4	22.2
F2F379	DEKALB-Monsanto	96	38.7	20.2
TMF2Q419	Mycogen	96	38.9	27.0
197-68STXRIB	Channel Bio, LLC	97	36.8*	27.6
5775GTCB	Chemgro Seeds	97	36.3*	25.4
LSD (0.10)		--	1.47	5.80
Trial Mean		90	38.5	24.9

Varieties that did not perform significantly different than the top variety shown in **bold** variety are indicated with an asterisk *

†DM, dry matter

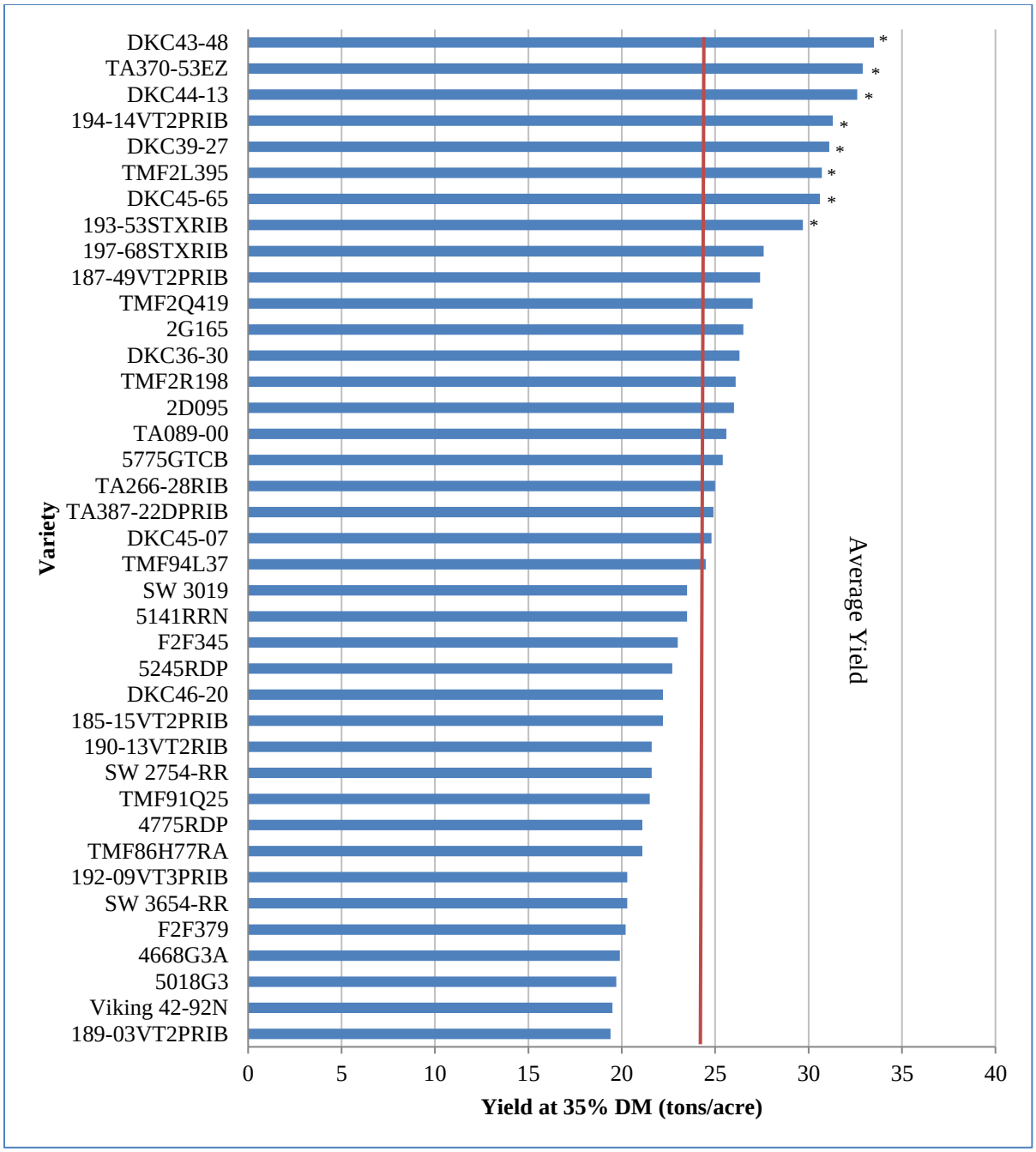

Figure 1. Yield at 35% moisture for 39 short season corn silage varieties. The red line indicates the average yield.
* Varieties that did not perform significantly lower than the top performing variety are indicated with an asterisk.

