NEW YORK and VERMONT CORN SILAGE HYBRID EVALUATION PROGRAM

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Hybrid evaluation at multiple environments helps in decision making and expands the reach of this type of data to more farmers. Cornell, UVM, and seed companies collaborate to provide this evaluation. Hybrids were either entered into the 85-98 day RM group (Early-Mid; n = 29) or were entered into the 99-110 day RM group (Mid-Late; n = 31). All hybrids were planted at two locations; the Musgrave Research Farm in Aurora, NY (Cayuga County) and Borderview Farm in Alburgh, VT (Grand Isle County). Harvest dates were staggered by maturity group at each location. Weather data, growing degree days (**GDD**; 86-50°F system), and precipitation, for both the current year and long-term averages, can be found in Table 1 for all locations.

The NY and VT corn silage evaluation program is made possible with support from dairy producers, participating seed companies, Cornell University, the University of Vermont, and the Cornell University Agricultural Experiment Station. Seed companies were invited to submit hybrids into either maturity group (two locations per maturity group) for a fee.

MATERIALS AND METHODS

In 2024, the corn silage hybrid evaluation program received 60 entries from 13 seed brands. All hybrids were planted using a four-row planter at 34,000 plants/acre. Each plot consisted of four rows spaced 30 inches apart with harvest of the inner two rows. Hybrids were planted in a randomized complete block design with 3 replications.

Planting occurred on May 21st in Aurora and May 7th in Alburgh (Table 2). The early-mid hybrids were harvested on September 4th in Aurora and September 10th in Alburgh . The mid-late hybrids were harvested on September 12th in Aurora and September 16th in Alburgh (Table 2). Information on soil type and fertility management can be found in Table 2 for each field location. From planting to harvest, the early-mid hybrids had 1,951 GDD in Aurora and 2,203 GDD in Alburgh (86-50°F system). From planting to harvest, the mid-late hybrids had 2,043 GDD in Aurora and 2,291 GDD in Alburgh (Figure 1 and Table 3).

The goal was to harvest all hybrids at 65% (±3%) moisture. The maturity groups were monitored, and harvest decisions were made by measuring whole plant dry matter (**DM**) on buffer plots prior to harvest. Plots were harvested with a two-row Kemper rotary head and Wintersteiger Weighmaster system with sample mixing capabilities at a target cutting height of 8 inches (± 1 inch) at the Aurora location. In Vermont, plots were harvested with a John Deere 2-row chopper into a wagon equipped with an Avery Weigh-Tronix weighing system at a target cutting height of 8 inches (± 1 inch).

An approximate 500 g sample was taken per plot replicate, resulting in 3 samples per location, 6 samples total. Samples were sealed in gallon-sized freezer bags and placed in a chest freezer with the addition of ice packs for transportation back to Cornell University or the University of Vermont, where they were transferred to a -20°C freezer and/or shipped for immediate analysis. Samples were submitted to Cumberland Valley Analytical Services (Waynesboro, PA) where near-infrared spectroscopy (**NIR**) procedures were used to determine crude protein (**CP**), starch, lignin, linoleic acid (C18:2), ash corrected neutral detergent fiber (**aNDFom**), and neutral detergent fiber digestibility (**NDFD**; 12, 30, 120, 240 h). Three companies paid an additional fee for wet chemistry analysis on NDFD at 30 h of in vitro fermentation.

Corn silage hybrid performance was evaluated by the predicted milk production output (metabolizable energy [ME] and metabolizable protein [MP] allowable milk) of Cornell Net Carbohydrate and Protein System (CNCPS) v.7.0 (Cornell University, Ithaca, NY). Rumen aNDFom and uNDFom pool sizes have been shown to correlate with dry matter intake (DMI), with more degradable aNDFom, lower uNDFom diets encouraging intake, holding all other dietary nutrients equal. Increased intake of a common diet is meant to improve milk production whereas lower intake will limit production. Corn silage NIR results were applied to a typical New York high corn silage-based diet (forage at ~43% of diet DM; corn silage ~80% of forage DM) in the CNCPS. For practical purposes, since the samples had not undergone fermentation, feed library values were assigned to soluble protein, ammonia, volatile fatty acids, and 7-hr starch digestibility values. A base diet which fed a corn silage that represented the average feed chemistry of all hybrids was formulated by Dr. Andrew LaPierre and Elle Andreen. The diet was formulated for 94 lb milk yield, assuming 4.15%, 3.25%, and 4.85% milk fat, true protein, and lactose concentrations, respectively. Cattle were described as 48 months old, 130 days in milk, weighing approximately 1,550 lb, and expending the average maintenance energy assuming thermoneutral conditions in a typical Northeast freestall barn. Initially, each individual hybrid replicate replaced the average corn silage in the base diet (assuming 57.7 lb DMI) at the same DM inclusion rate. Subsequently, DMI of the entire diet was adjusted based on the first limiting rumen fill factor (either the rumen aNDFom pool size or the rumen uNDFom pool size), holding dietary inclusion levels of all ingredients equal. This novel approach to hybrid evaluation allows us to account for differences in DMI potential of the total diet based upon hybrid selection and is a more biologically robust representation compared to evaluating hybrids on a constant DMI basis. The predictions made by the CNCPS v.7.0 were used to evaluate differences in intake potential and subsequent predicted allowable milk yield based upon the nutrient and digestibility characteristics of each hybrid.

The GLM procedure was used for analyzing data using SAS software (v. 9.4, SAS Institute, Cary, NC). If there were significant differences between hybrids for a given nutrient ($P < 0.10$), the least significant difference (**LSD**) generated at the $P = 0.10$ level was reported for separating hybrid means for each location. For interpretation purposes, if the difference between two hybrids is greater than the reported LSD, there is a 90% probability that this is not due to random variation and there is a true varietal difference between the hybrids.

RESULTS AND DISCUSSION

Both locations experienced above average GDD accumulation (Table 1 and Figure 1) while precipitation patterns and totals varied significantly. Precipitation at the Aurora location was very close to long term averages while the Alburgh location received excessive rainfall for the second year in a row (Table 1 and Figure 1). The differences offer the opportunity to contrast crop performance across diverse environments.

Several factors, including precipitation, nutrient availability, pest pressure, and other plant stressors impact how efficiently the crop was able to utilize the heat available throughout the season. Evaluation of GDD accumulation, calendar days, and location average whole plant dry matter (Table 3) offers insight and contrast to how the crop responded to above average GDD accumulation at each location.

A reminder that while tools such as tracking GDD accumulation can help inform harvest decisions, close-up evaluation of fields and plant development (both kernel development and whole plant DM) are needed to optimize harvest timing.

Nitrogen Balances

A nitrogen (N) balance can be calculated by subtracting the total N in the harvested crop from the total N supplied to the crop. The total N supplied includes current year fertilizer and manure N additions, as well as N credits from previous manure applications, previous crops (sod or soybeans), and soil N supply (based on soil type). Contributions by previous crops and soil are both derived from book values. The total N taken up by the crop is calculated using the crop yield multiplied by the N concentration within the crop, which is derived from the CP content (CP / 6.25). Manure N from past applications assumed 12% and 5% of the organic N from applications from one and two prior growing seasons, respectively. The total N balance includes all N in manure applied to the current crop year. The available N balance assumes 35% from organic N and 0-65% (based on soil incorporation) from inorganic N in the manure to be available to the crop in the current year. Thus, total N balances will be higher than available N balances when manure is applied in the current crop year.

Based on this calculation a positive N balance indicates more N was applied than was taken up by the crop, suggesting that excess N was left in the soil at the end of the growing season or losses throughout the season were larger. This can represent the addition of N inputs beyond what the crop was able to utilize, which is most often the case when other conditions are not limiting plant growth. In the instance of first year corn after sod, a positive balance may remain even when additional N inputs are minimal; however, this may also occur when the plant is not able to utilize available N and crop yield is limited by other factors, often due to extreme drought or prolonged periods of saturated soils.

A negative balance can also represent different scenarios. First, it can represent an inadequate supply of N and this would be reflected by depressed yields, visual signs of N deficiency (firing of leaves up to the ear leaf), or low test values from the end-of-season Corn Stalk Nitrate Test (CSNT). When yields are not compromised and no other indications of N deficiency are noted, a negative balance suggests that 1) the soil N supply and/or manure and previous crop N credits may exceed the book value, 2) the crop is more efficient at utilizing available N than predicted N rate calculations, or 3) both.

The results presented in Table 2 reflect the available N balance for each location in 2024. Available N Balance = Available N supply (soil N + sod/soybean N + fertilizer N + available manure N) - Total N uptake (yield x N concentration).

Least Significant Difference

Least significant difference (LSD) values are presented in Tables 5 and 6, as well as Figures 5 and 6. The LSD indicates the level of difference between two values that is statistically significant. When the reported values for two hybrids are within the LSD, this indicates that these differences cannot be attributed to hybrid alone and other factors may have contributed to the differences, such as environmental factors. When evaluating differences in hybrids, it is important to confirm if numerical differences are significant or not based on the LSD value.

Growing Conditions and Location Notes

Aurora

This location ended the season with near average rainfall and above average GDD accumulation (Table 1). Plot mean yield was slightly below the average for previous years at this location for the mid-late RM group (Table 4).

The crop was stressed when an early July storm resulted in wind damage to random plots causing some stalk snap and goosenecking. There was no clear pattern based on hybrid. Damaged rows were accounted for, and adjustments made at harvest.

Available N balances were positive (Table 2) following a multi-year trend at this location where N is not found to be a limiting factor to yield despite a trend of lower yields relative to other trial locations each year. These results highlight the influence of multiple growing environment factors on overall performance, as observed in a soil health analysis from the 2023 trials found in Soil health and corn silage performance: Comparing grain and dairy field systems.

Alburgh

The trend of wet growing seasons continued at this location (Table 1 and Figure 1). Monthly GDD accumulation was average to above average throughout the season (Table 1). In relation to previous years' data at the site, yields were above average (Table 4).

In contrast to long term trends, the negative impact of high rainfall on fiber digestibility was less pronounced in 2024 (Tables 5b & 6a, Figures 5b & 6a). More work is needed to understand the growing environment factors leading to this outcome. Given the significant role of fiber digestibility in the ability for a cow to utilize forage nutrients, contrasting 2024 results with the previous growing season suggests producers could see a slight improvement in forage utilization when moving to the 2024 crop. However, it is important to recognize there are many interacting factors associated with this and producers will need to monitor performance closely when transitioning forages.

Available N balances were slightly negative (Table 2) while yields were average to above for this location (Table 4). This suggests that N was not limiting, despite excess rainfall and the risk of N leaching. It should be noted that a significant portion of the N fertilizer was applied as sidedress, which reduces the potential for early season losses to the environment and likely led to better N utilization by the crop.

Forage Quality and Yield

Individual hybrid results are presented in Tables 5 and 6 for each trial location. The tables provide yield and forage quality (CP, aNDFom, starch, lignin, 30 hr NDFD, 240 hr uNDFD, predicted milk yield, etc.) results. Results are sorted by DM and hybrids should only be compared with hybrids that have a DM within ±3 DM points within a relative maturity group. Due to few hybrids being analyzed for wet chemistry parameters, an LSD was not calculated.

Figures 5 and 6 show the crop yield plotted against the predicted milk yield (**PMY**). The axes are presented as a percent (%) of plot mean with 100% representing the plot mean. From these plots, you

can derive the percentage above or below the mean that a given hybrid performed. Each scatterplot is split into four quadrants using the plot mean for the respective parameters to divide the quadrants. This graphical representation provides a quick reference of which quadrant each hybrid falls into at each location; 1) above average in crop yield and below average in PMY, 2) above average in both crop yield and PMY, 3) below average in both crop yield and PMY, 4) below average in crop yield and above average in PMY (Figure 5 and 6). It is important to view the data in this context, as the performance of a hybrid relative to its peers at the same location is more important than the absolute value for crop yield or PMY. The plot means for crop yield (tons/acre at 35% DM) and PMY (lb/day) as well as the minimum and maximum values are reported to provide context to the percentages.

When evaluating trial data for corn silage hybrids, two approaches are often used. One method of evaluating hybrids is to study hybrid performance at a location that is most closely related to the growing conditions you experienced on your own farm for this growing season. This is a less desirable method of evaluation since conditions at a given location can vary greatly from season to season.

A second, preferable, method for picking desirable hybrids is to look for hybrids that perform consistently above average across trial locations, as this may reflect varying growing conditions more so than the first method. The actual yield or quality measurement (absolute value) is less important than how a hybrid performed relative to its peers at the same locations (% of plot mean). Consistent above average performance across locations in both crop yield and PMY (Figures 5 and 6) is a strong indicator of hybrid performance.

It may not always be desirable to select a hybrid that falls into the second quadrant in Figures 5 and 6 (above average in crop yield and PMY). Instead, selecting a range of hybrids may be beneficial to accommodate feeding a range of cow groups. As an example, with respect to other forages available for the diet, it is often not favorable to feed a highly digestible corn silage to heifers or dry cows as this may cause over conditioning due to increased DMI and excessive energy consumption. However, the difference in PMY results in different growing environments demonstrates the importance of growing digestible forages as an approach to reduce non-forage feed costs and non-forage feed inclusion rates. Environmental conditions strongly influence the forage quality; however, selecting hybrids that have performed well under varying conditions may improve your chances of having a more digestible forage compared to other hybrids grown under the same conditions. We suggest working with your agronomist and nutritionist to identify hybrids that would succeed for your farm and meet your nutritional needs.

Overall Trends in Performance

As previously stated, evaluating the impacts of growing season on hybrid performance with the information presented here is crucial when assessing characteristics that may work best for your farm; however, summarizing across locations can provide insight into the consistency of performance over a range of conditions. This information should not be used on its own but adds value when used in conjunction with location specific data.

Data by growing season can be found in Table 4 and Figure 2. This data provides a valuable comparison across growing seasons to understand both the impact of growing environment as well as a benchmark of performance potential based on year-to-year differences in growing conditions.

Table 7 provides comparative performance data, which considers a hybrid's performance within a location, then averages across locations and years (when a hybrid has been entered into the program for more than one season).

CONCLUSIONS

Growers can use this performance data to better understand how a hybrid performs under a diverse set of environments. We encourage the use of this data in conjunction with replicated data from other independent and company sources to best understand a hybrid's overall performance in the context of different growing environments. Using this approach, in contrast to focusing on an individual data source, will lead to much better hybrid selection decisions.

The results of this study will be published by PRO-DAIRY (https://prodairy.cals.cornell.edu/), Cornell Field Crops (www.fieldcrops.org), and the University of Vermont Extension (www.uvm.edu/extension/nwcrops) and disseminated widely across the region using multiple electronic and print publications.

ACKNOWLEDGEMENTS

We thank the seed companies that participated in 2024 for their collaboration. We urge all seed companies to participate in our corn silage testing program in 2025 so we can provide the best information under New York and Vermont growing conditions to our producers.

We thank Sherrie Norman, Keith Payne, Brian Lanphere, Shawn Bossard, Nick Lepak, and Quin Walpole for support at the Cornell Musgrave Research Farm location, Aurora; and Roger Rainville at Borderview Farm, VT for their efforts during field operations.

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Table 1: Current season and historic growing conditions at trial locations in New York and Vermont.

	Rainfall, inches				Growing Degree Days (GDD), 86/50			
	Aurora, NY		Alburgh, VT		Aurora, NY		Alburgh, VT	
	2024	Avg.*	**2024**	Avg.*	**2024**	Avg.*	**2024**	Avg.*
May	**2.58**	3.12	**2.67**	3.66	**387**	328	**378**	316
June	**4.21**	4.01	**6.85**	4.93	**515**	493	**513**	472
July	**2.89**	3.83	**6.65**	4.77	**655**	647	**668**	627
August	**6.03**	4.05	**9.61**	4.84	**552**	598	**567**	572
September	**2.07**	3.42	**3.35**	3.92	**432**	410	**406**	383
May-August	**15.71**	15.01	**25.78**	18.20	**2,108**	2,066	**2,125**	1,986
May-September	**17.78**	18.43	**29.13**	22.11	**2,540**	2,477	**2,531**	2,370

*Avg. - Represents averages of years: 2005-2024

Table 2: NY & VT Corn Silage Hybrid Evaluation Program, 2024 Field Data.

