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 robust evaluation. Hybrids were either entered into the 80-95 day relative maturity (**RM**) group (Early-Mid) and were tested at two locations in NY (n = 26; Lamb Farms in Oakfield and the Willsboro Research Farm in Willsboro) and one location in VT (n = 26; Borderview Farm in Alburgh) or were entered into the 96-110 day relative maturity group (Mid-Late) and were tested at two locations in NY (n = 41; Greenwood Farms in Madrid and the Musgrave Research Farm in Aurora) and one location in VT (n = 41; Borderview Farm in Alburgh). Weather data, growing degree days (**GDD**; 86-50°F system) and precipitation, both for the current year and long-term averages, can be found in Tables 1a and 1b for trial 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, the New York Corn Growers Corn Research and Education Program, and the Cornell University Agricultural Experiment Station. Seed companies were invited to submit hybrids into either maturity group (three locations per maturity group) for a fee.

MATERIALS AND METHODS

In 2022, the corn silage hybrid evaluation program received 67 entries from 13 seed brands. All hybrids were planted using a two-row planter at 34,000 plants/acre. Each plot consisted of four 20' rows spaced 30 inches apart with harvest of the inner two rows. Hybrids were planted in a randomized complete block design with 3 replications.

The early-mid hybrids were planted in Oakfield, NY on May 11th, and in Willsboro, NY and Alburgh, VT on May 13th. The mid-late hybrids were planted in Madrid, NY and Alburgh, VT on May 10th, and in Aurora, NY on May 13th. The early-mid hybrids were harvested on Aug. 29th in Oakfield, Sept. 3rd in Willsboro, and Sept. 12th in Alburgh. The mid-late hybrids were harvested on September 8th in Aurora, Sept. 15th in Madrid, and September 21st in Alburgh. From planting to harvest, the early-mid hybrids had 2,041 GDD in Oakfield, 2,099 GDD in Willsboro, and 2,117 GDD in Alburgh (86-50°F system). From planting to harvest, the mid-late hybrids had 2,145 GDD in Aurora, 2,138 GDD in Madrid, and 2,264 GDD in Alburgh (Figure 1 and Table 2).

Information on soil type, planting and harvest dates, and fertility management can be found in Table 3 for each field location.

The goal was to harvest all hybrids at about 65% (±3%) moisture. The maturity groups were monitored, and harvest decisions were made by measuring whole plant dry matter (**DM**) tested on fill 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 to 10 inches at the Albion, Aurora, and Madrid locations. Plots were harvested with a John Deere 3975 pull-type forage harvester equipped with a custom built 20A Plot Harvester Sampler (RCI Engineering, Mayville, WI) and weighed on platform scales at the Willsboro location with plot weights determined from the RCI software computer interface on-board the tractor at a target cutting height of 8 to 10 inches. 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 to 10 inches.

An approximate 500 g sample was taken per plot replicate, resulting in 9 samples per entry across the three sites. 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 (C 18:2), ash corrected neutral detergent fiber (**aNDFom**), and neutral detergent fiber digestibility (**NDFD**; 12, 30, 120, 240 h). Two 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 of CNCPS v.7.0 (Cornell University, Ithaca, NY). Rumen fill dictates the amount of feed a cow can consume and is limited by either the amount of uNDFom or aNDFom in a diet and there is a direct correlation between dry matter intake (**DMI**) and milk production. Therefore, by limiting the amount of feed consumed, the cow's milk production potential is limited. Corn silage NIR results were applied to a typical New York high corn silage-based diet (forage at ~60% of diet DM; corn silage ~75% of forage DM) in the CNCPS. For practical purposes, since the samples had not undergone fermentation, a feed library value was 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. Tom Overton, Dr. Mike Van Amburgh, and Dr. Andrew LaPierre. Initially, each individual hybrid replicate replaced the base corn silage in the diet at the same DM amount. 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) and the predicted milk production was recorded. 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). The least significant difference (**LSD**) values reported for separating hybrid means for each location were generated at the $P = 0.10$ level. 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

The growing season varied greatly across the Northeast in 2022. These extremes were captured in the field locations in the NY VT Corn Silage Hybrid Evaluation Program. This level of variation offers the opportunity to contrast hybrid crop performance across diverse environments.

Average spring precipitation, at most locations, coupled with warmer temperatures resulted in a very tight planting window with all trials planted between May 10th and 13th.

Precipitation trends of note include the droughty conditions in Western NY (Oakfield), excessive early season moisture at the Madrid location (following planting), and a generally wet season from start to finish at the Alburgh, VT location (Tables 1 & 2). Growing Degree Day (GDD) accumulation did not standout in either direction for 2022 (Tables 1 & 2, Figure 3).

While the Aurora location experienced some dry conditions, the only location designated by the U.S. Drought monitor was Oakfield, which was designated as Abnormally Dry (D0) in early July then worsened to a Moderate Drought (D1) by early August and remained in this status through harvest. In contrast, the Alburgh location received rainfall well above average and Madrid was notable for a few wet periods which resulted in above average seasonal rainfall (Table 1 & 2, Figure 1).

Despite the very narrow planting window, the variation in growing environment resulted in harvest timing to be spread across approximately 3.5 weeks, August 29th to September 21st (Table 2). Figure 2 provides a comparison of GDD accumulation from planting to harvest and average whole plant DM, highlighting the influence of growing environment and resulting variability in GDD's needed to achieve desirable average whole plant DM.

Harvest timing at the Willsboro and Aurora locations resulted in an average whole plot DM lower than desired. This indicates additional time (GDD accumulation) prior to harvest was warranted; however, when comparing GDD accumulation by location, Table 2 and Figure 2 show these locations having similar (Aurora) or more GDD's (Willsboro) than other locations that reached a higher average whole plant DM. This is likely a result of season long influences on plant development coupled with rainfall events close to harvest that were observed to impact the moisture of the stover fraction, and thereby influencing whole plant DM, while kernel development more closely reflected GDD accumulation as observed by the spread between whole plant DM and starch content (Figure 2 and Table 4). This demonstrates that GDD accumulation can act as a general indicator of harvest timing but closer assessment of 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 growing seasons before. 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. Or a scenario where the plant is not able to utilize available N and crop yield is limited by other factors, often 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 may exceed the book value, 2) the crop is more efficient at utilizing available N than current N rate calculations give it credit for, or 3) both.

The results presented in Table 3, reflect the available N balance for each location in 2022. 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 values are presented in Tables 4 and 5 as well as Figures 6 and 7. 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

Oakfield

When comparing monthly rainfall totals across the season (Table 1), this location was average for the month of May and below average for June through August, though these totals do not reflect the level of moisture stress experienced at the location. The seasonal rainfall of 9.7 inches measured from planting to harvest (Table 2, Figures 1 & 3) was the second lowest recorded across all locations in six years of trial data, with the lowest also from this location in 2018 (Figure 3).

Monthly GDD accumulation was slightly above average, though accumulation between planting and harvest was lower compared to recent years. Contrasting this with average whole plant DM, (Figure 2) the impact of the dry conditions on plant development is underscored.