All forage quality characteristics varied statistically across varieties (Table 6). Crude protein ranged from 6.19% to 9.89%, with the trial average being 8.2%. Protein was highest for the variety TMF2R198, but was not statistically significant from 4 other varieties. The ADF was lowest for DEKALB variety DKC 39-27, but was not significant from 27 other varieties, and the NDF was lowest for Chemgro Seeds variety 4668G3A, but was not significant from 20 other varieties. Digestible NDF (NDFD) was highest for variety Viking 42-92N at 74.3%. The trial mean was 69.7%. The variety with highest projected milk per ton of forage was F2F369 at 3595 lbs ton^{-1}, and the variety with the highest projected milk production per acre of forage was TA387-22DPRIB at 41,795 lbs ac^{-1}.

Table 6. Forage quality of 39 short season corn silage varieties - Alburgh, VT, 2016.

Variety	Company	RM	Forage Quality Characteristics						Milk	
			CP % of DM	ADF % of DM	NDF % of DM	NDFD % of NDF	TDN % of DM	NE_L Mcal lb^{-1}	ton^{-1} lbs	$acre^{-1}$ lbs
		Days								
2D095	Mycogen	80	8.94*	27.3	47.0	67.0	73.9	0.67	3209	26953
185-15VT2PRIB	Channel Bio, LLC	85	8.55	23.0*	39.7*	66.8	74.3	0.68	3300	25682
TMF2R198	Mycogen	85	**9.89***	23.9*	42.1*	69.0	78.0*	0.73*	3581*	30763
2G165	Mycogen	85	8.79	23.2*	41.3*	68.8	77.4*	0.72*	3538*	27266
4668G3A	Chemgro Seeds	86	8.34	23.0*	**38.3***	68.2	75.8	0.70*	3432*	33086
DKC36-30	DEKALB-Monsanto	86	9.74*	24.3*	41.4*	66.9	75.3	0.69	3370	23395
TMF86H77RA	Mycogen	86	7.95	24.5*	44.8	71.2*	76.4*	0.70*	3433*	23967
SW 2754-RR	Seedway	86	8.37	25.4*	44.1	69.3	77.7*	0.72*	3543*	25093
TA266-28RIB	T.A. Seeds	86	8.65	25.9	44.6	69.0	77.6*	0.72*	3525*	25513
187-49VT2PRIB	Channel Bio, LLC	87	7.25	25.0*	45.4	72.5*	75.4	0.69	3343	31155
4775RDP	Chemgro Seeds	87	8.19	24.7*	45.1	72.3*	77.7*	0.72*	3530*	23950
189-03VT2PRIB	Channel Bio, LLC	89	7.55	24.4*	42.8*	72.0*	78.0*	0.73*	3574*	29301
DKC39-27	DEKALB-Monsanto	89	8.10	**22.6**	40.0*	71.0	76.9*	0.72*	3508*	23129
TA089-00	T.A. Seeds	89	8.29	26.3	44.0	69.9	77.1*	0.71*	3484*	25761
5018G3	Chemgro Seeds	90	8.22	24.2*	42.4*	69.6	77.8*	0.72*	3562*	28069