	85 - 98 Day Relative Maturity		99 - 110 Day Relative Maturity	
	Aurora, NY	Alburgh, VT	Aurora, NY	Alburgh, VT
Planting Date	21-May	7-May	21-May	7-May
Harvest Date	4-Sept	10-Sept	12-Sept	16-Sept
Previous Crop	Sorghum	Fiber Hemp	Sorghum	Fiber Hemp
Starter N / Pre-plant	40	38	40	38
Manure N Credits	0	0	0	0
Sidedress N	106	105	106	105
Total N Inputs	146	143	146	143
Available N Balance[1]	67	-2	80	-13
Soil Type	Lima	Benson	Lima	Benson

[1] Available N Balance = N Uptake by Crop - Available N Supply
A positive balance indicates there was excess N not utilized by the crop.
When N does not limit yield, a negative balance indicates more efficient N use or soil N supply compared to book values.

Table 3: Calendar day, growing degree day (GDD), and precipitation accumulation from planting date to harvest date, and average whole plant dry matter (DM) at harvest by RM group and location.

Year		Short Season		Long Season	
		Aurora, NY	Alburgh, VT	Aurora, NY	Alburgh, VT
2024	**Calendar Days**	**106**	**126**	**114**	**132**
	GDD (86/50)	**1,951**	**2,203**	**2,043**	**2,291**
	Precipitation (in.)	**13.9**	**26.2**	**14.7**	**26.2**
	Whole Plant DM	**32.6**	**34.4**	**34.7**	**34.7**
2023	Calendar Days	-	128	128	135
	GDD (86/50)	-	2,130	2,087	2,203
	Precipitation (in.)	-	26.8	17.8	27.2
	Whole Plant DM	-	31.4	34.8	30.8
2022	Calendar Days	-	122	118	134
	GDD (86/50)	-	2,117	2,132	2,264
	Precipitation (in.)	-	22.5	14.6	25
	Whole Plant DM	-	33.6	31.7	33.0
2021	Calendar Days	-	126	120	128
	GDD (86/50)	-	2,193	2,220	2,242
	Precipitation (in.)	-	12.5	21.3	12.5
	Whole Plant DM	-	36.3	35.2	39.8
2020	Calendar Days	-	119	110	130
	GDD (86/50)	-	2,099	2,144	2,198
	Precipitation (in.)	-	15.5	11.4	15.7
	Whole Plant DM	-	32.4	36	36.4
2019	Calendar Days	-	134	144	141
	GDD (86/50)	-	2,031	2,215	2,090
	Precipitation (in.)	-	14.2	16.5	18
	Whole Plant DM	-	33.7	34.7	35.4
2018	Calendar Days	-	117	116	125
	GDD (86/50)	-	2,134	2,204	2,271
	Precipitation (in.)	-	10.8	15.3	10.8
	Whole Plant DM	-	33.3	38.2	34.9
2017	Calendar Days	-	125	118	134
	GDD (86/50)	-	1,928	1,975	2,077
	Precipitation (in.)	-	20.3	16.8	20.3
	Whole Plant DM	-	31.8	31.9	32.7

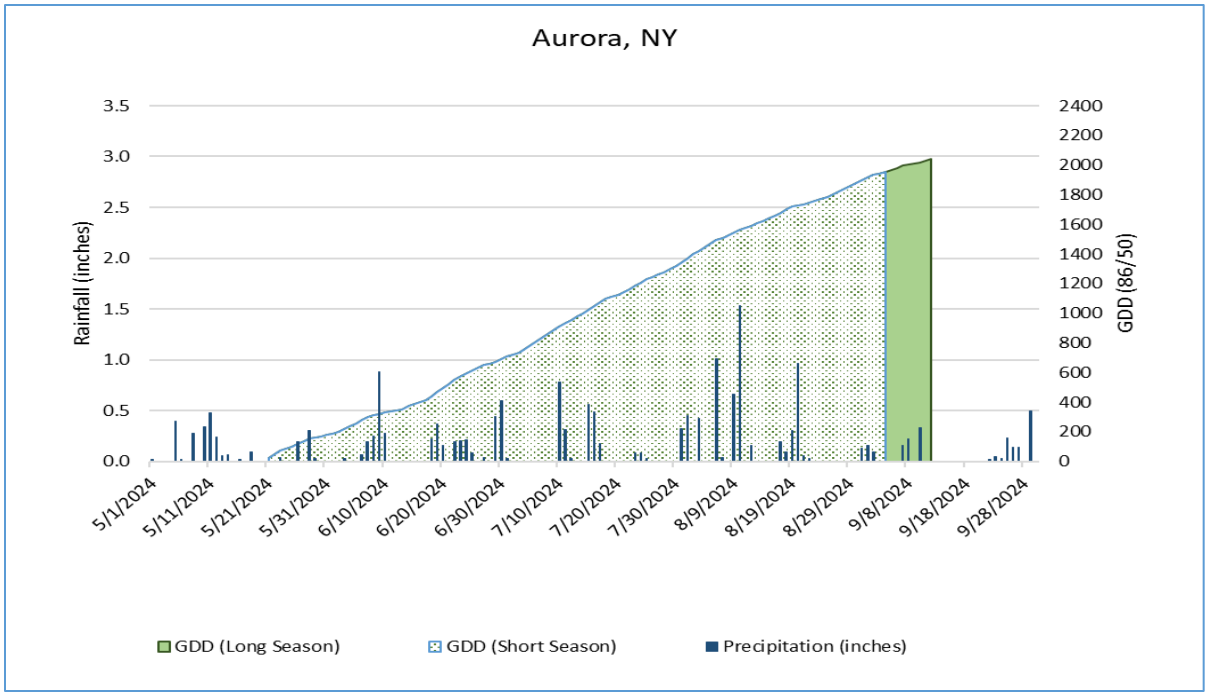

Figure 1a: Aurora, NY

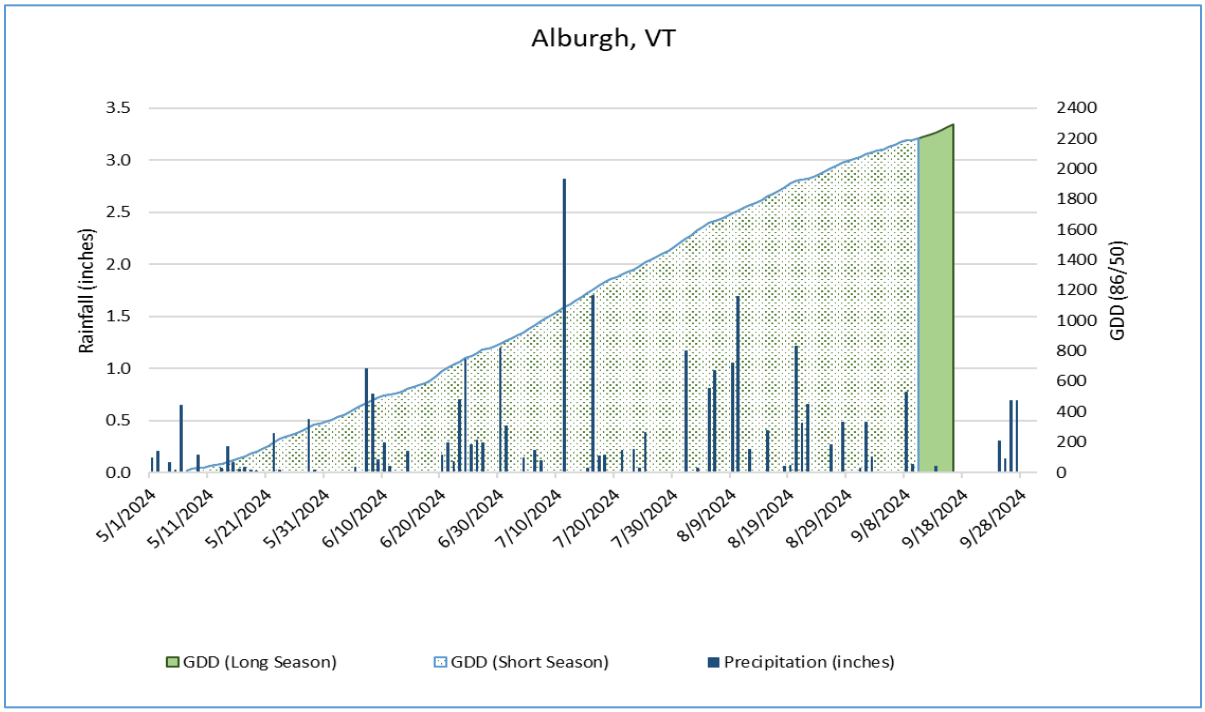

Figure 1b: Alburgh, VT

Figure 1. Accumulation of growing degree days (GDD) from planting through harvest and individual rainfall events from May 1st through harvest at Aurora, NY (1a) and Alburgh, VT (1b).

Table 4: Whole plot mean for key corn silage performance indicators

Relative Maturity Group	Growing Season	Location	Yield, 35% DM	Dry Matter	Starch Content	aNDFom	30 hr NDFD	120 hr NDFD	240 hr uNDFom
			tons/acre	%	% DM	% DM	% NDFom	%NDFom	% DM
85-98 day RM	**2024**	**Aurora, NY**	**21.6**	**33.0**	**35.4**	**37.5**	**56.7**	**65.5**	**11.8**
		Alburgh, VT	**24.4**	**34.4**	**36.1**	**37.1**	**54.4**	**65.3**	**11.6**
	2023	Alburgh, VT	25.2	31.6	38.2	37.3	47.7	56.8	15.2
80-95 day RM	2022	Alburgh, VT	27.8	33.6	36.2	36.2	55.8	66.3	11.2
	2021	Alburgh, VT	19.9	36.3	37.9	36.1	52.8	64.1	12.0
	2020	Alburgh, VT	19.8	32.4	37.8	35.9	56.0	65.6	11.4
	2019	Alburgh, VT	23.4	33.7	36.5	37.8	61.6	67.6	11.2
	2018	Alburgh, VT	18.3	33.3	31.0	39.0	56.2	67.4	11.8
	2017	Alburgh, VT	27.5	31.8	34.4	38.9	53.2	62.7	13.4
99-110 day RM	**2024**	**Aurora, NY**	**21.9**	**34.7**	**37.4**	**37.1**	**57.6**	**65.3**	**11.6**
		Alburgh, VT	**27.3**	**34.7**	**38.9**	**36.4**	**54.1**	**63.1**	**12.4**
	2023	Aurora, NY	25.0	34.8	38.4	36.1	57.7	65.2	11.4
		Alburgh, VT	24.4	30.8	38.1	38.4	49.5	59.8	14.4
96-110 day RM	2022	Aurora, NY	20.6	31.7	37.2	37.4	61.5	70.0	10.0
		Alburgh, VT	27.3	33.0	38.7	36.5	52.3	60.7	13.2
	2021	Aurora, NY	29.3	35.2	37.8	38.5	54.1	62.7	13.3
		Alburgh, VT	23.9	39.8	37.2	38.6	56.9	66.9	11.7
	2020	Aurora, NY	17.1	36.0	38.2	36.0	61.1	68.3	10.4
		Alburgh, VT	25.1	36.4	37.9	36.5	55.4	65.6	11.6
	2019	Aurora, NY	27.1	34.7	38.3	36.9	55.5	62.2	12.9
		Alburgh, VT	24.3	35.4	39.3	35.5	61.6	71.1	9.2
	2018	Aurora, NY	21.7	38.2	38.8	35.3	59.9	67.7	10.4
		Alburgh, VT	23.3	34.9	34.2	38.3	55.2	66.0	12.0
	2017	Aurora, NY	26.0	31.9	31.2	42.6	54.5	63.8	14.4
		Alburgh, VT	28.5	32.7	35.3	39.8	52.7	61.4	14.3

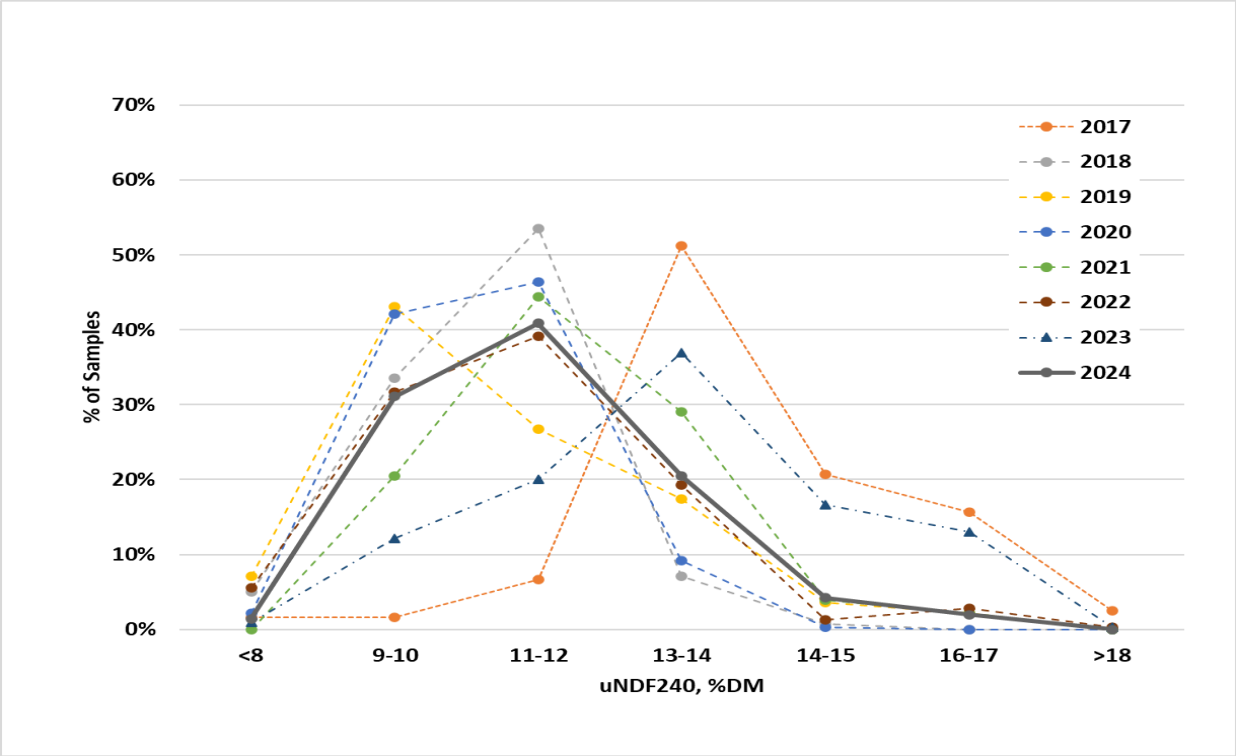

Figure 2a

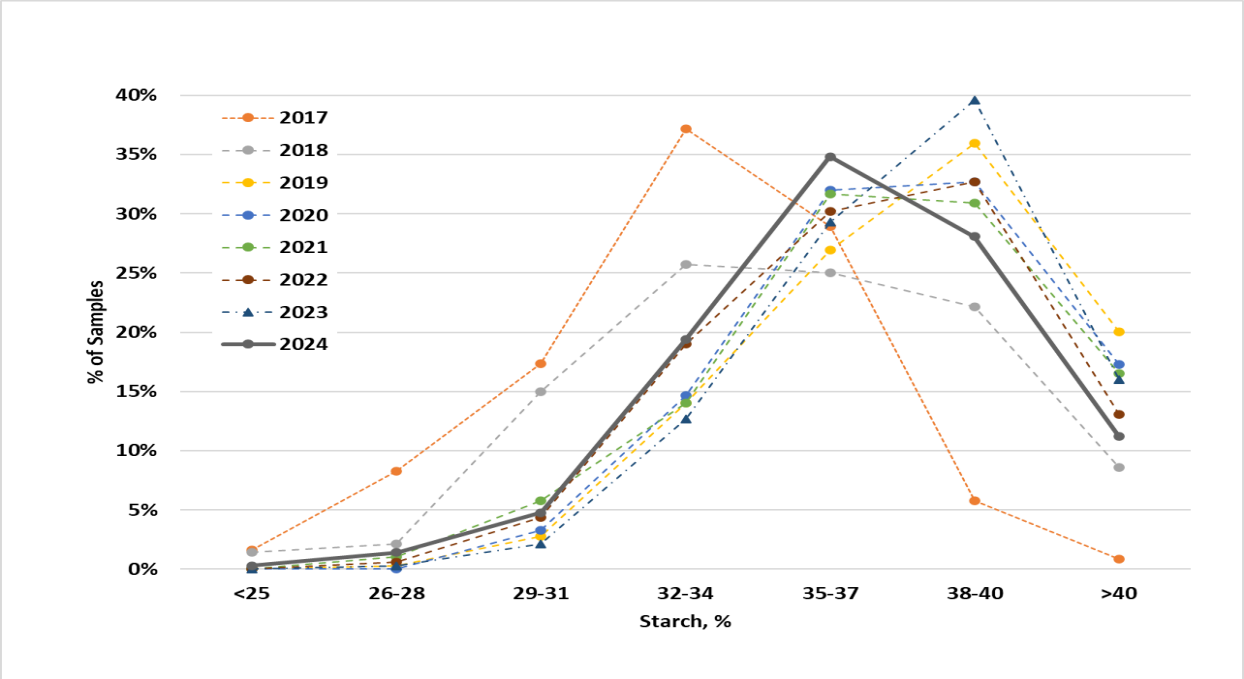

Figure 2b

Figure 2: The proportion of samples within different ranges of uNDF240 (Figure 2a) and starch (Figure 2b) combined across locations for the current year and previous growing seasons.