The Oakfield plot was located in the same field in both 2021 and 2022 with nearly identical input management. This provides a unique opportunity to contrast the impact of rainfall on the crop performance. The 2022 Corn Silage Overview presents a year to year comparison with the whole plot average yield reported at 29.1 tons/acre (35% DM) in 2021 compared to 21.0 tons/acre (35% DM) in 2022 when harvested at the same whole plot average DM of 37.7% and 37.4% in 2021 and 2022, respectively. With regard to forage quality, the 2022 crop was lower in starch content (36.7% vs. 40.3% in 2021) and a higher average aNDFom indicating more total fiber. However, 2022 had a more favorable average NDFd30hr (60.5 % of NDFom vs. 57.7 % of NDFom in 2021) and very similar uNDFom at 240 hr (10.4 % of DM vs. 10.4 % of DM in 2021) indicating a better digestibility of this fiber.

The growing environment's impact on crop performance also showed up in the Nitrogen Balance for this location (Table 3). When compared to 2021, direct N inputs were lower; however, a biostimulant (PIVOT BIO PROVEN 40) was added in 2022 with the expectation that its use would contribute to the balance of N needed, equating to equivalent N inputs for 2021 and 2022. With this in mind, the N balance, which was already significantly positive in 2021 at 56 lbs/acre, grew further in 2022 to 80 lbs/acre, suggesting crop yield was limited by water, not nitrogen.

Willsboro

This location got off to a warm and dry start but moderated as the season went on. Monthly rainfall for this location was slightly below long-term averages (Table 1), with a dry start to the season largely contributing to this. However, when evaluating the seasonal total from planting to harvest, total rainfall was the highest since 2017 (Table 2, Figure 3).

Monthly GDD accumulation (Table 1) was slightly above average, though totals from planting to harvest feel in the middle compared to previous years (Table 2, Figure 3). It should be noted that the plot average whole plant DM was below the desired target of 35%, despite the GDD accumulation (Figure 2). Taking the plot average starch content and yield into consideration, this suggests that rain events prior to harvest had an impact on the moisture content of the stover portion of the plant while kernel development tracked better with GDD accumulation.

The N balance (Table 3) calculated at this location was significantly positive. The previous crop was an idle sod leading to the application of additional N out of concern that sod N credits would be less than an intensively managed sod. The positive balance suggests that N needs were largely met by the previous sod crop and additional N inputs were in excess of crop needs given the growing conditions experienced.

Alburgh

In direct contrast to 2021, this was the wettest location in 2022 based on monthly totals (Table 1) and seasonal totals (Table 2, Figure 3). Monthly GDD accumulation was moderately above average.

Despite the excess rainfall and resulting plant stress, particularly in June (Table 1 and Figure 1), the corn recovered and ended the year with strong yields; however, consistent with previous trends, above average rainfall had a negative effect on fiber digestibility, which will have implications for how this crop can be utilized in dairy diets.

Available N balances were the closest to zero of any location (Table 3), despite the excessive rainfall which can be associated with losses of N from the system. This, combined with strong yields, suggests that N was not limiting. A combination of a split N application, with a significant portion being applied as sidedress, thus avoiding some of the leaching potential of heavy June rainfall, and a field history conducive to improving soil health are likely factors in N availability. It should be noted that losses still may have occurred as total N inputs were on the high side of what the crop would demand, and it would be reasonable to expect a positive balance with these inputs under different growing conditions.

With both relative maturity groups planted at this location, harvest timing was split, with the first harvest taking place on September 12th and the second harvest taking place on September 21st

(Table 3). These locations took the greatest number of GDD to approach target whole plant DM (Figure 2), consistent with past observations of locations experiencing early season stress followed by better growing conditions later in the season require additional time to reach maturity targets.

Aurora

This location ended the season with rainfall totals slightly below average (Table 1) though there was a notable dry period beginning in late June and largely persisting through August with a few rain events which brought marginal relief (Figure 1). Despite these seemingly timely rains, the crop presented a general appearance of stress at harvest, and this is reflected in its yield performance. In contrast, the impact of these drier conditions is reflected in higher fiber digestibility values.

A significantly positive N balance (Table 3) indicates N rates exceeded crop uptake indicating that limited N was not a contributor to overall performance of the crop. A field history consisting of a row crop rotation with very few inputs to enhance soil health has been noted at this location previously and are likely drivers of the stressed appearance of the crop, despite adequate nutrient inputs and mid to late season relief of dry conditions.

Madrid

This region of NY State experienced a generally wet spring, which resulted in a brief window for planting of corn in early May followed by several weeks of wet conditions before planting was able to resume. This location benefited from adequate drainage and timely field operations which allowed for planting during the early May window (Table 3). While the location experienced some month-to-month variability (Table 1 and Figure 1) overall rainfall was above average for the season (Table 2 and Figure 3) and GDD accumulation was near normal.

A rescue herbicide application was applied in early June to address an outbreak of bindweed. The application was effective in controlling the weed; however, field visits following application presented evidence of dicamba injury in the form of deformed brace roots on the plants, which is a known problem based on a combination of corn stage of growth and air temperature at time of application. The injury was uniform across the entire plot area and in evaluating overall crop performance, it does not appear to have significantly impacted the crop.

The available N balance (Table 3) is of note at this location and represents a scenario that has become more common, both at this location and generally in dairy systems with a focus on soil health, where there were no signs of N deficiencies and yields were quite strong despite a negative available N balance. This reflects the ability of healthy soils, particularly those with a manure history, to supply N beyond current estimates and the ability of high yielding corn crops to utilize available N more efficiently (pounds of N per unit of yield) even when growing conditions present challenges to the crop.

Forage Quality and Yield

Individual hybrid results are presented in Tables 4 and 5 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 for the early-mid hybrids.

Figures 6 and 7 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). 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 (lbs/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). Hybrids that consistently performed above average across locations in both crop yield and PMY (Figures 6 and 7) is a strong indicator of performance.

It may not always be desirable to select a hybrid that falls into the second quadrant in Figures 6 and 7 (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 the cow consuming too much energy as a result of an increase in DMI. 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 evaluating 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. Table 6 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 hybrids 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.

Overall, 2022 was defined by geographic variability in growing conditions (Tables 1 & 2, Figures 1 & 3). This heightens the importance of reviewing the weather patterns at each location to understand the overall impact on crop performance (Tables 4 & 5 and Figures 6 & 7).

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/cropsoil) and disseminated widely across the region using multiple electronic and print publications.

ACKNOWLEDGEMENTS

We thank the seed companies that participated in 2022 for their collaboration. We urge all seed companies to participate in our corn silage testing program in 2023 so we can provide the best information under New York and Vermont growing conditions to our producers.

We thank Greenwood Dairy and Lamb Farms for their ongoing collaboration and support of the program; Paul Stachowski and Jeff Stayton at the Cornell Musgrave Research Farm, Aurora; Mike Davis, Adam Sayward and Delvin Meseck at the Willsboro Research Farm, Miner Institute and Roger Rainville at Borderview Farm for their efforts during field operations.