190-13VT2RIB	Channel Bio, LLC	90	7.03	23.8*	43.6	72.5*	77.5*	0.72*	3527*	28374
5141RRN	Chemgro Seeds	91	7.60	24.8*	43.8	71.0	78.0*	0.73*	3567*	22277
TMF91Q25	Mycogen	91	6.19	30.8	55.3	70.4	72.2	0.65	3065	28424
SW 3019	Seedway	91	8.23	26.6	44.9	70.4	76.7*	0.71*	3456*	24208
SW 3654-RR	Seedway	91	8.17	25.4*	45.7	71.7*	76.3*	0.70	3416	23544
Viking 42-92N	Albert Lea Seed	92	7.07	23.9*	44.0	**74.3***	77.8*	0.72*	3550*	28909
192-09VT3PRIB	Channel Bio, LLC	92	7.51	25.4*	42.9*	68.3	**78.0***	0.73*	3575*	38830*
5245RDP	Chemgro Seeds	92	6.74	28.3	51.0	70.8*	76.2*	0.69	3380	33095
F2F345	Mycogen	92	8.34	24.0*	43.1*	70.1	77.3*	0.72*	3524*	29204
TA370-53EZ	T.A. Seeds	92	7.34	24.6*	42.1*	68.5	77.9*	0.73*	3572*	39334*
TA387-22DPRIB	T.A. Seeds	92	7.95	23.6*	42.3*	68.4	77.2*	0.72*	3511*	**41795***
193-53STXRIB	Channel Bio, LLC	93	8.49	23.2*	41.4*	70.7	78.0*	0.73*	3587*	27275
DKC43-48	DEKALB-Monsanto	93	8.07	24.9*	42.0*	69.8	78.0*	0.73*	3582*	31701
194-14VT2PRIB	Channel Bio, LLC	94	7.75	23.1*	41.7*	72.0*	78.0*	0.73*	3583*	25557
DKC44-13	DEKALB-Monsanto	94	7.81	29.2	51.3	69.7	76.7*	0.70	3402	31292
TMF94L37	Mycogen	94	8.08	28.7	43.8	66.4	77.6*	0.72*	3501*	41119*
TMF2L395	Mycogen	94	7.47	25.2*	43.8	72.0	77.3*	0.72*	3510*	34101
DKC45-07	DEKALB-Monsanto	95	9.28*	25.8	42.2*	69.2	78.0*	0.73*	3580*	38414*
DKC45-65	DEKALB-Monsanto	95	8.56	25.8	41.2*	67.1	78.0*	0.73*	3588*	38456*
DKC46-20	Mycogen	95	8.77	24.4*	40.4*	70.1	77.4*	0.72*	3532*	37461*
F2F379	DEKALB-Monsanto	96	8.60	23.3*	43.4*	70.0	78.0*	**0.73***	**3595***	32135
TMF2Q419	Mycogen	96	8.41	26.7	43.6	66.2	78.0*	0.73*	3569*	34052
197-68STXRIB	Channel Bio, LLC	97	8.44	26.1	45.4	69.1	77.6*	0.72*	3525*	40391*
5775GTCB	Chemgro Seeds	97	9.45*	23.2*	40.3*	70.7	77.2*	0.72*	3534*	36702*
LSD (0.1)		-	1.03	2.92	5.07	3.44	1.86	0.03	167	6321
Trial Mean		90	8.20	25.1	43.8	69.7	77.0	0.71	3491	30506

Top performing variety is indicated in **bold**.

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

Figure 2 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. 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. Varietal selection should be based on the goals of the farm as well as data compared from multiple sites and years.