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Table 5:

Hybrid field and forage quality data for 85–98-day relative maturity (RM) hybrids planted at Alburgh, VT (5a) and Aurora, NY (5b). Hybrids are sorted by dry matter content at harvest.

Table 6.

Hybrid field and forage quality data for 99–110-day relative maturity (RM) hybrids planted at Alburgh, VT (6a) and Aurora, NY (6c). Hybrids are sorted by dry matter content at harvest.

Tables 5 & 6: Least Significant Difference

Least significant difference (LSD) is used to indicate if the statistical difference between two values is meaningful at a certain confidence level. An LSD of 0.10 indicates a confidence level of 90%. The LSD value is presented at the base of the column for each hybrid parameter reported.

Footnotes for Tables 5 and 6.
* All nutrient parameters analyzed by NIR methods, except where indicated. Select companies opted to receive wet chemistry information for an additional fee.
** Tables are sorted by descending dry matter for comparison purposes
*** NDF = neutral detergent fiber, aNDFom = ash corrected neutral detergent fiber, NDFD = neutral detergent fiber digestibility, uNDF = undigested neutral detergent fiber
[1] RFC-Fill Ratio = Rumen Fermentable Carbohydrate - Fill Ratio, defined as ((NDFd30 + starch)/uNDF30). Jones, L.R., and J. Siciliano-Jones. 2015. Index useful for ranking silage samples. Feedstuffs 17, 19."
[2] NS = Not Significant
[3] Data omitted due to pest damage

Table 5a: Hybrid performance for 85 – 98-day RM groups at Alburgh, VT *(page 1 of 2)*.

Company/Brand	Hybrid	Relative Maturity	Harvest Population	Dry Matter	Yield, 35% DM	Starch	Crude Protein	Lignin	C 18:2	12 hr NDFD	aNDFom	Wet Chem aNDFom	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDFom	RFC - Fill Ratio[1]	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
			plants/ac	%	tons/ac	% DM	% DM	% DM	% DM	% NDF	% DM	% DM	% NDFom	% NDFom	% NDFom	% NDFom	% DM		lbs/day	lbs/day
Revere Seed	Revere 091-X42	91	29,911	32.9	24.2	33.1	8.5	3.0	1.18	36.2	37.7	.	.	54.8	65.6	68.8	11.8	3.0	88.5	56.7
Redtail (King's Agri-seeds)	RT 41T19-D2	91	31,363	32.9	21.5	36.6	8.0	3.0	1.29	35.6	35.2	.	.	54.1	63.6	67.3	11.5	3.3	91.3	57.1
Dekalb	DKC93-05RIB	93	31,799	33.1	23.6	37.9	7.4	2.9	1.21	37.1	36.2	.	.	52.9	63.1	65.9	12.3	3.3	88.1	55.7
Redtail (King's Agri-seeds)	RT 45T09-D2	95	32,525	34.4	22.6	37.7	7.4	3.0	1.28	36.2	37.4	.	.	53.7	64.1	68.0	12.0	3.3	87.0	55.2
Growmark, Inc.	FS 4547T RIB	95	32,089	34.7	24.1	36.2	7.2	2.9	1.16	36.2	36.6	.	.	53.9	63.8	67.2	11.9	3.2	88.9	56.1
Channel	193-91STXRIB	93	30,928	34.7	22.2	34.5	8.0	3.1	1.21	38.5	38.4	.	.	54.8	66.1	69.1	12.1	3.2	87.6	56.0
Channel	193-42VT4PRIB	93	30,928	35.1	27.1	38.6	7.0	2.7	1.18	38.6	36.3	.	.	57.2	68.4	72.6	10.0	3.8	98.1	59.6
Dekalb	DKC92-13RIB	92	31,944	35.1	25.4	35.0	7.8	3.0	1.23	37.3	37.3	.	.	56.1	67.0	71.2	10.7	3.3	93.9	58.5
Dekalb	DKC45-07RIB	95	31,799	35.2	23.4	32.7	8.3	3.1	1.13	35.7	38.1	.	.	54.0	65.1	69.0	12.0	3.0	86.3	55.8
DynaGro Seed	D29VC85RIB	89	32,960	35.3	24.1	31.8	8.1	3.2	1.01	35.2	38.7	.	.	55.4	66.1	69.6	11.8	2.9	87.9	56.6
Seedway	SW 9504VT	95	30,202	35.8	24.4	35.5	7.6	3.2	1.16	35.3	38.0	.	.	51.7	63.4	66.4	12.8	3.0	83.6	54.2
Channel	195-40VT4PRIB	95	31,799	35.9	21.2	36.6	7.5	2.9	1.28	37.8	38.1	.	.	54.1	63.0	65.7	13.0	3.2	84.2	54.5
Syngenta Seeds	E094Z4-D	94	32,234	36.6	23.6	35.6	7.8	3.1	1.15	33.7	37.0	41.0	53.5	54.3	65.7	69.1	11.4	3.1	91.4	57.5
Syngenta Seeds	NK9400-V	94	31,218	37.2	27.1	37.0	7.5	3.1	1.29	36.3	38.2	.	.	52.9	64.2	67.0	12.8	3.2	85.4	54.7
	RM Mean		**31,550**	**34.9**	**23.9**	**35.6**	**7.7**	**3.0**	**1.20**	**36.4**	**37.4**	**41.0**	**53.5**	**54.3**	**64.9**	**68.3**	**11.9**	**3.2**	**88.7**	**56.3**
	Overall LSD (0.10)		**1,142**	**NS[2]**	**3.4**	**NS**	**0.6**	**NS**	**NS**	**2.1**	**NS**	**.**	**.**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
	Overall Mean		**31,498**	**34.4**	**24.4**	**36.1**	**7.7**	**3.0**	**1.19**	**36.6**	**37.1**	**39.9**	**55.1**	**54.4**	**65.3**	**68.7**	**11.6**	**3.3**	**89.8**	**56.7**

Table 5a: Hybrid performance for 85 – 98-day RM groups at Alburgh, VT *(page 2 of 2)*.

Company/Brand	Hybrid	Relative Maturity	Harvest Population	Dry Matter	Yield, 35% DM	Starch	Crude Protein	Lignin	C 18:2	12 hr NDFD	aNDFom	Wet Chem aNDFom	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDFom	RFC - Fill Ratio[1]	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
			plants/ac	%	tons/ac	% DM	% DM	% DM	% DM	% NDF	% DM	% DM	% NDFom	% NDFom	% NDFom	% NDFom	% DM		lbs/day	lbs/day
Stine Seed	9444-22	99	30,928	32.0	22.5	38.2	7.6	2.9	1.14	35.8	35.5	38.9	56.6	52.4	63.1	66.4	11.9	3.3	87.6	55.7
CNI	Integra 4864 SS	98	30,928	33.0	25.7	34.5	7.5	3.1	1.16	38.0	39.5	.	.	54.2	66.7	70.1	11.8	3.0	88.0	56.2
Revere Seed	Revere 9827SSX	98	32,089	33.0	23.6	35.4	8.4	3.0	1.22	36.6	37.1	.	.	54.1	63.1	66.0	12.6	3.2	85.6	55.3
Channel	198-99SSPRIB	98	31,508	33.2	27.1	37.7	7.2	2.7	1.19	37.2	35.7	.	.	56.0	67.6	71.3	10.3	3.6	97.3	59.3
Seedway	SW 9600SS	96	32,380	33.6	23.6	34.5	7.9	3.0	1.19	36.7	37.4	.	.	53.8	64.6	68.0	11.9	3.1	87.4	55.7
CNI	Integra 4845 PCE	98	32,089	33.7	22.7	36.0	7.9	3.0	1.07	36.5	37.1	.	.	55.1	66.9	70.1	11.1	3.3	92.3	58.0
Growmark, Inc.	FS 4845P RIB	98	31,944	34.2	26.6	36.6	8.0	2.7	1.19	37.7	35.8	.	.	57.9	68.6	72.6	9.8	3.7	98.9	60.4
Seedway	SW 9655PE	96	32,089	34.3	28.1	37.0	7.7	3.0	1.04	35.9	37.1	.	.	53.4	64.6	68.3	11.8	3.2	88.8	56.3
Channel	197-99SSPRIB	97	31,799	34.4	28.5	36.0	7.5	2.8	1.16	37.1	36.9	.	.	56.5	67.0	71.0	10.7	3.4	95.3	58.9
Seedway	SW 9726TR	97	31,363	34.4	25.4	38.3	7.5	2.9	1.32	35.4	36.5	.	.	53.6	62.3	65.8	12.5	3.3	85.7	54.6
Pioneer	P9823Q	98	30,637	34.4	23.5	33.3	7.6	3.2	1.09	36.8	39.5	.	.	52.9	66.9	70.1	11.9	2.9	87.5	56.2
Dekalb	DKC98-55RIB	98	32,089	34.4	23.9	37.7	7.5	2.7	1.35	38.2	36.1	.	.	55.8	65.9	69.9	10.8	3.6	93.4	57.7
Revere Seed	Revere 096-DV48	96	30,637	34.6	25.5	37.5	7.4	3.0	1.22	36.9	37.0	.	.	53.6	63.5	66.8	12.3	3.3	87.8	55.7
Seed Consultants, Inc.	SC964PCE	96	31,073	34.7	22.0	39.4	7.5	2.8	1.24	37.7	35.3	.	.	55.1	68.3	71.5	10.1	3.6	97.5	59.6
Syngenta Seeds	NK9805-DV	98	30,202	36.1	24.9	36.6	7.5	3.0	1.24	35.8	36.4	.	.	53.2	64.8	68.0	11.7	3.3	89.5	56.4
		RM Mean	**31,450**	**34.0**	**24.9**	**36.6**	**7.7**	**2.9**	**1.19**	**36.8**	**36.9**	**38.9**	**56.6**	**54.5**	**65.6**	**69.1**	**11.4**	**3.3**	**90.8**	**57.1**
	Overall LSD (0.10)		**1,142**	**NS[2]**	**3.4**	**NS**	**0.6**	**NS**	**NS**	**2.1**	**NS**	**.**	**.**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
	Overall Mean		**31,498**	**34.4**	**24.4**	**36.1**	**7.7**	**3.0**	**1.19**	**36.6**	**37.1**	**39.9**	**55.1**	**54.4**	**65.3**	**68.7**	**11.6**	**3.3**	**89.8**	**56.7**

Table 5b: Hybrid performance for 85 – 98-day RM groups at Aurora, NY *(page 1 of 2)*.

Company/Brand	Hybrid	Relative Maturity	Harvest Population	Dry Matter	Yield, 35% DM	Starch	Crude Protein	Lignin	C 18:2	12 hr NDFD	aNDFom	Wet Chem aNDFom	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDFom	RFC - Fill Ratio[1]	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
			plants/ac	%	tons/ac	% DM	% DM	% DM	% DM	% NDF	% DM	% DM	% NDFom	% NDFom	% NDFom	% NDFom	% DM		lbs/day	lbs/day
Redtail (King's Agri-seeds)	RT 45T09-D2	95	33,906	31.5	20.3	33.8	6.6	2.7	1.13	34.8	37.6	.	.	57.2	66.5	69.8	11.4	3.3	95.8	58.9
Dekalb	DKC92-13RIB	92	32,807	31.9	21.1	34.5	6.2	2.9	1.13	34.5	38.4	.	.	56.2	63.6	66.4	12.9	3.2	86.4	54.8
Redtail (King's Agri-seeds)	RT 41T19-D2	91	32,807	32.6	23.4	37.0	6.8	2.8	1.25	33.9	35.3	.	.	55.8	63.6	66.7	11.7	3.5	91.4	56.7
Syngenta Seeds	E094Z4-D	94	32,650	32.6	19.0	38.4	5.8	2.8	1.22	38.8	37.6	40.1	56.2	57.1	66.8	69.8	11.3	3.6	93.6	58.0
Channel	195-40VT4PRIB	95	35,319	32.8	21.6	33.1	6.2	2.9	1.06	37.2	40.6	.	.	56.4	66.6	69.9	12.3	3.1	89.6	56.6
Dekalb	DKC93-05RIB	93	34,377	32.8	24.5	34.9	6.4	2.7	1.11	36.3	37.8	.	.	58.5	66.9	70.0	11.4	3.5	94.9	58.5
Channel	193-42VT4PRIB	93	35,319	33.4	25.3	34.6	6.2	2.9	1.09	35.4	39.0	.	.	55.3	67.6	70.5	11.5	3.1	92.3	57.5
Revere Seed	Revere 091-X42	91	33,278	33.4	20.2	36.3	5.9	2.8	1.21	35.6	37.1	.	.	55.3	63.9	66.7	12.5	3.4	88.0	55.4
Dekalb	DKC45-07RIB	95	35,162	33.9	18.3	34.0	6.3	2.9	1.10	34.1	38.7	.	.	55.0	64.9	67.7	12.5	3.0	88.2	55.6
Channel	193-91STXRIB	93	33,906	34.0	20.1	38.1	6.7	2.5	1.25	37.7	35.3	.	.	57.2	67.2	70.1	10.5	3.8	97.4	59.2
Growmark, Inc.	FS 4547T RIB	95	34,220	34.5	23.0	37.6	6.2	2.6	1.15	37.2	35.5	.	.	58.1	65.5	69.6	10.8	3.8	96.1	58.8
Syngenta Seeds	NK9400-V	94	35,005	34.6	23.6	35.9	6.7	2.9	1.32	35.3	37.1	.	.	54.5	62.9	66.0	12.7	3.4	87.4	55.4
Seedway	SW 9504VT	95	32,336	35.1	22.4	36.3	6.6	2.7	1.15	36.4	36.8	.	.	56.0	65.2	68.2	11.7	3.4	92.1	57.0
DynaGro Seed	D29VC85RIB	89	32,807	36.0	19.6	39.4	6.4	2.5	1.29	39.4	35.6	.	.	58.6	69.5	72.5	9.9	4.0	101.8	61.0
		RM Mean	**33,850**	**33.5**	**21.6**	**36.0**	**6.4**	**2.8**	**1.18**	**36.2**	**37.3**	**40.1**	**56.2**	**56.5**	**65.8**	**68.8**	**11.6**	**3.4**	**92.5**	**57.4**
	Overall LSD (0.10)		**NS[2]**	**1.7**	**NS**	**3.6**	**NS**	**NS**	**0.15**	**2.8**	**NS**	**.**	**.**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
	Overall Mean		**33,839**	**33.0**	**21.6**	**35.4**	**6.3**	**2.8**	**1.14**	**36.1**	**37.5**	**41.1**	**55.4**	**56.7**	**65.5**	**68.6**	**11.8**	**3.4**	**91.9**	**57.2**

Table 5b: Hybrid performance for 85 – 98-day RM groups at Aurora, NY *(page 2 of 2)*.