Additional financial support was provided by the Cornell University Agricultural Experiment Station.

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

Table 1a: NY & VT Corn Silage Trails, 80-95 RM, Weather Data

	Rainfall, inches						Growing Degree Days (GDD), 86/50					
	Alburgh, VT		Oakfield, NY		Willsboro, NY		Alburgh, VT		Oakfield, NY		Willsboro, NY	
	2022	Avg.*	**2022**	Avg.*	**2022**	Avg.*	**2022**	Avg.*	**2022**	Avg.*	**2022**	Avg.*
May	**3.82**	3.79	**2.71**	2.70	**2.62**	3.35	**396**	314	**365**	320	**401**	314
June	**9.26**	4.80	**2.62**	3.61	**4.14**	4.32	**440**	470	**486**	502	**462**	484
July	**3.67**	4.28	**3.22**	4.24	**3.50**	3.80	**616**	623	**643**	647	**652**	648
August	**5.95**	4.50	**2.81**	3.52	**4.47**	3.66	**613**	575	**648**	608	**664**	607
September	**4.46**	4.00	**3.14**	3.31	**5.23**	3.17	**341**	380	**401**	415	**371**	405
May-August	**22.70**	17.37	**11.36**	14.07	**14.73**	15.14	**2064**	1982	**2141**	2076	**2177**	2054
May-September	**27.16**	21.37	**14.50**	17.38	**19.96**	18.30	**2404**	2362	**2541**	2491	**2548**	2458

*Avg. - Represents averages of years: 2005-2022

Table 1b: NY & VT Corn Silage Trails, 96-110 RM, Weather Data

	Rainfall, inches						Growing Degree Days (GDD), 86/50					
	Alburgh, VT		Aurora, NY		Madrid, NY		Alburgh, VT		Aurora, NY		Madrid, NY	
	2022	Avg.*	**2022**	Avg.*	**2022**	Avg.*	**2022**	Avg.*	**2022**	Avg.*	**2022**	Avg.*
May	**3.82**	3.79	**3.09**	3.20	**5.56**	3.28	**396**	314	**370**	328	**363**	301
June	**9.26**	4.80	**3.23**	3.81	**3.88**	4.17	**440**	470	**461**	495	**432**	472
July	**3.67**	4.28	**2.07**	3.88	**6.08**	4.56	**616**	623	**632**	646	**589**	612
August	**5.95**	4.50	**4.94**	3.93	**3.39**	4.01	**613**	575	**634**	605	**600**	572
September	**4.46**	4.00	**5.71**	3.56	**3.16**	3.64	**341**	380	**380**	410	**342**	376
May-August	**22.70**	17.37	**13.33**	14.82	**18.91**	16.02	**2064**	1982	**2097**	2075	**1983**	1956
May-September	**27.16**	21.37	**19.04**	18.38	**22.07**	19.66	**2404**	2362	**2477**	2485	**2324**	2332

*Avg. - Represents averages of years: 2005-2022

Table 2: Precipitation and growing degree day (GDD) accumulation from planting date to harvest date.

Location	Seasonal Precipitation	Seasonal GDD (86/50)	Planting Date	Harvest Date
Madrid, NY	18.9	2150	10-May	15-Sep
Aurora, NY	14.6	2132	13-May	8-Sep
Alburgh, VT	25.2	2278	10-May	21-Sep
Willsboro, NY	14.6	2105	13-May	3-Sep
Oakfield, NY	9.8	2041	11-May	29-Aug
Alburgh, VT	22.6	2131	13-May	12-Sep

Table 3: NY & VT Corn Silage Hybrid Evaluation Program, 2021 Field Data.

	80 - 95 Day Relative Maturity			96 - 110 Day Relative Maturity		
	Alburgh, VT	Oakfield, NY	Willsboro, NY	Alburgh, VT	Aurora, NY	Madrid, NY
Planting Date	13-May	11-May	13-May	10-May	13-May	10-May
Harvest Date	12-Sep	29-Aug	2-Sep	21-Sep	8-Sep	15-Sep
Previous Crop	Small Grain	Corn	Sod	Small Grain	Soybeans	Corn
Starter N	45	32	15	45	30	32
Manure N Credits	0	114	0	0	0	139
Sidedress N	138	52	130	138	100	0
Total N Inputs	183	198	145	183	130	171
Available N Balance[1]	-6	80	42	3	54	-23
Soil Type	Amenia	Ontario	Stafford	Amenia	Lima	Swanton

[1] Available N Balance = N Uptake by Crop - Available N Supply

A positive balance indicates there was excess N not utlized 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.