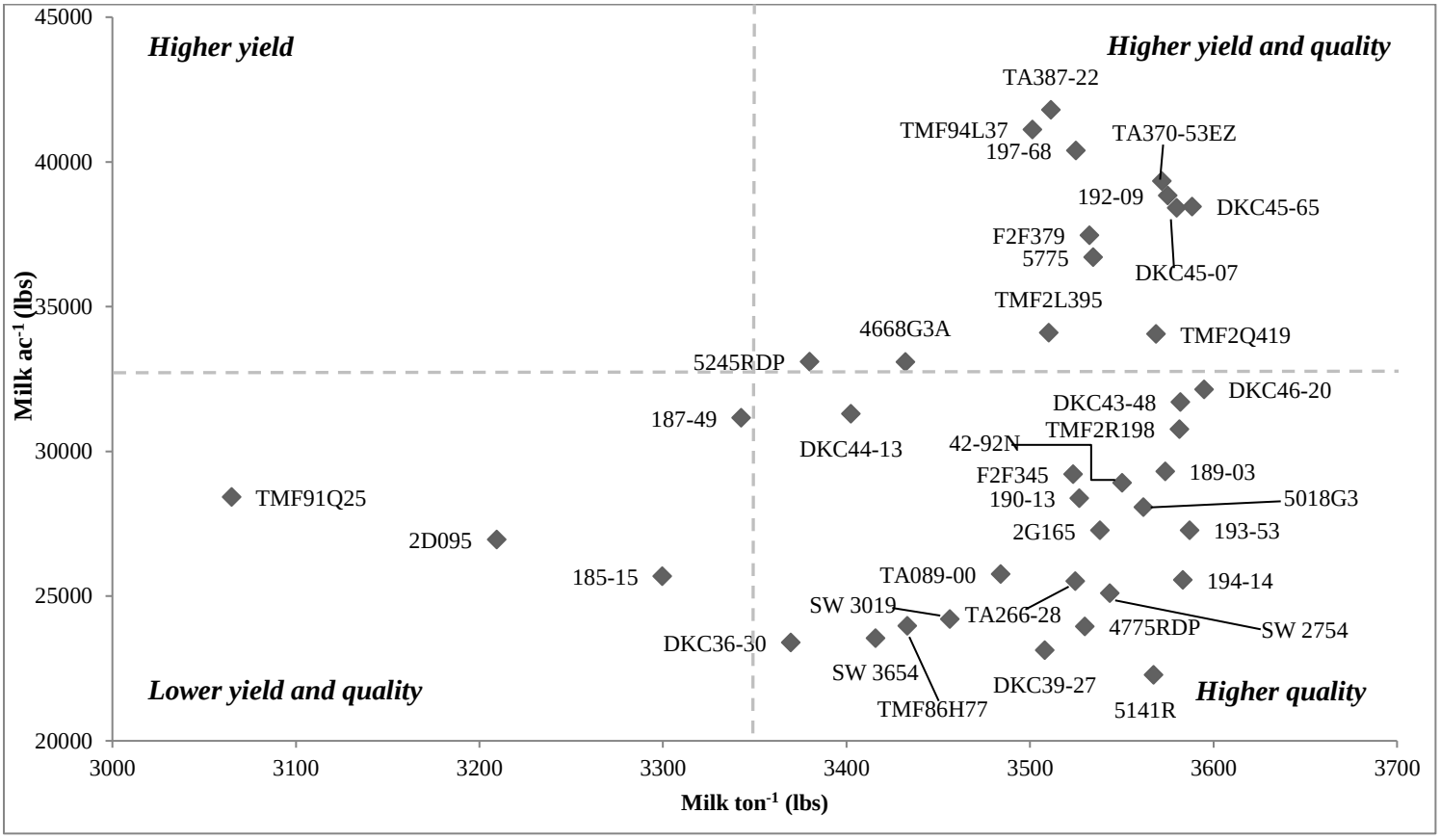

Figure 2. Relationship between milk per ton and milk per ac^{-1} for short season corn silage varieties grown in Alburgh, VT. Dotted lines represent the mean milk per ton^{-1} and milk per ac^{-1}.

DISCUSSION

It is important to remember that the results only represent one year of data. Due to low rainfall, this season was not favorable for silage corn. Varieties reached proper maturity on time, but likely due to drought like conditions during the growing season had lower yield than what has been seen in past seasons. It is important to note that all varieties were higher than the desired 35% DM at the time of harvest. This was due to an equipment breakdown slightly delaying corn harvest. There was no severe lodging of corn stalks. Yields ranged from 19.4 to 33.5 tons per acre, indicating the importance of proper varietal selection to maximize short season corn yields. Several short season varieties yielded well and produced high quality feed.

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