Company/Brand	Hybrid	Relative Maturity	Harvest Population	Dry Matter	Yield, 35% DM	Starch	Crude Protein	Lignin	C 18:2	12 hr NDFD	aNDFom	Wet Chem aNDFom	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDFom	RFC - Fill Ratio[1]	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
			plants/ac	%	tons/ac	% DM	% DM	% DM	% DM	% NDF	% DM	% DM	% NDFom	% NDFom	% NDFom	% NDFom	% DM		lbs/day	lbs/day
Stine Seed	9444-22	99	34,534	30.5	19.9	33.8	6.2	3.1	1.08	37.5	40.5	42.1	54.6	53.7	62.4	65.8	13.8	2.9	80.1	52.7
Channel	198-99SSPRIB	98	33,435	31.2	22.1	34.6	6.5	2.7	1.08	35.6	37.2	.	.	58.3	64.4	67.8	12.0	3.5	92.2	57.2
Revere Seed	Revere 096-DV48	96	32,807	31.5	20.9	33.6	6.4	2.9	1.14	34.4	39.1	.	.	55.1	65.4	68.6	12.3	3.0	89.2	56.1
CNI	Integra 4845 PCE	98	34,220	31.5	23.8	34.1	6.5	2.9	1.03	33.9	36.9	.	.	57.0	63.9	67.1	12.1	3.3	91.4	56.8
Seedway	SW 9655PE	96	32,964	31.6	19.7	32.1	6.1	3.1	0.94	33.4	40.1	.	.	53.3	61.8	64.5	14.3	2.8	79.0	51.9
Pioneer	P9823Q	98	33,906	32.5	20.9	36.9	6.2	2.5	1.15	37.3	34.8	.	.	59.2	67.6	70.5	10.3	3.8	100.7	61.0
Seed Consultants, Inc.	SC964PCE	96	34,691	32.5	23.2	37.1	6.3	2.5	1.17	35.8	35.4	.	.	57.7	66.9	69.9	10.6	3.6	97.6	59.4
Channel	197-99SSPRIB	97	34,220	32.5	22.0	34.3	6.4	2.7	1.30	37.3	38.2	.	.	58.8	65.2	68.1	12.2	3.5	90.8	57.1
Dekalb	DKC98-55RIB	98	34,063	32.8	22.4	35.5	6.5	2.6	1.14	37.9	37.4	.	.	58.7	66.8	70.0	11.2	3.6	94.6	58.2
Seedway	SW 9600SS	96	33,278	32.9	22.3	36.8	6.8	2.8	1.08	35.3	35.3	.	.	57.7	66.1	69.2	10.9	3.6	98.2	59.8
Syngenta Seeds	NK9805-DV	98	33,592	33.1	22.9	38.0	6.3	2.6	1.20	35.4	35.1	.	.	56.1	64.8	67.7	11.3	3.6	94.3	58.1
Growmark, Inc.	FS 4845P RIB	98	34,220	33.3	22.2	34.5	6.3	2.7	1.08	39.1	37.9	.	.	58.7	67.7	70.6	11.1	3.6	96.2	59.0
CNI	Integra 4864 SS	98	34,613	33.6	20.3	32.6	5.8	2.8	1.02	37.4	40.0	.	.	55.4	64.6	67.5	13.0	3.0	83.1	53.8
Revere Seed	Revere 9827SSX	98	33,592	33.7	21.1	34.2	6.5	2.8	1.09	36.0	38.0	.	.	58.6	67.0	70.6	11.3	3.6	95.2	58.8
Seedway	SW 9726TR	97	33,278	33.9	20.4	34.6	6.1	3.0	1.09	32.8	37.7	.	.	55.2	63.9	66.7	12.6	3.1	86.3	54.8
		RM Mean	**33,828**	**32.5**	**21.6**	**34.8**	**6.3**	**2.8**	**1.11**	**35.9**	**37.6**	**42.1**	**54.6**	**56.9**	**65.2**	**68.3**	**11.9**	**3.4**	**91.3**	**57.0**
	Overall LSD (0.10)		**NS[2]**	**1.7**	**NS**	**3.6**	**NS**	**NS**	**0.15**	**2.8**	**NS**	**.**	**.**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
	Overall Mean		**33,839**	**33.0**	**21.6**	**35.4**	**6.3**	**2.8**	**1.14**	**36.1**	**37.5**	**41.1**	**55.4**	**56.7**	**65.5**	**68.6**	**11.8**	**3.4**	**91.9**	**57.2**

Table 6a: Hybrid performance for 99–110-day RM groups at Alburgh, VT *(page 1 of 2)*.

Company/Brand	Hybrid	Relative Maturity	Harvest Population	Dry Matter	Yield, 35% DM	Starch	Crude Protein	Lignin	C 18:2	12 hr NDFD	aNDFom	Wet Chem aNDFom	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDFom	RFC - Fill Ratio[1]	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
			plants/ac	%	tons/ac	% DM	% DM	% DM	% DM	% NDF	% DM	% DM	% NDFom	% NDFom	% NDFom	% NDFom	% DM		lbs/day	lbs/day
Channel	203-99SSPRIB	103	30,928	32.1	23.9	37.4	7.4	3.0	1.28	36.8	37.5	.	.	52.5	62.1	64.7	13.3	3.2	82.6	53.7
Dekalb	DKC53-94RIB	103	30,637	33.0	25.7	36.2	7.4	3.0	1.29	37.0	37.7	.	.	54.4	63.1	65.8	12.9	3.3	84.9	54.6
Growmark, Inc.	FS 5347T RIB	103	32,089	33.1	21.3	36.4	7.9	3.1	1.29	35.1	36.8	.	.	53.7	62.8	65.6	12.7	3.3	85.5	54.7
DynaGro Seed	D37PN35RA	97	31,073	33.5	24.7	37.6	7.2	3.2	1.35	35.2	37.2	.	.	51.2	60.9	63.6	13.5	3.1	80.3	52.4
Seedway	SW 0123PE	101	32,525	33.9	27.6	38.3	7.3	3.2	1.35	34.8	37.7	.	.	52.5	61.1	63.8	13.6	3.2	80.2	52.6
Dekalb	DKC101-33RIB	101	32,089	34.3	29.6	40.4	7.6	2.9	1.40	37.3	34.3	.	.	55.0	63.5	66.9	11.4	3.8	92.3	57.1
Seed Consultants, Inc.	SC1018AM	101	32,670	34.3	26.2	39.6	7.4	2.7	1.36	39.4	35.6	.	.	58.2	66.5	70.3	10.5	4.0	97.5	59.4
Seedway	SW 0030SS	100	31,654	34.5	24.2	38.6	7.4	2.9	1.37	37.6	35.9	.	.	55.5	64.6	67.7	11.7	3.7	90.8	56.8
Syngenta Seeds	NK0123-AA	101	30,928	35.9	24.5	38.9	8.6	3.0	1.31	36.6	34.5	.	.	54.5	63.8	67.3	11.3	3.7	92.9	57.9
Growmark, Inc.	FS 5045P RIB	100	30,637	36.4	27.7	41.9	7.2	3.1	1.48	34.6	35.1	.	.	51.9	60.6	63.1	13.0	3.5	84.1	53.5
Revere Seed	Revere 101-P47	101	30,782	37.8	28.3	42.2	7.5	2.7	1.46	37.6	33.5	.	.	55.3	64.3	67.0	11.1	4.0	96.2	59.0
Channel	201-07SSPRIB	101	31,073	38.2	31.3	39.8	6.9	2.9	1.40	32.9	35.6	.	.	56.4	66.2	69.0	11.0	3.6	95.0	58.6
Dekalb	DKC102-13RIB	102	31,508	38.4	28.7	43.5	6.8	2.6	1.46	38.5	33.7	.	.	56.6	65.5	68.3	10.7	4.2	99.4	59.9
Seedway	SW 9876SS	98	31,218	38.6	29.7	39.2	7.0	2.9	1.33	36.5	37.0	.	.	55.4	64.4	67.3	12.1	3.5	90.3	56.8
		RM Mean	**31,415**	**35.3**	**26.7**	**39.3**	**7.4**	**2.9**	**1.37**	**36.4**	**35.9**	**.**	**.**	**54.5**	**63.5**	**66.5**	**12.1**	**3.6**	**89.4**	**56.2**
		Overall LSD (0.10)	**NS[2]**	**2.6**	**4.8**	**NS**	**NS**	**0.4**	**NS**	**NS**	**NS**	**.**	**.**	**NS**	**NS**	**NS**	**2.3**	**NS**	**13.1**	**2.4**
		Overall Mean	**31,441**	**34.7**	**27.3**	**38.9**	**7.3**	**3.0**	**1.34**	**36.6**	**36.4**	**37.7**	**46.5**	**54.1**	**63.1**	**66.0**	**12.4**	**3.5**	**87.7**	**55.5**

Table 6a: Hybrid performance for 99–110-day RM groups at Alburgh, VT *(page 2 of 2)*.

Company/Brand	Hybrid	Relative Maturity	Harvest Population	Dry Matter	Yield, 35% DM	Starch	Crude Protein	Lignin	C 18:2	12 hr NDFD	aNDFom	Wet Chem aNDFom	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDFom	RFC - Fill Ratio[1]	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
			plants/ac	%	tons/ac	% DM	% DM	% DM	% DM	% NDF	% DM	% DM	% NDFom	% NDFom	% NDFom	% NDFom	% DM		lbs/day	lbs/day
Revere Seed	Revere 0918VT2P	109	31,944	31.7	27.0	35.7	6.7	3.2	1.23	36.9	38.6	.	.	52.1	62.5	65.2	13.5	3.1	82.0	53.4
DynaGro Seed	D49PN05RA	109	31,073	31.9	29.3	40.2	7.4	2.8	1.26	38.4	34.7	.	.	53.8	63.9	67.4	11.3	3.6	93.2	57.6
Channel	204-54SSPRIB	104	31,218	32.0	26.6	38.6	7.1	3.1	1.35	35.3	37.8	.	.	54.9	64.8	67.5	12.3	3.5	90.1	56.7
Seed Consultants, Inc.	SC1094PCE	109	32,380	32.5	27.3	37.6	7.6	2.9	1.28	38.7	37.1	.	.	56.5	66.3	70.2	11.1	3.6	93.7	58.0
Dekalb	DKC61-80RIB	111	31,073	32.6	24.8	34.4	6.9	3.7	1.22	33.7	40.7	.	.	49.4	58.2	61.3	15.7	2.6	69.1	48.1
DynaGro Seed	D44PN25RA	104	31,218	32.7	27.6	37.2	7.4	3.1	1.23	35.4	36.1	.	.	54.5	63.9	67.2	11.9	3.3	89.4	56.3
Dekalb	DKC105-25RIB	105	31,654	33.2	27.6	38.4	7.6	3.2	1.34	34.7	36.8	.	.	51.5	59.1	61.5	14.1	3.2	76.8	50.9
Redtail (King's Agri-seeds)	RT 54T96	104	31,508	33.5	25.3	38.8	7.5	2.9	1.24	37.6	35.7	.	.	56.1	66.5	69.6	10.8	3.7	94.8	58.5
Seed Consultants, Inc.	SC1042Q	104	31,799	34.5	23.9	37.0	6.6	3.3	1.28	36.8	39.1	.	.	53.2	62.8	65.6	13.5	3.1	82.5	53.5
Syngenta Seeds	E110F4-D	110	30,637	34.5	27.5	37.5	6.5	3.0	1.33	37.3	39.0	39.2	47.3	54.4	62.8	65.4	13.4	3.3	82.9	53.5
Seed Consultants, Inc.	SC1055V	105	32,089	35.2	28.1	42.0	7.2	2.8	1.34	38.1	34.1	.	.	53.0	61.7	64.4	12.2	3.7	89.2	55.8
Redtail (King's Agri-seeds)	RT 55T79-D1	105	31,508	35.5	31.2	37.3	7.4	3.0	1.35	36.5	37.7	.	.	52.7	61.1	63.6	13.8	3.2	79.8	52.4
Pioneer	P04511V	104	31,363	36.0	32.7	40.2	7.4	2.8	1.32	36.9	34.7	.	.	55.4	63.2	66.0	11.8	3.7	91.5	57.1
Dekalb	DKC110-10RIB	110	30,928	36.2	30.0	40.3	6.7	2.8	1.52	37.5	35.5	.	.	54.5	62.7	65.5	12.2	3.7	89.8	56.2
Revere Seed	Revere 0518VT2P	105	32,234	36.3	26.3	40.0	7.0	3.0	1.39	36.0	36.5	.	.	55.1	62.5	65.2	12.7	3.6	86.8	55.1
Syngenta Seeds	E105Z5-D	105	30,782	38.6	29.2	41.6	7.0	2.8	1.46	38.8	34.8	36.1	45.8	53.7	60.8	64.1	12.4	3.7	87.3	54.8
KingFisher (King's Agri-seeds)	KF 59B70[3]	109	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
		RM Mean	**31,463**	**34.2**	**27.8**	**38.6**	**7.1**	**3.0**	**1.32**	**36.8**	**36.8**	**37.7**	**46.5**	**53.8**	**62.7**	**65.6**	**12.7**	**3.4**	**86.2**	**54.9**
		Overall LSD (0.10)	**NS[2]**	**2.6**	**4.8**	**NS**	**NS**	**0.4**	**NS**	**NS**	**NS**	**.**	**.**	**NS**	**NS**	**NS**	**2.3**	**NS**	**13.1**	**2.4**
		Overall Mean	**31,441**	**34.7**	**27.3**	**38.9**	**7.3**	**3.0**	**1.34**	**36.6**	**36.4**	**37.7**	**46.5**	**54.1**	**63.1**	**66.0**	**12.4**	**3.5**	**87.7**	**55.5**

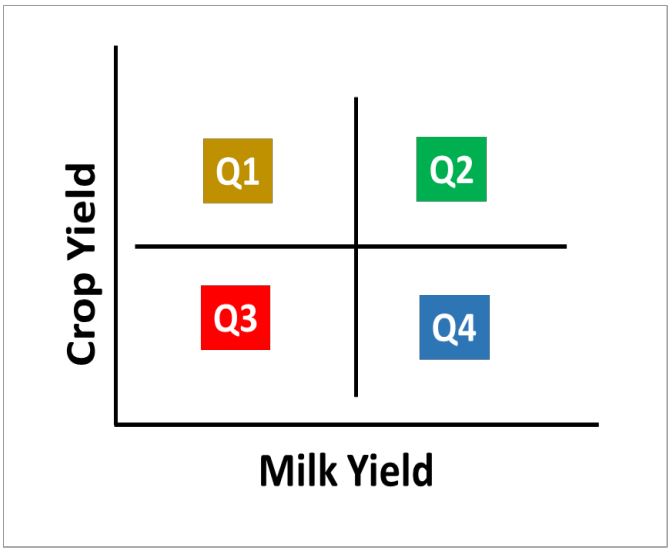
Table 6b: Hybrid performance for 99–110-day RM groups at Aurora, NY *(page 1 of 2)*.