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

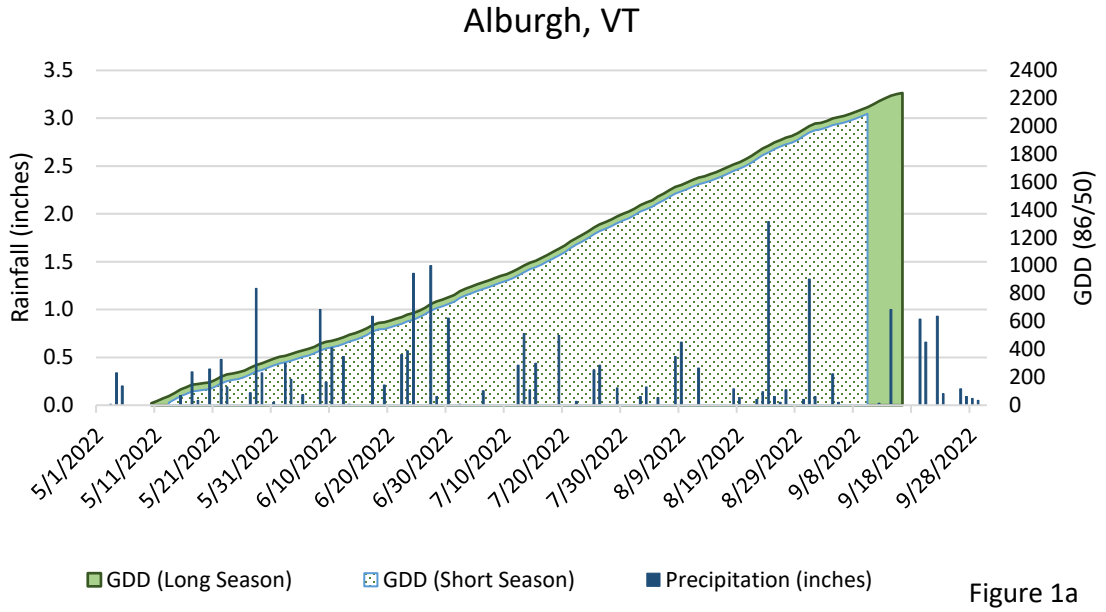


Figure 1a

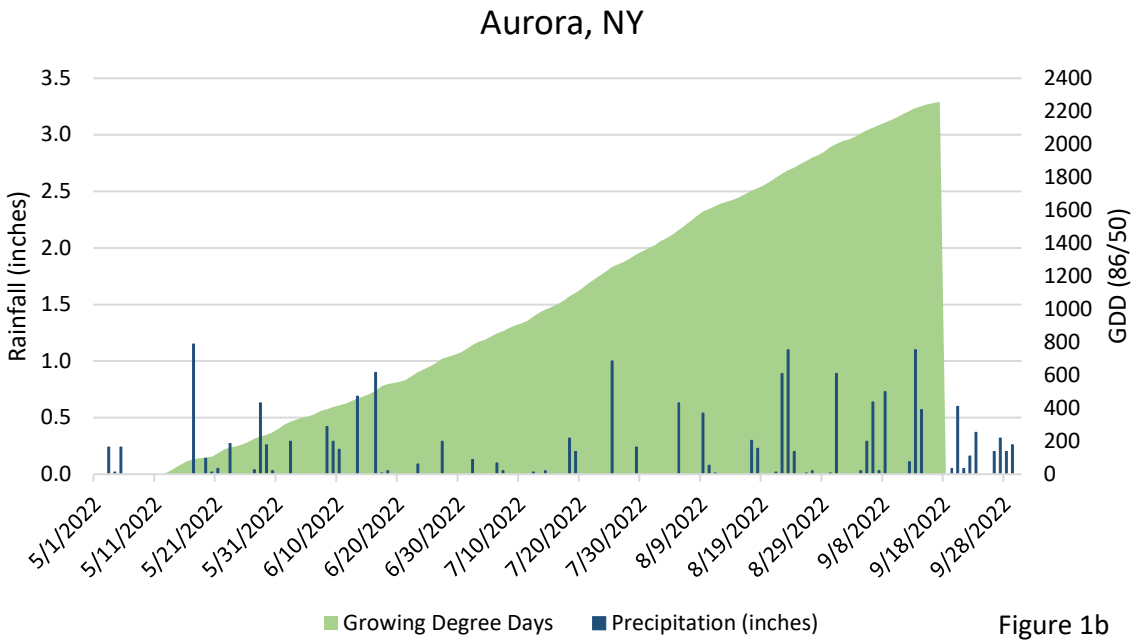


Figure 1b

Figure 1 (cont.)

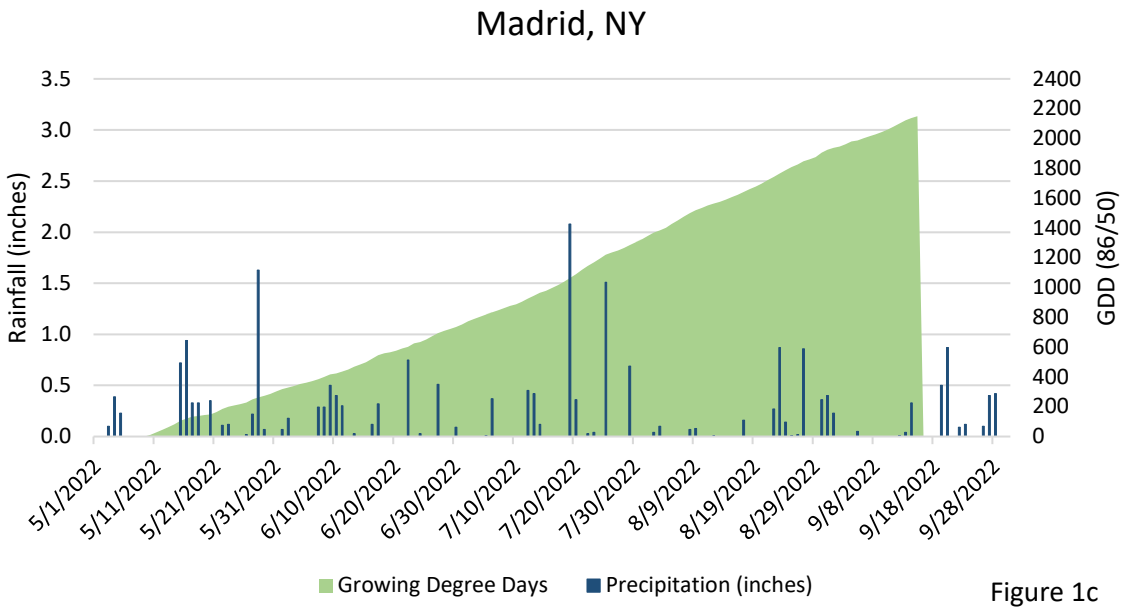


Figure 1c

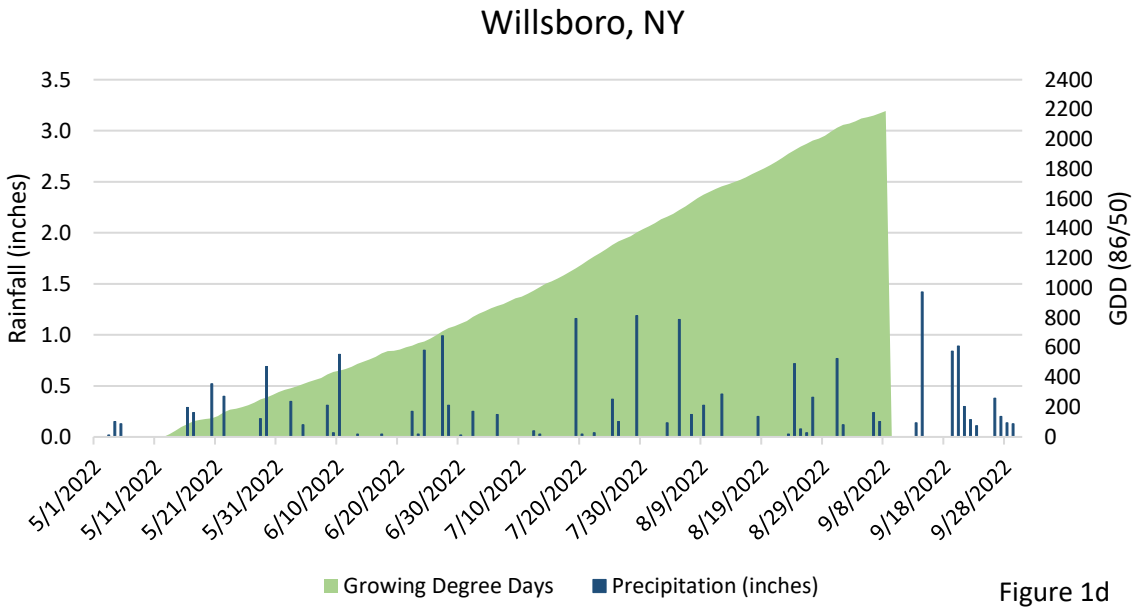


Figure 1d

Figure 1 (cont.)