Company/Brand	Hybrid	Relative Maturity	Harvest Population	Dry Matter	Yield, 35% DM	Starch	Crude Protein	Lignin	C 18:2	12 hr NDFD	aNDFom	Wet Chem aNDFom	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDFom	RFC - Fill Ratio[1]	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
			plants/ac	%	tons/ac	% DM	% DM	% DM	% DM	% NDF	% DM	% DM	% NDFom	% NDFom	% NDFom	% NDFom	% DM		lbs/day	lbs/day
Seed Consultants, Inc.	SC1018AM	101	32,179	33.0	20.2	36.1	5.5	2.6	1.17	40.8	37.4	.	.	60.0	67.0	70.7	10.9	3.8	97.7	60.3
Channel	203-99SSPRIB	103	32,179	33.3	18.3	34.3	5.7	2.7	1.15	37.0	38.2	.	.	57.7	64.9	67.7	12.3	3.4	89.7	56.2
Seedway	SW 0123PE	101	33,592	34.5	21.0	36.7	5.3	3.0	1.30	35.7	38.7	.	.	53.1	60.3	62.9	14.4	3.1	77.8	50.9
Dekalb	DKC101-33RIB	101	32,336	34.6	24.3	38.9	6.0	2.6	1.16	37.8	34.8	.	.	56.5	64.7	67.5	11.4	3.8	94.1	58.0
Dekalb	DKC53-94RIB	103	32,807	35.1	23.3	37.8	6.0	2.8	1.25	36.5	36.4	.	.	54.8	62.3	64.9	12.7	3.4	86.8	54.7
DynaGro Seed	D37PN35RA	97	33,592	35.5	22.4	40.6	5.9	2.7	1.38	36.6	34.3	.	.	54.2	62.2	65.0	12.1	3.7	89.7	55.9
Dekalb	DKC102-13RIB	102	32,336	35.7	23.7	39.8	5.8	2.6	1.24	38.3	36.0	.	.	59.2	69.1	73.0	9.7	4.1	100.5	60.9
Growmark, Inc.	FS 5347T RIB	103	32,179	35.8	22.2	37.9	5.9	3.0	1.18	35.8	36.6	.	.	54.6	61.9	65.2	12.7	3.4	86.6	54.7
Revere Seed	Revere 101-P47	101	32,022	36.0	20.8	39.0	5.5	2.8	1.26	36.3	35.9	.	.	54.5	60.7	63.3	13.2	3.5	84.2	53.5
Growmark, Inc.	FS 5045P RIB	100	32,022	36.3	21.5	39.4	6.0	2.8	1.28	36.0	34.9	.	.	53.7	61.2	63.9	12.7	3.6	86.5	54.3
Channel	201-07SSPRIB	101	33,749	36.4	19.3	37.4	5.6	2.6	1.23	38.6	36.9	.	.	59.0	67.5	70.7	10.8	3.9	97.3	59.9
Seedway	SW 9876SS	98	34,063	36.5	22.2	35.5	5.5	3.0	1.19	37.6	40.2	.	.	55.9	63.3	66.8	13.4	3.2	84.1	54.1
Seedway	SW 0030SS	100	31,866	36.5	24.3	36.8	6.0	2.8	1.20	38.5	37.6	.	.	58.4	66.0	69.4	11.5	3.7	95.0	58.8
Syngenta Seeds	NK0123-AA	101	31,238	36.9	19.0	40.0	5.9	2.6	1.30	37.9	34.9	.	.	57.1	66.4	69.6	10.6	3.9	98.8	59.9
		RM Mean	**32,583**	**35.4**	**21.6**	**37.9**	**5.8**	**2.7**	**1.23**	**37.4**	**36.6**	**.**	**.**	**56.3**	**64.1**	**67.2**	**12.0**	**3.6**	**90.6**	**56.6**
		Overall LSD (0.10)	**1,610**	**2.0**	**NS[2]**	**3.2**	**NS**	**0.2**	**NS**	**2.5**	**2.9**	**.**	**.**	**3.9**	**5.0**	**5.5**	**2.3**	**0.6**	**12.2**	**2.5**
		Overall Mean	**32,792**	**34.7**	**21.9**	**37.4**	**5.7**	**2.7**	**1.21**	**38.0**	**37.1**	**39.5**	**61.3**	**57.6**	**65.3**	**68.6**	**11.6**	**3.7**	**92.5**	**57.5**

Table 6b: Hybrid performance for 99–110-day RM groups at Aurora, NY *(page 2 of 2)*.

Company/Brand	Hybrid	Relative Maturity	Harvest Population	Dry Matter	Yield, 35% DM	Starch	Crude Protein	Lignin	C 18:2	12 hr NDFD	aNDFom	Wet Chem aNDFom	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDFom	RFC - Fill Ratio[1]	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
			plants/ac	%	tons/ac	% DM	% DM	% DM	% DM	% NDF	% DM	% DM	% NDFom	% NDFom	% NDFom	% NDFom	% DM		lbs/day	lbs/day
KingFisher (King's Agri-seeds)	KF 59B70	109	32,493	28.4	21.5	35.6	6.4	1.7	1.14	46.2	36.6	37.6	70.5	72.6	84.6	88.4	4.2	6.0	129.7	73.9
DynaGro Seed	D49PN05RA	109	29,668	31.9	22.3	36.7	5.7	2.7	1.05	37.2	37.3	.	.	59.3	67.6	71.7	10.6	3.7	98.0	60.1
Syngenta Seeds	E110F4-D	110	32,807	32.5	23.9	32.4	6.1	2.9	1.11	38.1	40.7	41.5	56.3	56.9	63.3	66.7	13.6	3.1	82.6	53.5
Seed Consultants, Inc.	SC1094PCE	109	33,592	33.0	19.7	35.1	5.5	2.7	1.20	39.0	39.0	.	.	58.1	66.3	69.5	11.9	3.5	91.5	57.5
Seed Consultants, Inc.	SC1042Q	104	33,121	33.6	20.3	35.7	5.7	2.8	1.27	38.8	38.3	.	.	55.9	62.5	65.5	13.2	3.3	84.5	53.8
Revere Seed	Revere 0918VT2P	109	34,220	33.7	25.0	36.9	5.4	3.0	1.16	36.2	37.5	.	.	57.2	63.0	66.4	12.6	3.6	87.6	55.3
Dekalb	DKC61-80RIB	111	32,179	33.9	21.5	35.0	5.6	3.2	1.14	36.1	39.6	.	.	55.1	61.9	65.3	13.8	3.2	82.0	53.1
Seed Consultants, Inc.	SC1055V	105	32,022	34.4	24.3	39.0	5.5	2.7	1.18	38.0	36.6	.	.	57.9	64.8	67.9	11.8	3.8	92.6	57.2
Redtail (King's Agri-seeds)	RT 54T96	104	32,179	34.6	20.3	38.4	5.8	2.6	1.26	38.7	35.8	.	.	57.5	65.3	68.2	11.3	3.8	94.1	58.4
Dekalb	DKC110-10RIB	110	34,691	34.6	21.4	35.4	5.6	2.6	1.23	39.7	37.8	.	.	61.9	71.3	74.5	9.4	4.3	102.8	62.5
Channel	204-54SSPRIB	104	33,749	34.9	22.9	37.9	5.4	2.7	1.28	37.0	37.5	.	.	58.7	66.1	69.3	11.5	3.8	93.3	58.0
Redtail (King's Agri-seeds)	RT 55T79-D1	105	33,121	35.2	19.5	36.0	5.3	2.8	1.29	37.6	39.2	.	.	55.9	62.0	64.8	13.8	3.3	81.5	52.7
Dekalb	DKC105-25RIB	105	33,906	35.3	20.6	38.9	5.5	2.6	1.22	37.1	36.5	.	.	56.6	64.0	66.8	12.1	3.7	91.1	56.6
Pioneer	P04511V	104	33,749	35.5	25.0	39.9	6.0	2.4	1.21	38.3	33.9	.	.	58.9	66.2	70.4	10.0	4.1	101.8	61.3
DynaGro Seed	D44PN25RA	104	33,278	35.5	22.3	39.9	5.9	2.5	1.26	39.8	35.9	.	.	59.7	69.2	73.3	9.6	4.2	102.7	61.8
Revere Seed	Revere 0518VT2P	105	32,493	35.8	22.1	37.6	5.7	2.8	1.23	36.9	37.1	.	.	56.3	64.2	67.8	12.1	3.6	90.1	56.4
Syngenta Seeds	E105Z5-D	105	33,121	36.6	23.3	38.1	5.8	2.7	1.12	38.9	37.5	39.6	57.0	57.4	65.5	69.7	11.3	3.7	94.3	58.2
		RM Mean	**32,964**	**34.1**	**22.1**	**37.0**	**5.7**	**2.7**	**1.20**	**38.5**	**37.5**	**39.5**	**61.3**	**58.6**	**66.4**	**69.8**	**11.3**	**3.8**	**94.1**	**58.2**
		Overall LSD (0.10)	**1,610**	**2.0**	**NS[2]**	**3.2**	**NS**	**0.2**	**NS**	**2.5**	**2.9**	**.**	**.**	**3.9**	**5.0**	**5.5**	**2.3**	**0.6**	**12.2**	**2.5**
		Overall Mean	**32,792**	**34.7**	**21.9**	**37.4**	**5.7**	**2.7**	**1.21**	**38.0**	**37.1**	**39.5**	**61.3**	**57.6**	**65.3**	**68.6**	**11.6**	**3.7**	**92.5**	**57.5**

Figure 4. Interpretation of quartile plots used in Figures 5 and 6.



Q1: Crop Yield: Above Average
Milk Yield: Below Average

Q2: Crop Yield: Above Average
Milk Yield: Above Average

Q3: Crop Yield: Below Average
Milk Yield: Below Average

Q4: Crop Yield: Below Average
Milk Yield: Above Average

Figure 5.

Relationship between crop yield and predicted milk yield (PMY) for 85–98-day relative maturity (RM) hybrids planted at Alburgh, VT (5a) and Aurora, NY (5b). Hybrids located in the top right quadrant were above the overall mean for both crop yield and PMY and are considered good performers. Hybrids located in the bottom left quadrant were below the mean for yield and milk production potential. Hybrids in the top left quadrant were below the mean for yield and above the mean for milk production potential and hybrids in the bottom right quadrant were above the mean for yield and below the mean for milk production potential.

Figure 6.

Relationship between crop yield and predicted milk yield (PMY) for 99–110-day relative maturity (RM) hybrids planted at Alburgh, VT (6a) and Aurora, NY (6b). Hybrids located in the top right quadrant were above the overall mean for both crop yield and PMY and are considered good performers. Hybrids located in the bottom left quadrant were below the mean for yield and milk production potential. Hybrids in the top left quadrant were below the mean for yield and above the mean for milk production potential and hybrids in the bottom right quadrant were above the mean for yield and below the mean for milk production potential.

Figures 5 & 6: Least Significant Difference

Least significant difference (LSD) is used to indicate if the statistical difference between two values is meaningful at a certain confidence level. An LSD of 0.10 indicates a confidence level of 90%. In figures 5 & 6 the LSD (0.10) is represented graphically as a way to visualize if the differences between hybrids is statistically significant.

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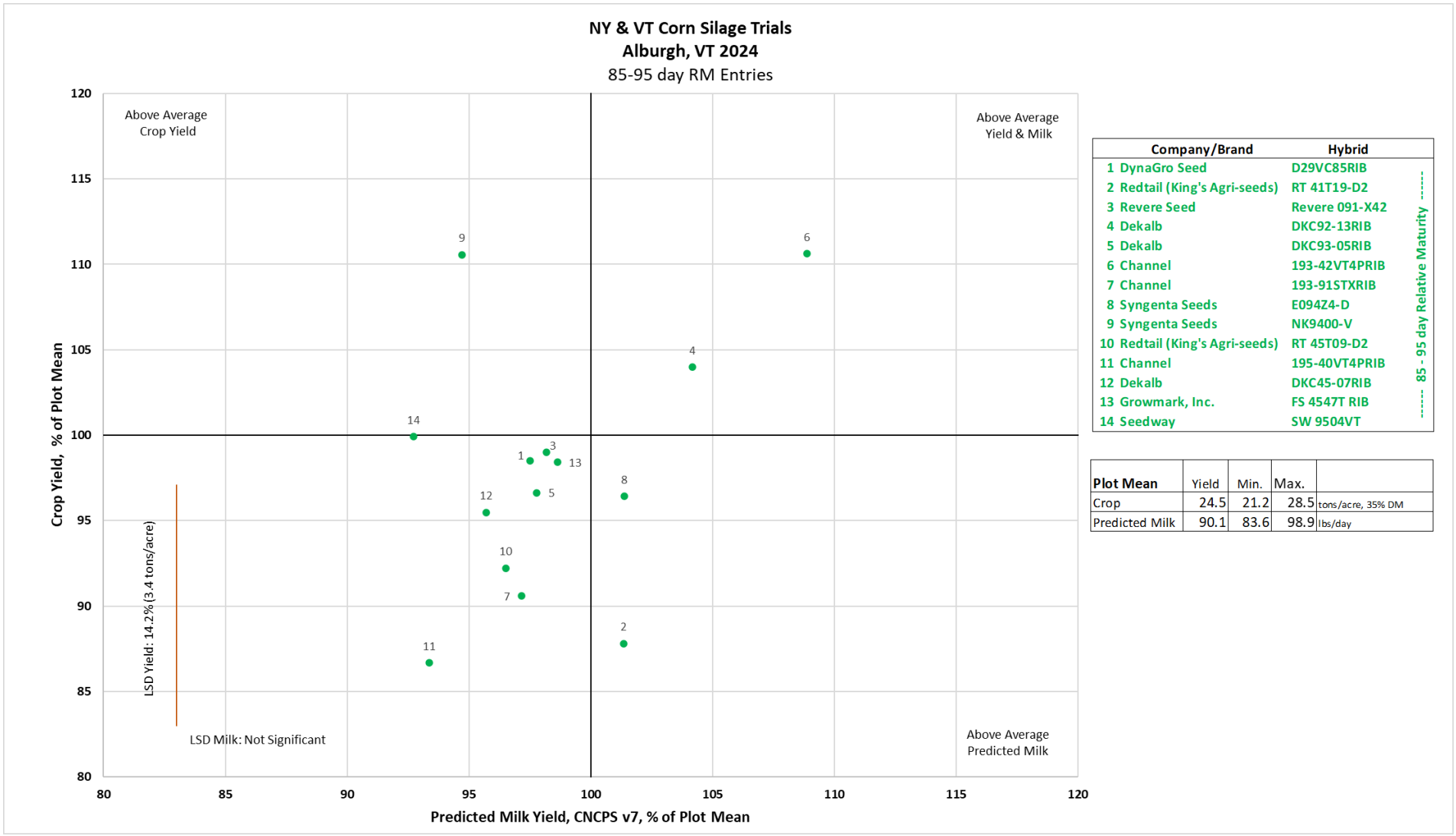
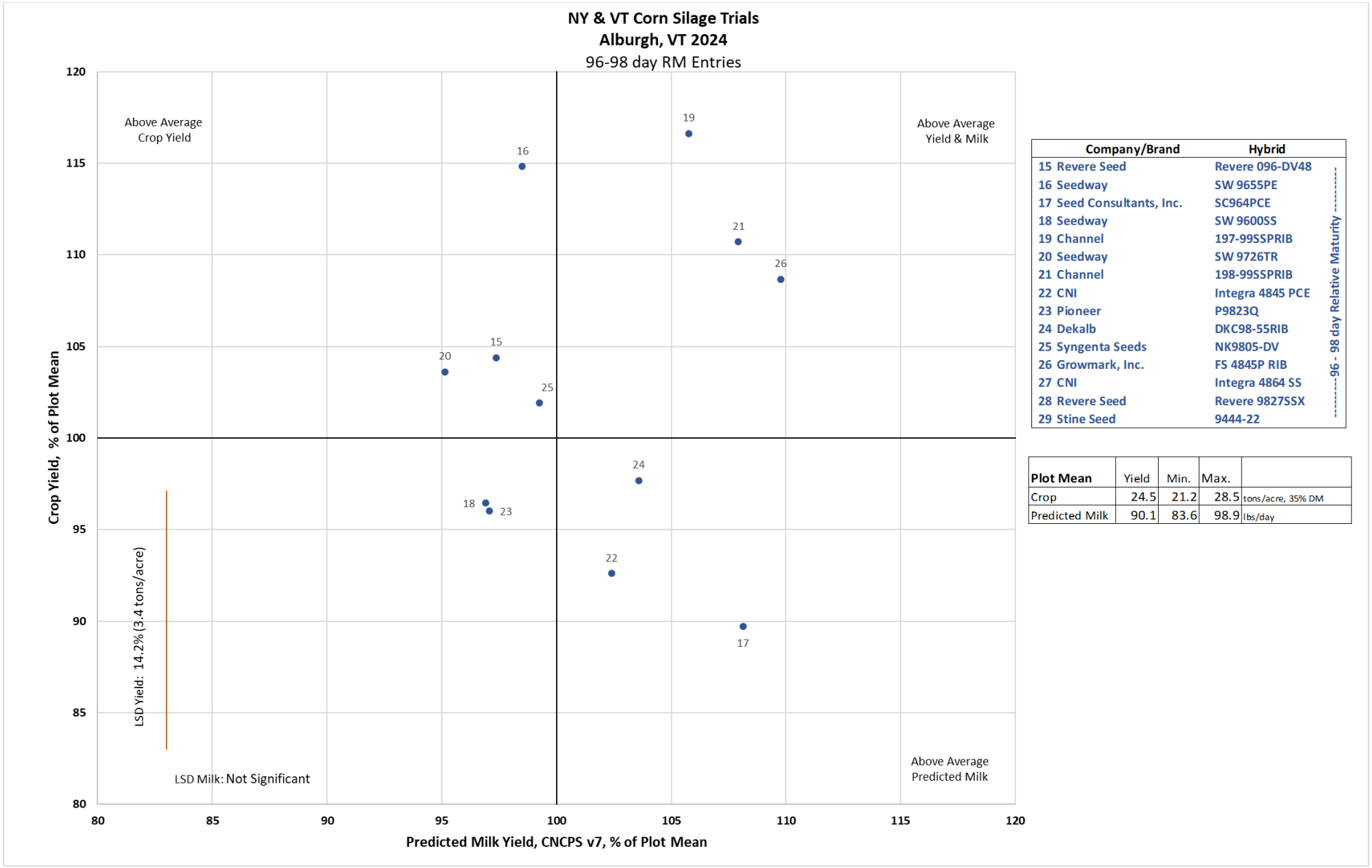


Figure 5a: Alburgh, VT 85–98-day RM hybrids, 85-95 RM entries.



Company/Brand	Hybrid
15 Revere Seed	Revere 096-DV48
16 Seedway	SW 9655PE
17 Seed Consultants, Inc.	SC964PCE
18 Seedway	SW 9600SS
19 Channel	197-99SSPRIB
20 Seedway	SW 9726TR
21 Channel	198-99SSPRIB
22 CNI	Integra 4845 PCE
23 Pioneer	P9823Q
24 Dekalb	DKC98-55RIB
25 Syngenta Seeds	NK9805-DV
26 Growmark, Inc.	FS 4845P RIB
27 CNI	Integra 4864 SS
28 Revere Seed	Revere 9827SSX
29 Stine Seed	9444-22

96 - 98 day Relative Maturity

Plot Mean	Yield	Min.	Max.	
Crop	24.5	21.2	28.5	tons/acre, 35% DM
Predicted Milk	90.1	83.6	98.9	lbs/day

Figure 5a: Alburgh, VT 85–98-day RM hybrids, 96-98 RM entries *(cont.)*.

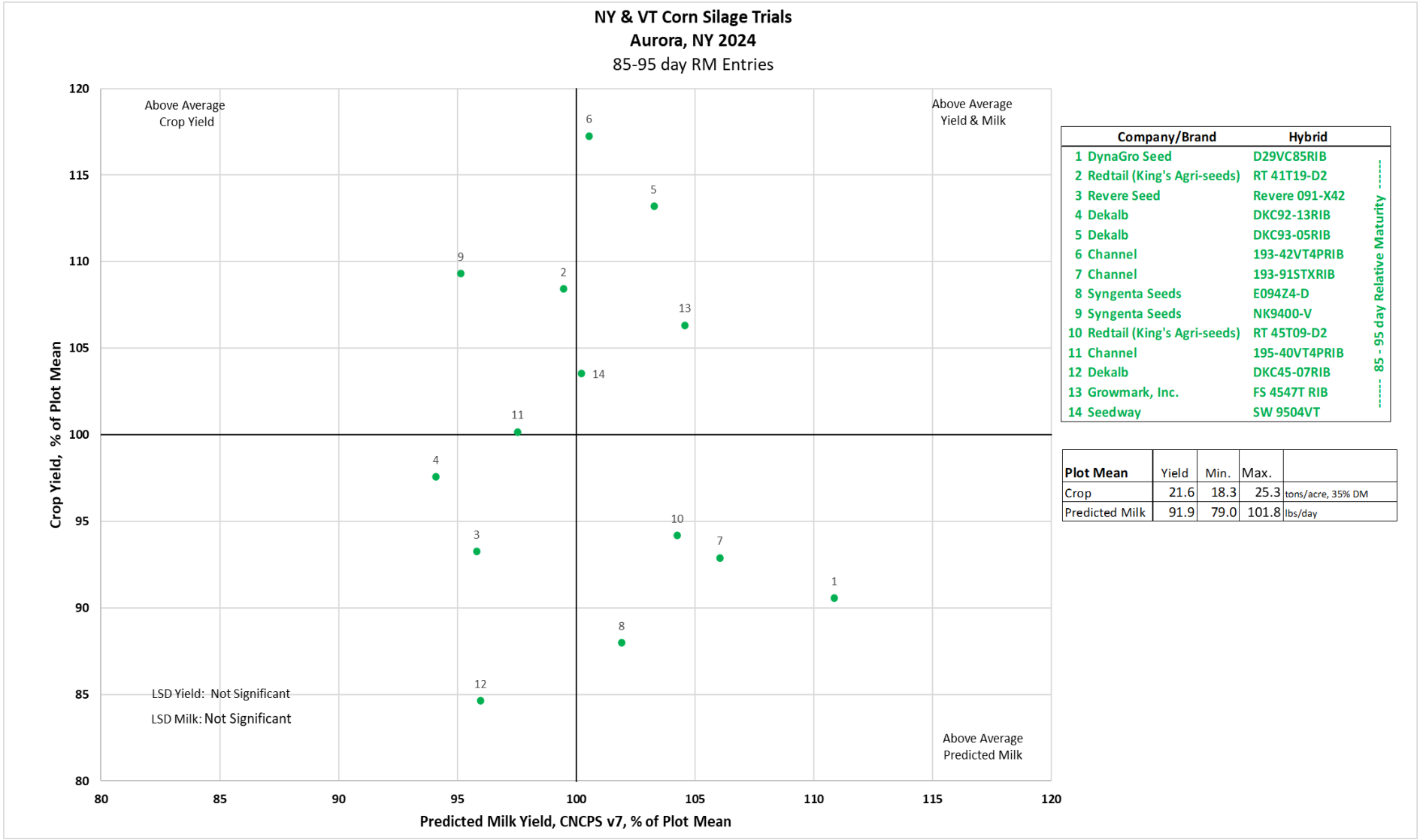


Figure 5b: Aurora, NY 85–98-day RM hybrids, 85-95 RM entries.

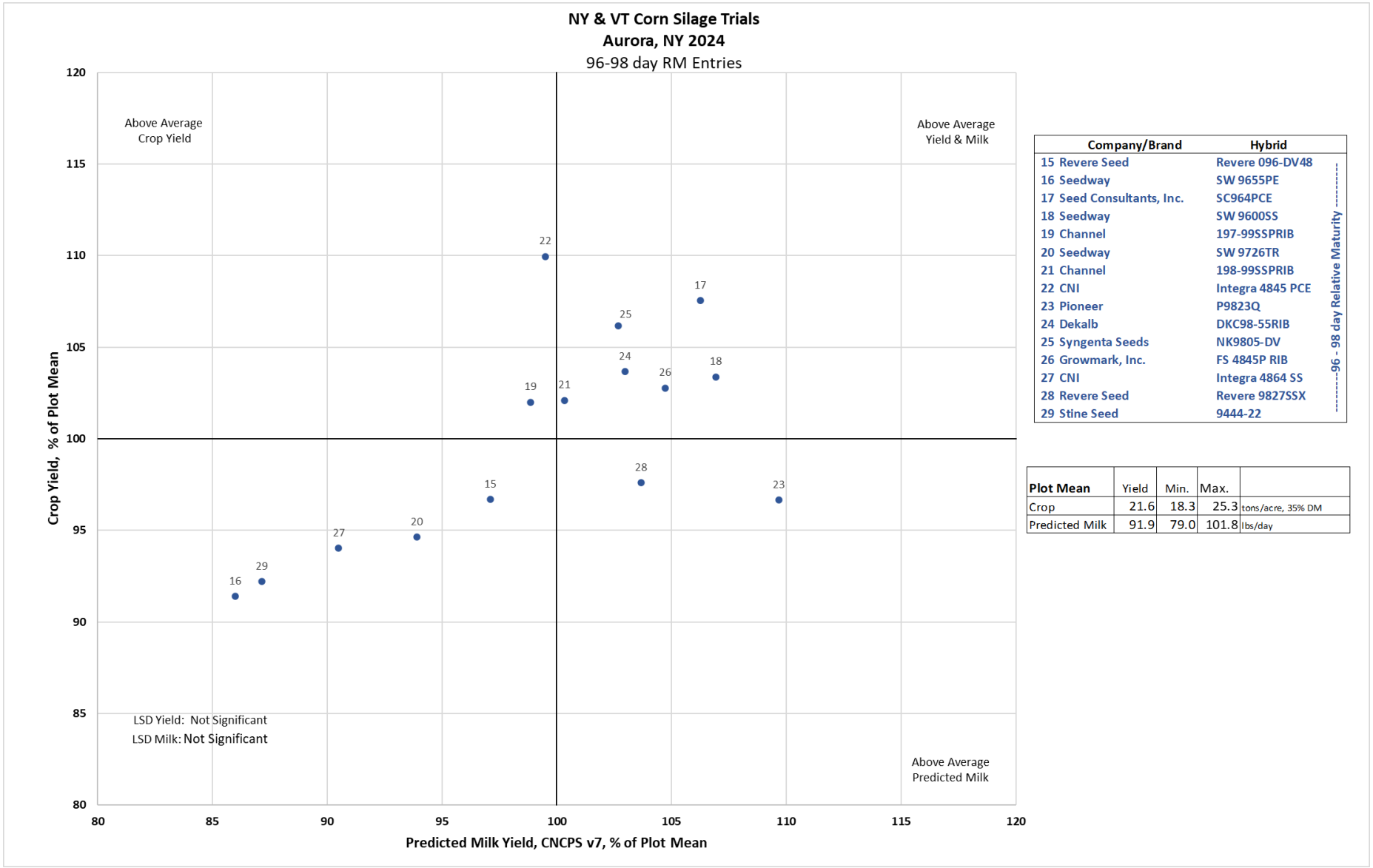


Figure 5b: Aurora, NY 85–98-day RM hybrids, 96-98 RM entries *(cont.)*.

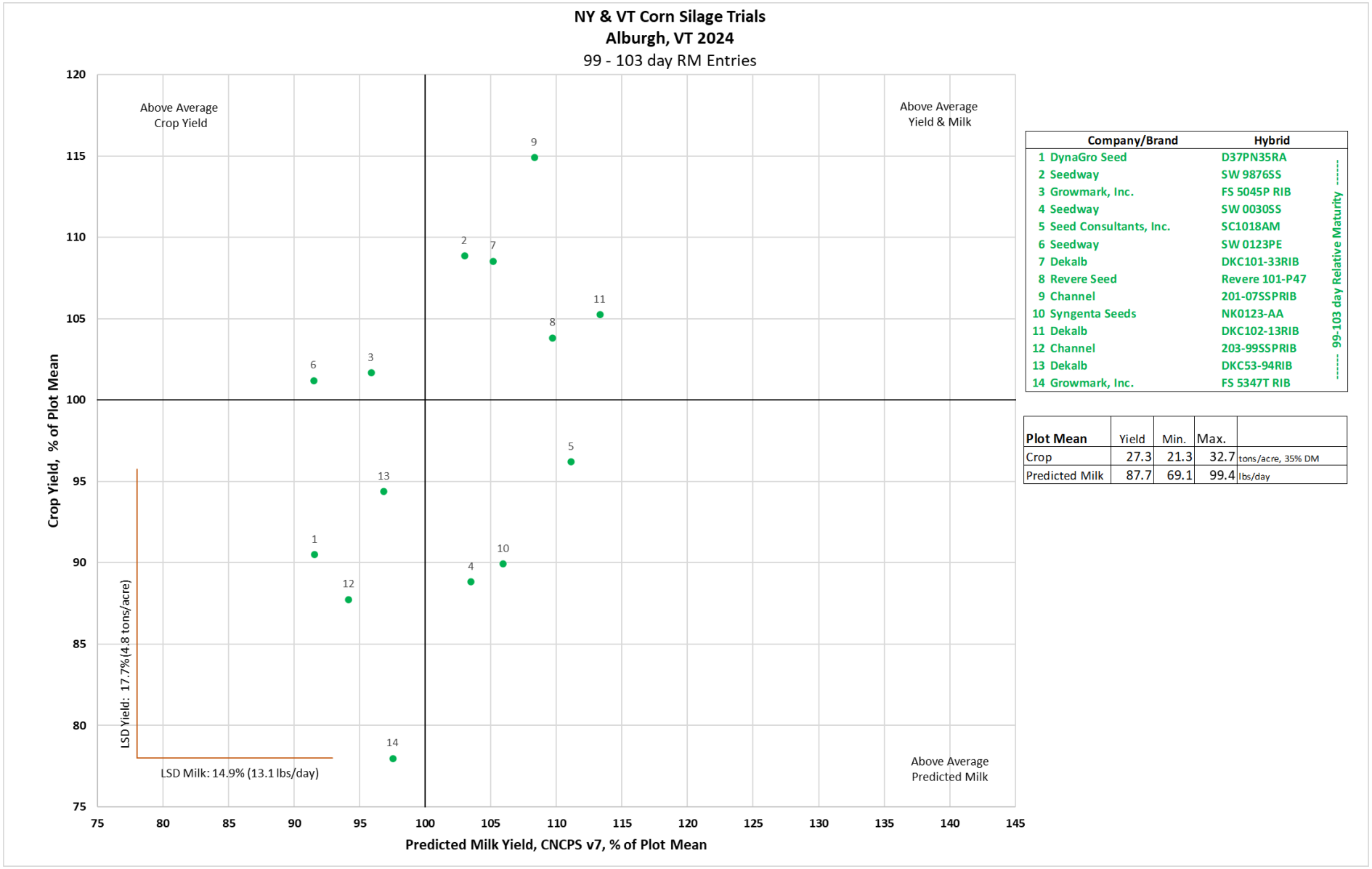


Figure 6a: Alburgh, VT 99–110-day RM hybrids, 99-103 RM entries.

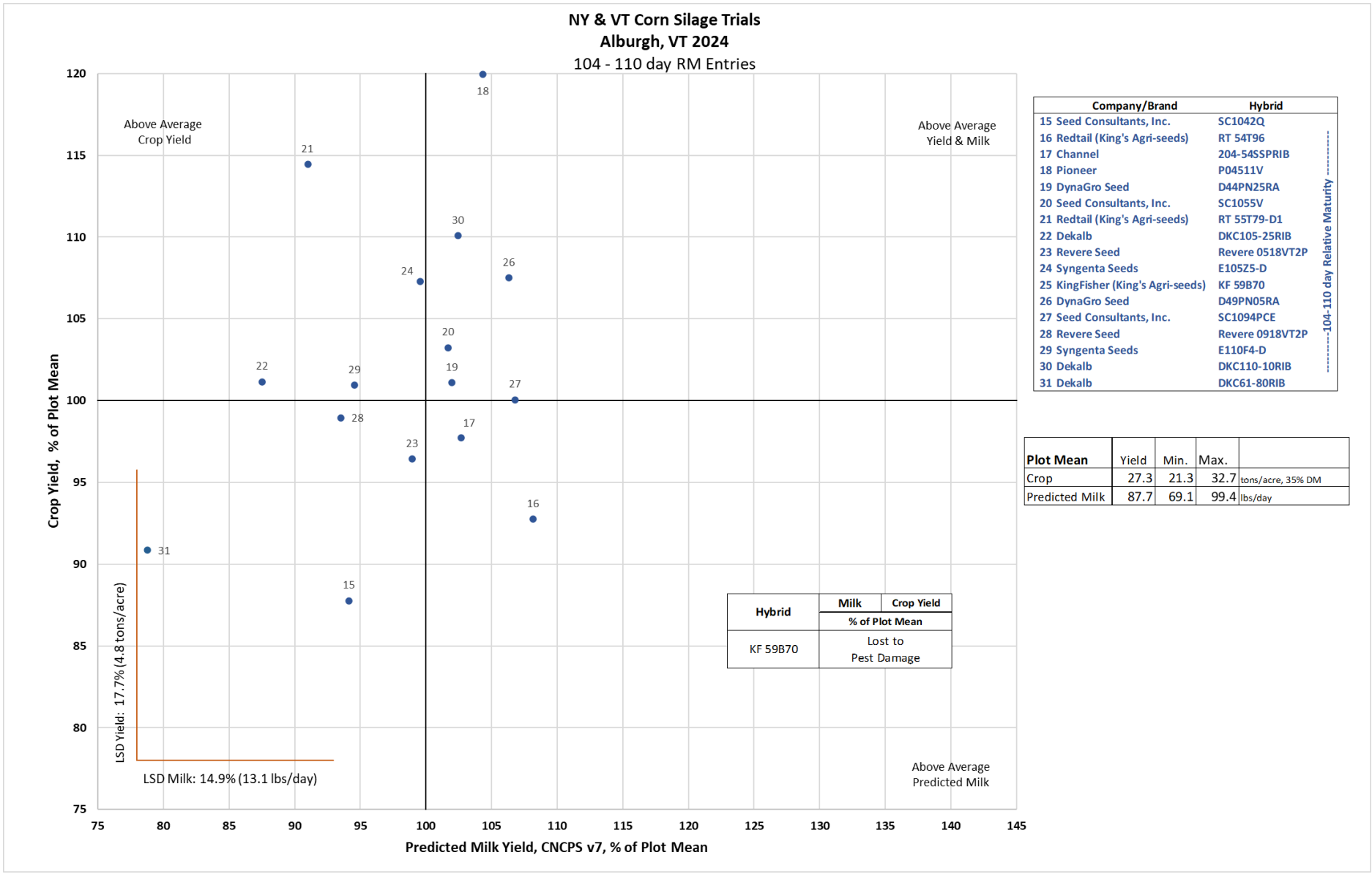


Figure 6a: Alburgh, VT 99–110-day RM hybrids, 104-110 RM entries *(cont.)*.