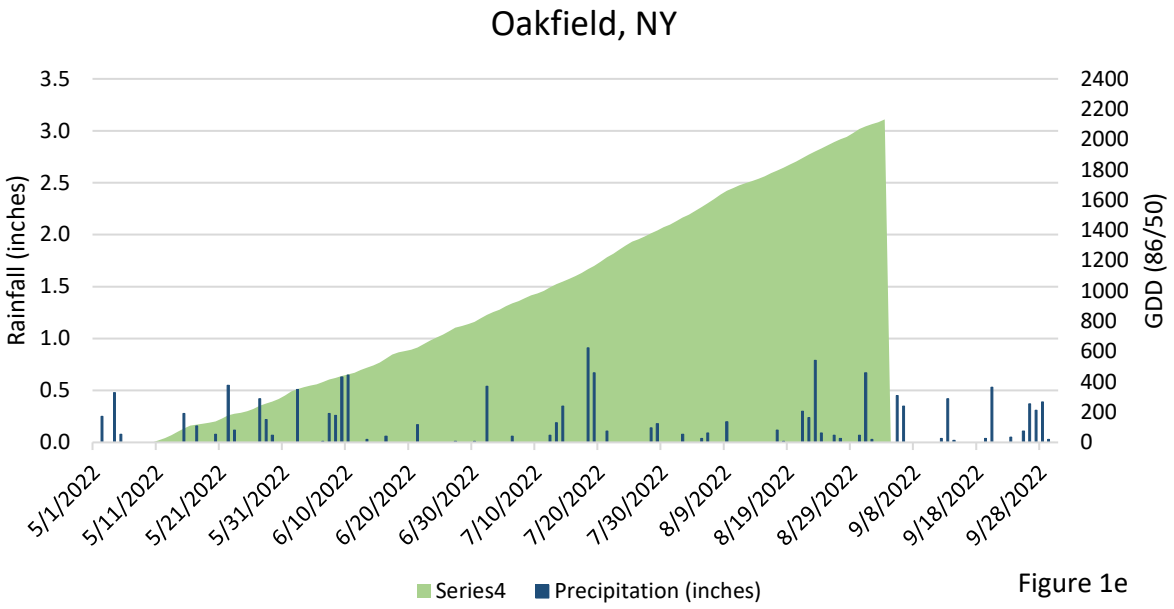
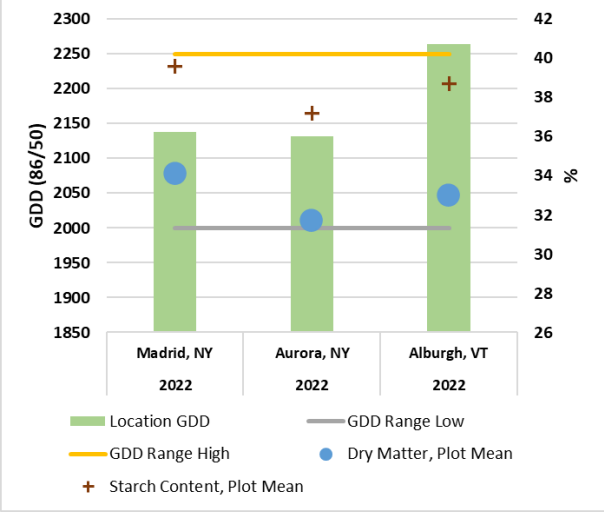


Figure 1e

Figure 2. Contrast of growing degree day (GDD) accumulation from planting to harvest with the overall average whole plant DM (%) and Starch Content (%) for all hybrids grown at a given location.



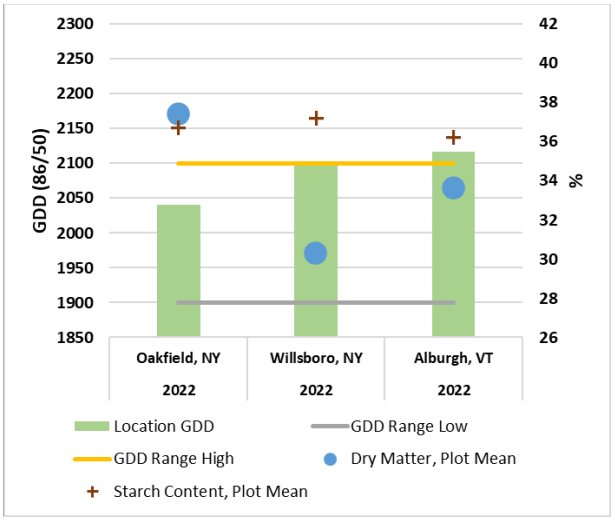


Figure 3: Summary of precipitation and growing degree day (GDD) data (Figure 3a and 3b, respectively) for 2022 in comparison to previous growing seasons.

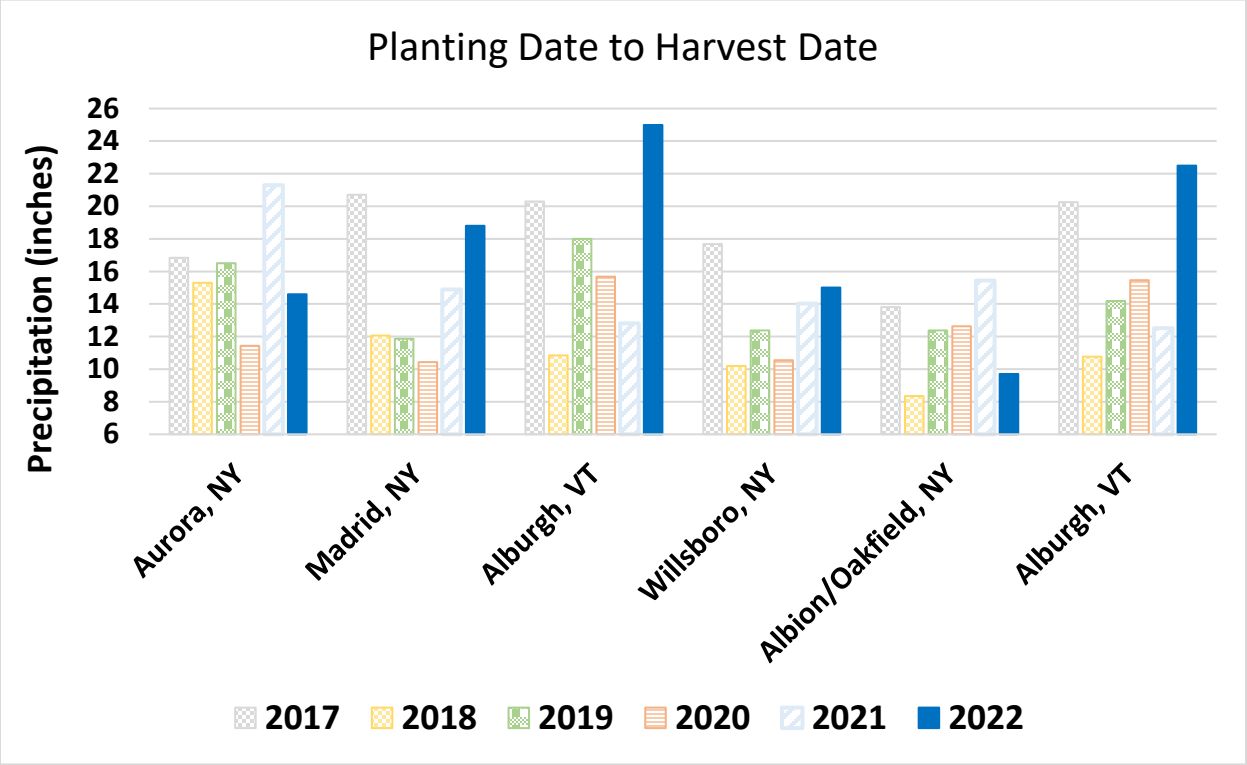


Figure 3a

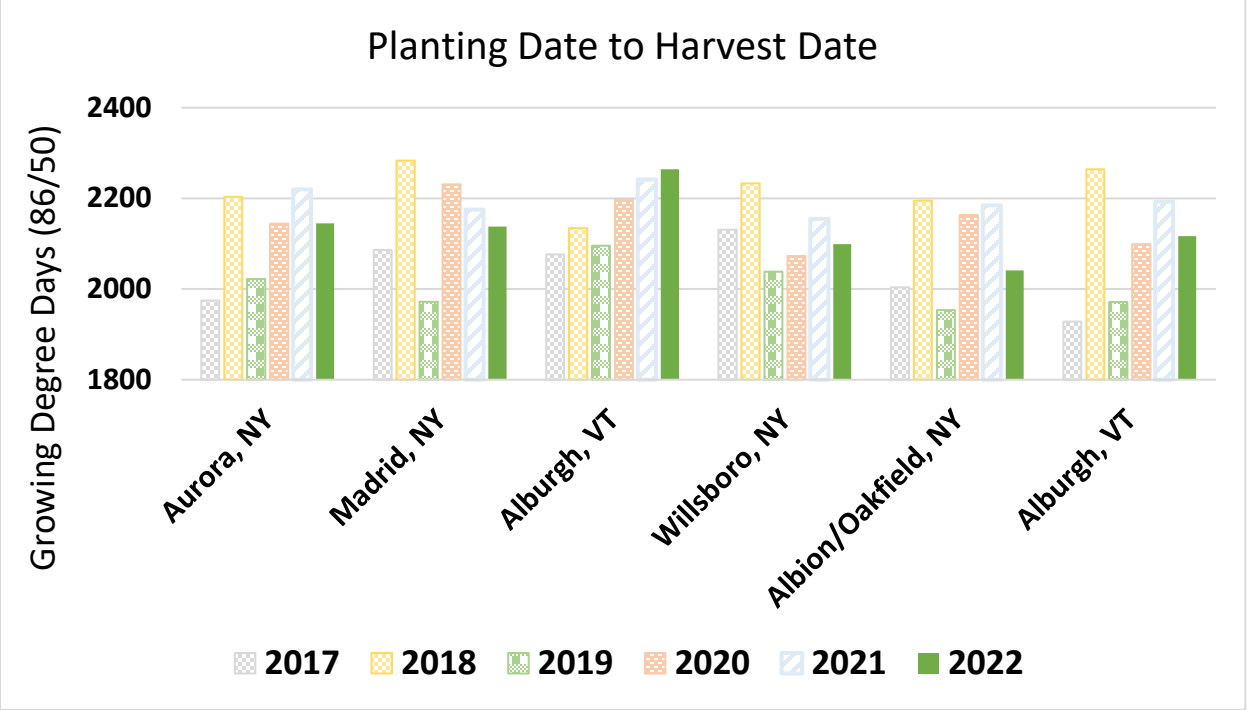


Figure 3b

Figure 4: The proportion of samples within different ranges of uNDF240 (Figure 4a) and starch (Figure 4b) combined across locations for the current year and previous growing seasons.