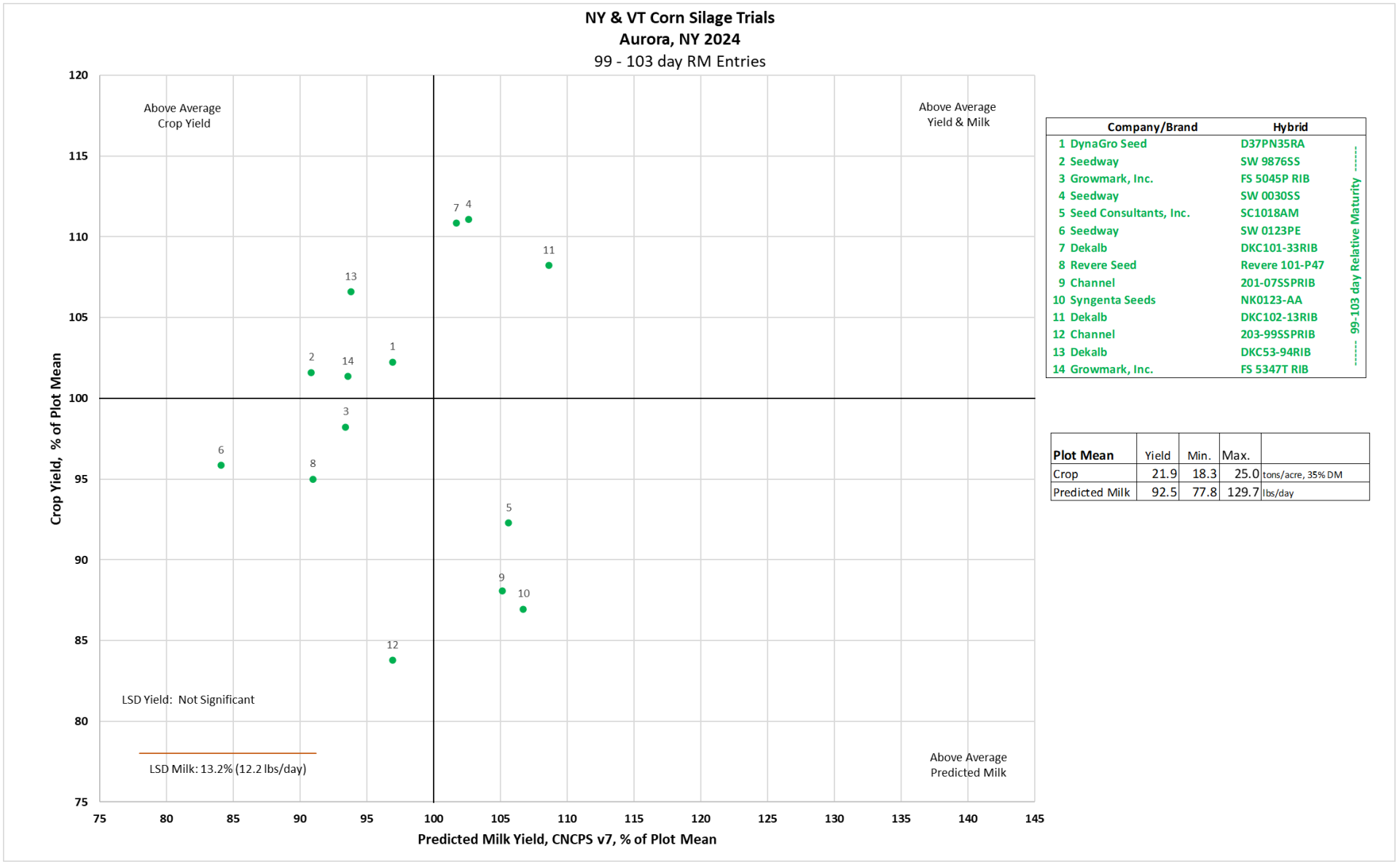


Figure 6b: Aurora, NY 99–110-day RM hybrids, 99-103 RM entries.

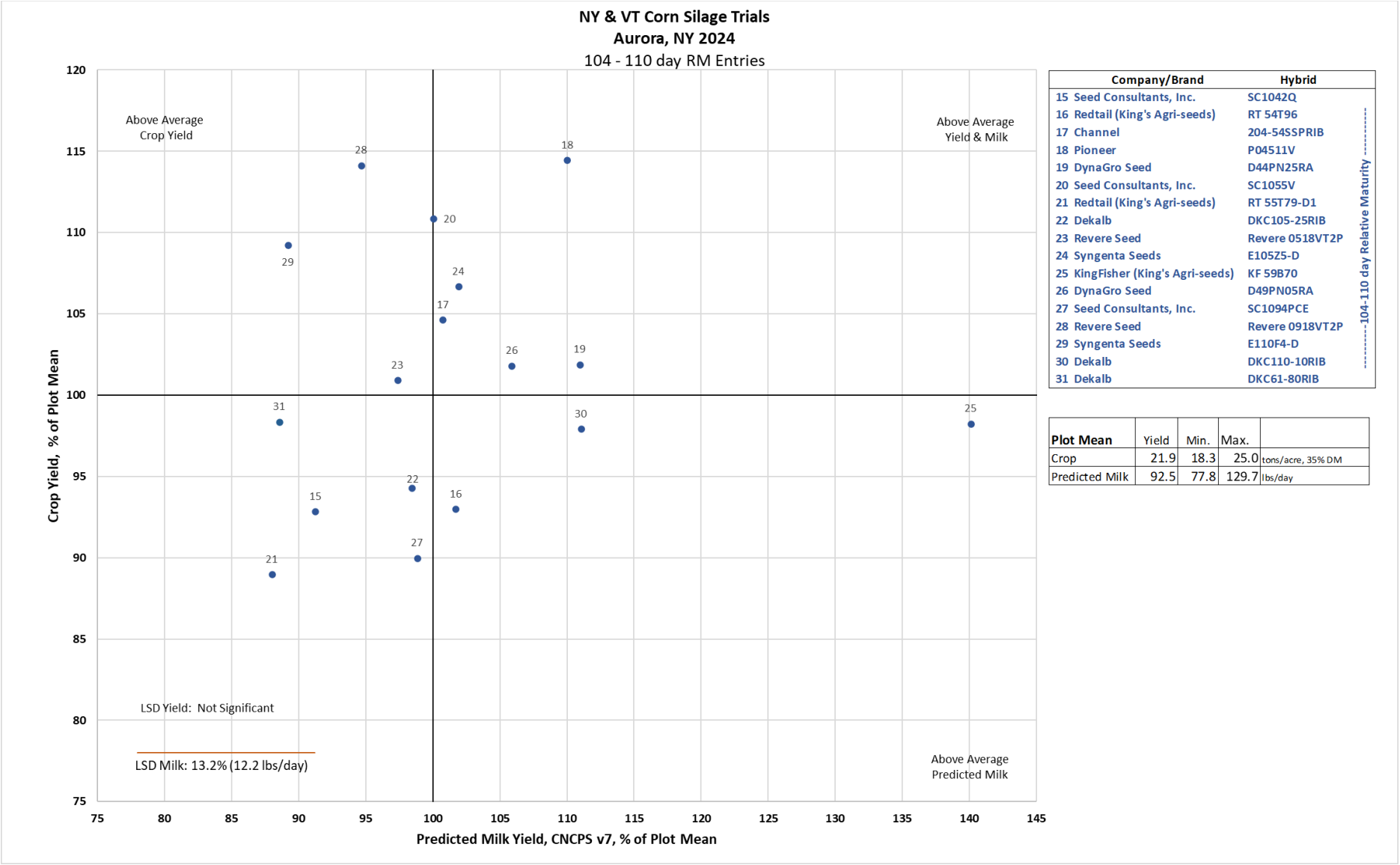


Figure 6b: Aurora, NY 99–110-day RM hybrids, 104-110 RM entries *(cont.)*.

Table 7: Comparative hybrid performance across locations and years

Footnotes for Table 7

[1]Comparative values based on mean equal to 100%, Crop Yield is reported in tons/acre, 35% DM and Milk Yield is reported in lb/day.

[2]Environments are site-year combinations for current year and across all years a hybrid has been entered.

Table 7a: 85 - 98-day Relative Maturity (RM)

Company/Brand	Hybrid	RM	2024			All Years		
			Comparative Crop Yield	Comparative Milk Yield	No. Environ-ments[2]	Comparative Crop Yield	Comparative Milk Yield	No. Environ-ments[2]
			% of overall mean[1]			% of overall mean[1]		
DynaGro Seed	D29VC85RIB	89	95%	105%	2	95%	105%	2
Revere Seed	Revere 091-X42	91	96%	98%	2	96%	98%	2
Redtail (King's Agri-seeds)	RT 41T19-D2	91	98%	101%	2	98%	101%	2
Dekalb	DKC92-13RIB	92	101%	100%	2	101%	100%	2
Dekalb	DKC93-05RIB	93	105%	102%	2	105%	102%	2
Channel	193-91STXRIB	93	92%	103%	2	99%	104%	10
Channel	193-42VT4PRIB	93	114%	106%	2	114%	106%	2
Syngenta Seeds	E094Z4-D	94	92%	103%	2	92%	103%	2
Syngenta Seeds	NK9400-V	94	110%	96%	2	110%	96%	2
Redtail (King's Agri-seeds)	RT 45T09-D2	95	93%	101%	2	98%	98%	8
Growmark, Inc.	FS 4547T RIB	95	103%	103%	2	103%	103%	2
Dekalb	DKC45-07RIB	95	90%	97%	2	98%	102%	22
Seedway	SW 9504VT	95	102%	97%	2	105%	101%	5
Channel	195-40VT4PRIB	95	94%	96%	2	94%	96%	2
Seedway	SW 9600SS	96	100%	103%	2	100%	103%	2
Seedway	SW 9655PE	96	103%	93%	2	103%	93%	2
Revere Seed	Revere 096-DV48	96	101%	98%	2	101%	98%	2
Seed Consultants, Inc.	SC964PCE	96	99%	108%	2	99%	108%	2
Channel	197-99SSPRIB	97	109%	103%	2	109%	103%	2
Seedway	SW 9726TR	97	99%	95%	2	100%	97%	7
CNI	Integra 4864 SS	98	100%	95%	2	100%	95%	2
Revere Seed	Revere 9827SSX	98	97%	100%	2	97%	100%	2
Channel	198-99SSPRIB	98	107%	105%	2	104%	105%	7
CNI	Integra 4845 PCE	98	101%	102%	2	101%	102%	2
Growmark, Inc.	FS 4845P RIB	98	106%	108%	2	106%	108%	2
Pioneer	P9823Q	98	96%	104%	2	102%	103%	4
Dekalb	DKC98-55RIB	98	101%	104%	2	101%	104%	2
Syngenta Seeds	NK9805-DV	98	104%	102%	2	104%	102%	2
Stine Seed	9444-22	99	92%	93%	2	91%	92%	4

Table 7b: 99 - 110-day Relative Maturity (RM)

Company/Brand	Hybrid	RM	2024			All Years		
			Comparative Crop Yield	Comparative Milk Yield	No. Environ-ments[2]	Comparative Crop Yield	Comparative Milk Yield	No. Environ-ments[2]
			% of overall mean[1]			% of overall mean[1]		
DynaGro Seed	D37PN35RA	97	96%	94%	2	96%	94%	2
Seedway	SW 9876SS	98	105%	97%	2	105%	97%	2
Seedway	SW 0030SS	100	100%	103%	2	103%	98%	11
Growmark, Inc.	FS 5045P RIB	100	100%	95%	2	100%	95%	2
Seedway	SW 0123PE	101	98%	88%	2	98%	88%	2
Dekalb	DKC101-33RIB	101	110%	103%	2	106%	105%	5
Seed Consultants, Inc.	SC1018AM	101	94%	108%	2	103%	110%	11
Syngenta Seeds	NK0123-AA	101	88%	106%	2	88%	106%	2
Revere Seed	Revere 101-P47	101	99%	100%	2	99%	100%	2
Channel	201-07SSPRIB	101	101%	107%	2	98%	110%	8
Dekalb	DKC102-13RIB	102	107%	111%	2	107%	111%	2
Channel	203-99SSPRIB	103	86%	96%	2	86%	96%	2
Dekalb	DKC53-94RIB	103	100%	95%	2	98%	98%	8
Growmark, Inc.	FS 5347T RIB	103	90%	96%	2	90%	96%	2
Channel	204-54SSPRIB	104	101%	102%	2	101%	102%	5
DynaGro Seed	D44PN25RA	104	101%	106%	2	101%	106%	2
Redtail (King's Agri-seeds)	RT 54T96	104	93%	105%	2	93%	105%	2
Seed Consultants, Inc.	SC1042Q	104	90%	93%	2	99%	103%	11
Pioneer	P04511V	104	117%	107%	2	117%	107%	2
Dekalb	DKC105-25RIB	105	98%	93%	2	98%	93%	2
Seed Consultants, Inc.	SC1055V	105	107%	101%	2	107%	101%	2
Redtail (King's Agri-seeds)	RT 55T79-D1	105	102%	90%	2	103%	97%	5
Revere Seed	Revere 0518VT2P	105	99%	98%	2	99%	98%	2
Syngenta Seeds	E105Z5-D	105	107%	101%	2	107%	101%	2
Revere Seed	Revere 0918VT2P	109	106%	94%	2	106%	94%	2
DynaGro Seed	D49PN05RA	109	105%	106%	2	105%	106%	2
Seed Consultants, Inc.	SC1094PCE	109	95%	103%	2	95%	103%	2
KingFisher (King's Agri-seeds)	KF 59B70	109	98%	140%	1	94%	133%	3
Syngenta Seeds	E110F4-D	110	105%	92%	2	105%	92%	2
Dekalb	DKC110-10RIB	110	104%	107%	2	104%	107%	2
Dekalb	DKC61-80RIB	111	94%	84%	2	99%	87%	5

Table 8: Description of seed traits for hybrids listed in Tables 5 and 6.