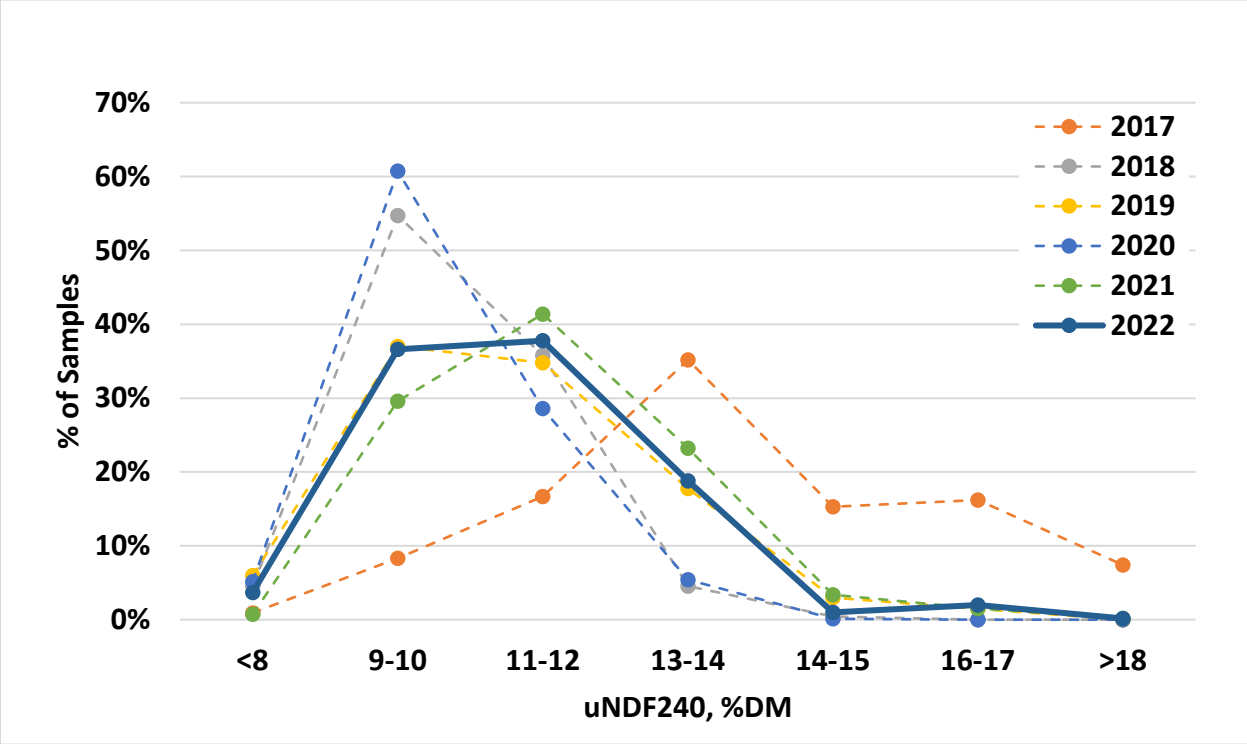


Figure 4a

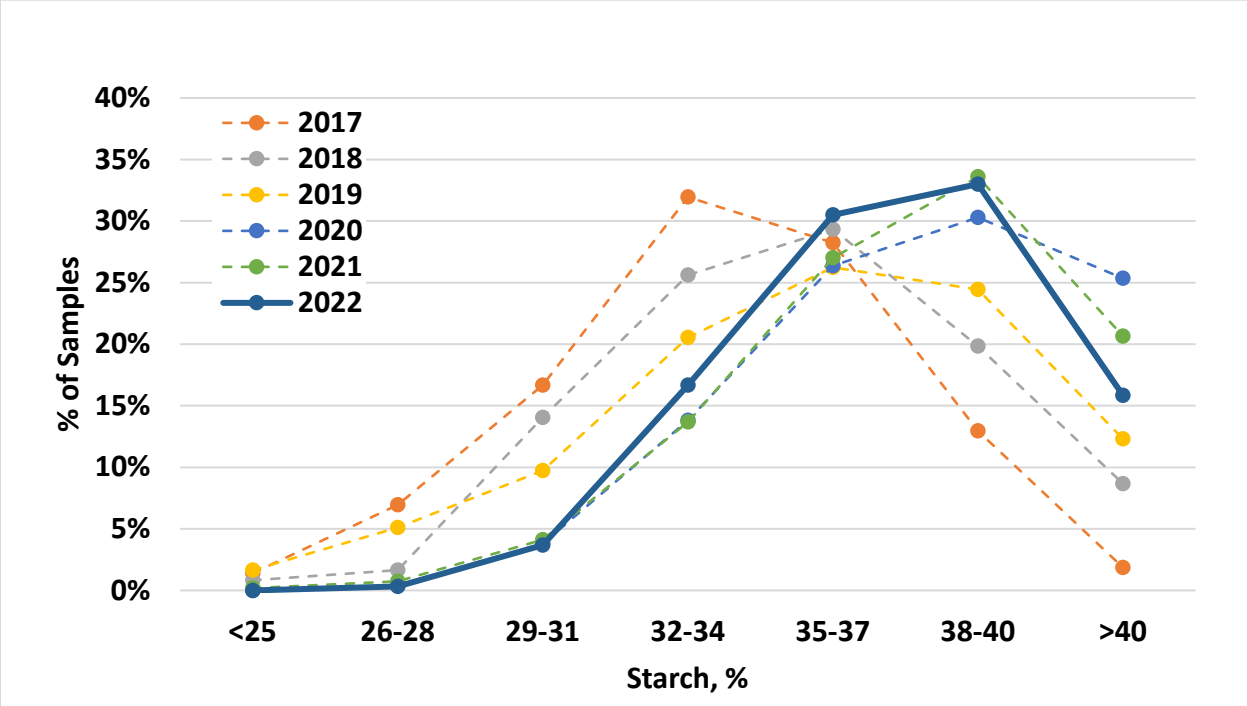


Figure 4b

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Table 4:

Hybrid field and forage quality data for 80–95-day relative maturity (RM) hybrids planted at Oakfield, NY (4a), Willsboro, NY (4b) and Alburgh, VT (4c). Hybrids are sorted by dry matter content at harvest.

Table 5.

Hybrid field and forage quality data for 96–110-day relative maturity (RM) hybrids planted at Alburgh, VT (5a), Madrid, NY (5b), Aurora, NY (5c). Hybrids are sorted by dry matter content at harvest.

Tables 4 & 5: 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 4 and 5.

* 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

† See Table 7: Trait Key

Table 4a: Hybrid traits and performance for 80 – 95-day RM groups at Oakfield, NY.