Table 8a. 85 - 98-day Relative Maturity (RM)

Brand	Hybrid	RM	Trait Package	
Channel	193-42VT4PRIB	93	VT4 PRO w/RNAi Tech.	VT4PRO
Channel	193-91STXRIB	93	SmartStax RIB Complete	SSRIB
Channel	195-40VT4PRIB	95	VT4 PRO w/RNAi Tech.	VT4PRO
Channel	197-99SSPRIB	97	SmartStax RIB Complete	SSRIB
Channel	198-99SSPRIB	98	SmartStax RIB Complete	SSRIB
CNI	Integra 4864 SS	98	SmartStax	SS, SX
CNI	Integra 4845 PCE	98	Powercore	PW
Dekalb	DKC92-13RIB	92	SmartStax PRO	SSPro
Dekalb	DKC93-05RIB	93	SmartStax	SS, SX
Dekalb	DKC45-07RIB	95	SmartStax	SS, SX
Dekalb	DKC98-55RIB	98	SmartStax	SS, SX
Dyna-Gro	D29VC85RIB	89	VT Double PRO	VT2P
Growmark FS	FS 4547T RIB	95	TreceptaRIBComplete	TRERIB
Growmark FS	FS 4845P RIB	98	SmartStax PRO RIB Complete	SSPro
NK Seeds	NK9400-V	94	Viptera	V
NK Seeds	E094Z4-D	94	Duracade	D
NK Seeds	NK9805-DV	98	Duracade Viptera	DV
Pioneer	P9823Q	98	Qrome	Q
Redtail	RT 41T19-D2	91	Duracade Viptera	DV
Redtail	RT 45T09-D2	95	Duracade Viptera	DV
Revere Seed	Revere 091-X42	91	SmartStax	SS, SX
Revere Seed	Revere 096-DV48	96	Duracade Viptera	DV
Revere Seed	Revere 9827SSX	98	SmartStax	SS, SX
Seed Consultants	SC964PCE	96	Powercore Enlist	PWE
Seedway	SW 9504VT	95	VT Double PRO	VT2P
Seedway	SW 9600SS	96	SmartStax	SS, SX
Seedway	SW 9655PE	96	Powercore Enlist	PWE
Seedway	SW 9726TR	97	Trecepta	TRE
Stine Seed	9444-22	99	Duracade	D

Table 8b. 99 - 110-day Relative Maturity

Brand	Hybrid	RM	Trait Package	
Channel	201-07SSPRIB	101	SmartStax RIB Complete	SSRIB
Channel	203-99SSPRIB	103	SmartStax RIB Complete	SSRIB
Channel	204-54SSPRIB	104	SmartStax RIB Complete	SSRIB
Dekalb	DKC101-33RIB	101	Smart Stax PRO	SSPro
Dekalb	DKC102-13RIB	102	VT4 PRO w/RNAi Tech.	VT4PRO
Dekalb	DKC53-94RIB	103	SmartStax	SS, SX
Dekalb	DKC105-25RIB	105	Smart Stax PRO	SSPro
Dekalb	DKC110-10RIB	110	SmartStax	SS, SX
Dekalb	DKC61-80RIB	111	SmartStax Refuge Advanced	SXRA
Dyna-Gro	D37PN35RA	97	Powercore Enlist	PWE
Dyna-Gro	D44PN25RA	104	Powercore Enlist	PWE
Dyna-Gro	D49PN05RA	109	Powercore Enlist	PWE
Growmark FS	FS 5045P RIB	100	SmartStax PRO RIB Complete	SSPro
Growmark FS	FS 5347T RIB	103	TreceptaRIBComplete	TRERIB
KingFisher	KF 59B70	109	Conventional	Conv.
NK Seeds	NK0123-AA	101	Agrisure Above	AA
NK Seeds	E105Z5-D	105	Duracade	D
NK Seeds	E110F4-D	110	Duracade	D
Pioneer	P04511V	104	Vorceed Enlist	V
Redtail	RT 54T96	104	Powercore	PW
Redtail	RT 55T79-D1	105	Duracade	D
Revere Seed	Revere 101-P47	101	VT Double PRO	VT2P
Revere Seed	Revere 0518VT2P	105	VT Double PRO	VT2P
Revere Seed	Revere 0918VT2P	109	VT Double PRO	VT2P
Seed Consultants	SC1018AM	101	Acremax	AM
Seed Consultants	SC1042Q	104	Qrome	Q
Seed Consultants	SC1055V	105	Vorceed Enlist	V
Seed Consultants	SC1094PCE	109	Powercore Enlist	PWE
Seedway	SW 9876SS	98	SmartStax	SS, SX
Seedway	SW 0030SS	100	SmartStax	SS, SX
Seedway	SW 0123PE	101	Powercore Enlist	PWE

Table 9: Trait descriptions

The latest version of the table is always posted at https://www.texasinsects.org/bt-corn-trait-table.html

For questions & corrections: Chris DiFonzo, Michigan State Univ., difonzo@msu.edu
Contributor: Pat Porter, Texas A&M University (web site host)

The Handy Bt Trait Table

Version March 2024

for U.S. Corn Production

Compiled by
Chris DiFonzo
Michigan State University

Web site hosting by
Pat Porter
Texas A&M University

The most up-to-date version of this table plus related extension materials are free online at:
https://www.texasinsects.org/bt-corn-trait-table.html
Questions? Comments? Complaints? difonzo@msu.edu

~ A helpful list of trait packages to make it easier to understand seed guides, sales materials, and bag tags ~

Updated design for 2024

In the past, all Bt trait packages have been in the trait table. But over the years, some industry colleagues commented that leaving older products in the table was confusing if growers assumed they could still be purchased. However, information on older packages is needed to interpret planting or research records from previous years. Also, companies still refer to original traits (like Herculex I or YieldGard) on field signs, web sites, and seed guides, because single traits are components of newer multi-trait hybrids.

To finally address this concern, the 2024 table is split. I looked at 2024 seed guides from the major seed companies plus many smaller regional providers. If I found a trait package offered in at least one hybrid, from any company, it stayed on the current trait table (page 2). Trait packages which were not found as standalone hybrids were moved into a new 'phased out' table (below) for historical reference. Hopefully, this split addresses any confusion in availability. This is a work in progress; if you see an error in the 'phased out' table, send me some evidence and I'll move that package back into the current table.

New Bt names: Names of pesticidal proteins that come from bacteria were recently updated. Most Bts in the trait table are unchanged, but **Cry34/35Ab1** is now **Gpp34Ab1/Tpp35Ab1**. I kept the old name in the Bt Trait Table for now, since many seed guides and extension materials haven't caught up to the change. But related materials on the Texas A&M website are up to date.

ABBREVIATIONS in the TRAIT TABLE

Insect Pest Targets

BCW	black cutworm
CEW	corn earworm
CRW	corn rootworm
ECB	European corn borer
FAW	fall armyworm
NCR	northern corn rootworm
SB	stalk borer
SCB	sugarcane borer
SWCB	southwestern corn borer
TAW	true armyworm
WBC	western bean cutworm
WCR	western corn rootworm

Herbicide Tolerance

GLY	glyphosate / Roundup-Ready
LL	glufosinate / Liberty Link
LL?	check the bag tag for LL status
Enlist	2,4-D & fops / Enlist trait

Refuge

Unless specified as RIB (Refuge In Bag), all other percentages assume separate, structured refuge areas planted in strips, blocks, borders, or whole fields

HISTORICAL REFERENCE Trait packages phased out as standalone hybrids *some may be components of current trait package	**Bag tag code**	**Proteins in package *********** Font type denotes target:** caterpillar or *rootworm*	**Marketed to control:** BCW	CEW	ECB	FAW	SB	SCB	SWCB	TAW	WBC	CRW	**Species w/ resistance to all Bts in package**	**Refuge, northern states** (higher in south)	**Herbicide tolerance**
AcreMax RW	AMRW	*Cry34/35Ab1*										x	NCR WCR	10% RIB	GLY LL
AcreMax TRIsect	AMT	Cry1Ab Cry1F *mCry3A*	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	10% RIB	GLY LL
Herculex I	HXI	Cry1F	x		x	x	x	x	x				ECB FAW SWCB WBC	20%	GLY LL
Herculex RW	HXRW	*Cry34/35Ab1*										x	NCR WCR	20%	GLY LL
Intrasect TRIsect	CYHR	Cry1Ab Cry1F *mCry3A*	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	20%	GLY LL
Intrasect Xtra	YXR	Cry1Ab Cry1F *Cry34/35Ab1*	x	x	x	x	x	x	x			x	CEW FAW NCR WBC WCR	20%	GLY LL
Intrasect Xtreme	CYXR	Cry1Ab Cry1F *Cry34/35Ab1 mCry3A*	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	5%	GLY LL
TRIsect	CHR	Cry1F *mCry3A*	x		x	x	x	x	x			x	ECB FAW SWCB WBC WCR	20%	GLY LL
VT Triple PRO	VT3P	Cry1A.105 Cry2Ab2 *Cry3Bb1*		x	x	x	x	x	x			x	CEW NCR WCR	20%	GLY
YieldGard Corn Borer	YGCB	Cry1Ab		x	x			x	x				CEW	20%	GLY
YieldGard Rootworm	YGRW	*Cry3Bb1*										x	NCR WCR	20%	GLY
YieldGard VT Triple	VT3	Cry1Ab *Cry3Bb1*		x	x			x	x			x	CEW NCR WCR	20%	GLY

The Handy Bt Trait Table for U.S. Corn Production

Version: March 2024

Currently available trait packages, A-Z (alternate name)	Bag tag code	Proteins in package ********** Font type denotes target: caterpillar or *rootworm*	Marketed to control: BCW	CEW	ECB	FAW	SB	SCB	SWCB	TAW	WBC	CRW	Species w/ resistance to all Bts in package	Refuge, northern states (higher in south)	Herbicide tolerance (? = check the bag tag)
AcreMax	AM	Cry1Ab Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	5% RIB	GLY LL
AcreMax1	AM1	Cry1F *Cry34/35Ab1*	x		x	x	x	x	x			x	ECB FAW NCR SWCB WBC WCR	10% RIB 20% ECB	GLY LL
AcreMax Leptra	AML	Cry1Ab Cry1F Vip3A	x	x	x	x	x	x	x	x	x			5% RIB	GLY LL
AcreMax Xtra	AMX	Cry1Ab Cry1F *Cry34/35Ab1*	x	x	x	x	x	x	x			x	CEW FAW NCR WBC WCR	10% RIB	GLY LL
AcreMax Xtreme	AMXT	Cry1Ab Cry1F *Cry34/35Ab1 mCry3A*	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	5% RIB	GLY LL
Agrisure 3000GT	3000GT	Cry1Ab *mCry3A*		x	x			x	x			x	CEW WCR	20%	GLY LL
Agrisure 3010 (Agrisure GT/CB/LL)	3010	Cry1Ab		x	x			x	x				CEW	20%	GLY LL
Agrisure Above (Agrisure 3120EZ) AA Refuge Renew (Agrisure 3120)	AA	Cry1Ab Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	EZ: 5% RIB Renew: 5%	GLY LL?
Agrisure RW or GT/RW	?	*mCry3A*										x	WCR	20%	GLY (if GT)
Agrisure Total (Agrisure 3122EZ) AT Refuge Renew (Agrisure 3122)	AT	Cry1Ab Cry1F *Cry34/35Ab1 mCry3A*	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	EZ: 5% RIB Renew: 5%	GLY LL?
Agrisure Viptera 3110	3110	Cry1Ab Vip3A	x	x	x	x	x	x	x	x	x			20%	GLY LL
Agrisure Viptera 3111	3111	Cry1Ab Vip3A *mCry3A*	x	x	x	x	x	x	x	x	x	x	WCR	20%	GLY LL
Duracade (Agrisure 5122EZ) D Refuge Renew (Agrisure 5122)	D	Cry1Ab Cry1F *eCry3.1Ab mCry3A*	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	EZ: 5% RIB Renew: 5%	GLY LL?
Duracade Viptera (Agrisure 5222EZ) DV Refuge Renew (Agrisure 5222)	DV	Cry1Ab Cry1F Vip3A *eCry3.1Ab mCry3A*	x	x	x	x	x	x	x	x	x	x	WCR	EZ: 5% RIB Renew: 5%	GLY LL?
Duracade Viptera Z3 (Agrisure 5332EZ) DVZ Refuge Renew (Agrisure 5332)	DVZ	Cry1Ab Cry1A.105 Cry2Ab2 Vip3A *eCry3.1Ab mCry3A*	x	x	x	x	x	x	x	x	x	x	WCR	EZ: 5% RIB Renew: 5%	GLY LL?
Herculex XTRA	HXX	Cry1F *Cry34/35Ab1*	x		x	x	x	x	x			x	ECB FAW NCR SWCB WBC WCR	20%	GLY LL
Intrasect	YHR	Cry1Ab Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	5%	GLY LL
Leptra	VYHR	Cry1Ab Cry1F Vip3A	x	x	x	x	x	x	x	x	x			5%	GLY LL
Powercore	PW	Cry1A.105 Cry2Ab2 Cry1F	x	x	x	x	x	x	x				CEW WBC	5%	GLY LL
Powercore Refuge Adv.	PWRA	Cry1A.105 Cry2Ab2 Cry1F	x	x	x	x	x	x	x				CEW WBC	5% RIB	GLY LL
Powercore Enlist Refuge Adv.	PWE	Cry1A.105 Cry2Ab2 Cry1F	x	x	x	x	x	x	x				CEW WBC	5% RIB	GLY LL Enlist
QROME	Q	Cry1Ab Cry1F *Cry34/35Ab1 mCry3A*	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	5% RIB	GLY LL
SmartStax/Genuity SmartStax	SS SX	Cry1A.105 Cry2Ab2 Cry1F *Cry3Bb1 Cry34/35Ab1*	x	x	x	x	x	x	x			x	CEW NCR WBC WCR	5%	GLY LL
SmartStax Enlist or SS Enlist Refuge Advanced	SSE	Same as SmartStax	x	x	x	x	x	x	x			x	CEW NCR WBC WCR	5% Adv: 5% RIB	GLY LL Enlist
SmartStax Refuge Adv. or SmartStax RIB Complete	SXRA	Same as SmartStax	x	x	x	x	x	x	x			x	CEW NCR WBC WCR	5% RIB	GLY LL
SmartStax PRO	SSPro	Cry1A.105 Cry2Ab2 Cry1F *Cry3Bb1 Cry34/35Ab1 dvSnf7*	x	x	x	x	x	x	x			x	CEW WBC	5%	GLY LL
SmartStax PRO Enlist or SSPro Enlist Refuge Advanced	SSPro	Same as SmartStax Pro	x	x	x	x	x	x	x			x	CEW WBC	5% Adv: 5% RIB	GLY LL Enlist
SmartStax PRO Refuge Adv. RIB Complete, or w/RNAi Tech	SSPro	Same as SmartStax Pro	x	x	x	x	x	x	x			x	CEW WBC	5% RIB	GLY LL
Trecepta RIB Complete	TRERIB	Cry1A.105 Cry2Ab2 Vip3A	x	x	x	x	x	x	x	x	x			5% RIB	GLY
Viptera (Agrisure 3220EZ) Vip Refuge Renew (Agrisure 3220)	V	Cry1Ab Cry1F Vip3A	x	x	x	x	x	x	x	x	x			EZ: 5% RIB Renew: 5%	GLY LL?
Viptera Z3 (Agrisure 3330EZ) VZ Refuge Renew (Agrisure 3330)	VZ	Cry1Ab Cry1A.105 Cry2Ab2 Vip3A	x	x	x	x	x	x	x	x	x			EZ: 5% RIB Renew: 5%	GLY LL?
Vorceed Enlist	V	Cry1A.105 Cry2Ab2 Cry1F *Cry3Bb1 Cry34/35Ab1 dvSnf7*	x	x	x	x	x	x	x			x	CEW NCR WBC	5% RIB	GLY LL Enlist
VT Double PRO	VT2P	Cry1A.105 Cry2Ab2		x	x	x	x	x	x				CEW	5%	GLY
VT2 PRO RIB Complete	VT2PRIB	Cry1A.105 Cry2Ab2		x	x	x	x	x	x				CEW	5% RIB	GLY
VT3 PRO RIB Complete	VT3PRIB	Cry1A.105 Cry2Ab2 *Cry3Bb1*		x	x	x	x	x	x			x	CEW NCR WCR	10% RIB	GLY
VT4 PRO w/RNAi Tech.	VT4PRO	Cry1A.105 Cry2Ab2 Vip3A *Cry3Bb1 dvSnf7*	x	x	x	x	x	x	x	x	x	x		5% RIB	GLY