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
Seedway	SW 9035SS	90	33,179	37.7	19.1	36.1	7.8	2.6	1.24	41.5	41.5	.	.	62.2	70.8	73.9	9.9	4.1	103.0	28.6
Brevant Seeds	B90R92Q	90	33,011	37.7	19.6	38.5	8.2	2.6	1.25	41.2	41.2	36.9	61.0	60.4	69.9	72.9	10.0	4.1	104.0	28.7
Redtail King's Agriseeds	RT 38T89-D1	88	33,011	38.0	21.0	37.6	8.2	2.8	1.31	37.9	37.9	.	.	55.9	64.0	67.0	12.4	3.5	83.2	25.0
Growmark, Inc	FS 4095X RIB	90	34,017	38.2	22.5	37.1	7.9	2.6	1.24	40.2	40.2	.	.	60.7	66.6	69.5	11.2	4.0	96.5	27.2
CNI	Integra 3718	87	32,509	39.3	20.9	37.0	8.2	2.8	1.29	40.7	40.7	.	.	59.5	68.1	71.1	11.1	3.8	96.2	27.5
Pioneer Seed	P9193Q	90	34,687	39.3	19.5	39.9	8.4	2.5	1.32	41.1	41.1	.	.	60.6	68.9	71.9	9.7	4.4	108.8	29.7
Seed Consultants, Inc.	SC893AM	89	35,357	39.8	20.4	39.0	7.8	2.8	1.33	38.9	38.9	.	.	56.5	65.4	68.2	11.4	3.8	92.6	26.7
Revere Seed	8607 DV	86	33,514	41.0	19.1	36.2	8.3	2.9	1.31	39.9	39.9	.	.	58.5	68.5	71.6	10.9	3.7	95.5	27.3
Seed Consultants, Inc.	SC901Q	90	35,693	41.5	20.9	41.6	8.1	2.4	1.28	42.6	42.6	.	.	61.0	71.1	74.1	8.8	4.7	114.2	30.7
Dekalb	DKC39-54RIB	89	30,889	42.1	21.4	38.2	7.8	2.9	1.35	39.5	39.5	.	.	60.0	69.0	71.9	10.9	4.0	97.5	27.6
		RM Mean	**33,587**	**39.5**	**20.4**	**38.1**	**8.1**	**2.7**	**1.29**	**40.4**	**40.4**	**36.9**	**61.0**	**59.5**	**68.2**	**71.2**	**10.6**	**4.0**	**99.1**	**27.9**
Revere Seed	9598 DV	95	35,190	33.2	19.4	30.6	8.4	2.8	1.07	39.7	39.8	.	.	59.3	67.0	69.9	12.0	3.3	89.1	26.1
Redtail King's Agriseeds	RT 43T48	93	34,687	34.8	21.1	32.5	8.7	2.8	1.27	39.5	39.9	.	.	58.9	66.3	69.2	12.3	3.4	86.8	25.6
Channel	195-51STXRIB	95	31,503	34.9	21.2	36.3	8.5	2.5	1.25	42.4	36.6	.	.	62.4	70.4	73.5	9.7	4.2	108.9	29.8
Redtail King's Agriseeds	RT 45T09-D2	95	32,341	34.9	21.2	35.0	8.2	2.6	1.30	39.7	37.2	.	.	59.7	68.6	72.2	10.3	3.8	99.0	27.9
Dekalb	DKC45-07RIB	95	33,793	35.1	20.9	36.4	8.5	2.4	1.20	42.9	37.2	.	.	64.0	72.4	75.4	9.1	4.4	115.8	31.1
Dekalb	DKC42-04RIB	92	31,838	35.2	20.8	36.4	8.0	2.8	1.26	39.9	37.6	.	.	58.3	66.6	69.5	11.6	3.7	91.9	26.6
Seedway	SW 9550SS	95	34,743	35.7	23.8	36.1	8.2	2.9	1.21	39.5	39.1	.	.	58.5	66.8	69.9	11.8	3.6	88.7	26.0
Dekalb	DKC45-74RIB	95	32,341	36.0	23.6	38.8	8.2	2.4	1.26	43.3	34.9	.	.	62.0	71.3	74.4	9.0	4.5	112.4	30.3
Channel	193-91STXRIB	93	34,129	36.2	20.1	37.6	8.5	2.3	1.29	42.6	36.0	.	.	64.5	72.1	75.3	8.9	4.6	115.9	31.2
Growmark, Inc	FS 4303X RIB	93	35,022	36.5	20.7	34.8	8.5	2.6	1.26	43.2	39.1	.	.	63.7	73.4	76.5	9.2	4.1	108.5	29.7
Seedway	SW 9333SS	93	33,514	36.5	21.1	34.7	8.4	2.6	1.24	42.5	38.8	.	.	64.1	73.2	76.5	9.2	4.2	110.0	30.1
CNI	Integra 4509	95	32,509	36.6	23.5	38.2	7.6	2.6	1.27	41.0	36.0	.	.	59.5	67.2	70.2	10.7	4.0	100.6	28.0
CNI	Integra STP4128	91	33,179	37.1	20.2	32.4	8.3	2.9	1.31	40.0	41.3	.	.	59.7	68.3	71.7	11.7	3.4	86.8	25.8
Brevant Seeds	B91K05Q	91	34,520	37.7	20.6	38.4	8.5	2.5	1.21	42.3	36.2	36.2	61.7	61.6	73.0	76.0	8.7	4.3	111.6	30.3
Hubner Seed	H4061RC2P	91	35,190	38.3	22.6	37.3	7.8	2.7	1.20	41.1	38.5	.	.	60.6	68.6	71.5	11.0	3.9	97.8	27.6
Revere Seed	9108 VT2PRIB	91	33,011	38.4	21.2	38.4	8.1	2.6	1.19	41.1	36.8	.	.	61.8	70.3	73.4	9.8	4.3	106.4	29.2
		RM Mean	**33,594**	**36.1**	**21.4**	**35.9**	**8.3**	**2.6**	**1.24**	**41.3**	**37.8**	**36.2**	**61.7**	**61.2**	**69.7**	**72.8**	**10.3**	**4.0**	**101.9**	**28.5**
	Overall LSD (0.10)		**2,435**	**2.3**	**NS**[2]	**4.3**	**NS**	**0.3**	**NS**	**2.0**	**NS**	**–**	**–**	**3.4**	**4.4**	**4.4**	**2.1**	**0.7**	**17.9**	**3.2**
	Overall Mean		**33,591**	**37.4**	**21.0**	**36.7**	**8.2**	**2.7**	**1.26**	**40.9**	**38.8**	**36.5**	**61.4**	**60.5**	**69.1**	**72.2**	**10.4**	**4.0**	**100.8**	**28.2**

Table 4b: Hybrid traits and performance for 80 – 95-day RM groups at Willsboro, NY.

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 Agriseeds	RT 38T89-D1	88	33,508	29.0	27.2	37.5	8.4	2.8	1.18	34.4	35.9	.	.	58.0	64.5	67.3	11.8	3.7	91.1	26.0
Brevant Seeds	B90R92Q	90	32,912	29.4	25.2	35.3	8.4	3.0	1.07	37.2	38.8	37.4	54.6	57.9	68.6	71.5	11.1	3.5	93.1	26.8
Seed Consultants, Inc.	SC893AM	89	32,763	29.7	27.1	36.7	8.2	2.7	1.11	34.9	34.7	.	.	58.2	65.4	68.2	11.0	3.7	97.9	27.3
Seedway	SW 9035SS	90	34,401	30.4	24.2	37.4	8.4	2.7	1.19	36.2	35.5	.	.	59.9	66.5	69.2	10.9	4.0	99.4	27.7
Pioneer Seed	P9193Q	90	32,912	30.7	28.4	39.2	8.4	2.5	1.22	36.4	32.6	.	.	62.0	69.2	72.1	9.1	4.5	115.7	31.0
CNI	Integra 3718	87	33,954	30.8	23.9	37.1	8.2	2.7	1.15	37.2	36.8	.	.	60.5	67.6	70.5	10.9	4.0	100.0	27.8
Growmark, Inc	FS 4095X RIB	90	33,508	31.2	27.1	37.6	8.3	2.7	1.12	36.9	35.1	.	.	60.7	67.4	70.4	10.4	4.0	105.1	28.8
Seed Consultants, Inc.	SC901Q	90	33,359	31.6	25.4	39.9	8.0	2.6	1.18	36.6	34.2	.	.	59.9	67.3	70.1	10.2	4.2	106.0	29.0
Revere Seed	8607 DV	86	32,912	31.6	24.0	35.0	9.0	2.7	1.11	37.2	36.0	.	.	60.7	67.1	70.1	10.8	3.8	100.6	28.0
Dekalb	DKC39-54RIB	89	33,359	33.1	24.8	39.1	8.4	2.7	1.28	38.0	35.2	.	.	59.8	66.9	69.9	10.6	4.2	100.1	27.8
		RM Mean	**33,359**	**30.8**	**25.7**	**37.5**	**8.4**	**2.7**	**1.16**	**36.5**	**35.5**	**37.4**	**54.6**	**59.8**	**67.0**	**69.9**	**10.7**	**4.0**	**100.9**	**28.0**
Revere Seed	9598 DV	95	33,657	27.8	25.9	34.6	8.9	2.5	1.12	35.7	34.9	.	.	62.4	68.3	71.3	10.0	4.0	110.0	29.8
Redtail King's Agriseeds	RT 45T09-D2	95	33,210	28.1	26.1	34.4	8.7	2.6	1.12	34.5	35.7	.	.	60.9	66.8	69.7	10.8	3.8	101.5	28.0
Channel	195-51STXRIB	95	33,061	28.6	25.7	37.0	8.7	2.4	1.06	36.7	34.2	.	.	62.6	70.1	73.1	9.2	4.2	114.4	30.7
Redtail King's Agriseeds	RT 43T48	93	33,806	29.3	26.5	33.8	8.6	2.9	1.16	34.6	37.9	.	.	59.2	67.2	70.1	11.3	3.5	92.7	26.5
CNI	Integra STP4128	91	31,125	29.6	26.7	37.0	9.1	2.6	1.23	36.5	34.7	.	.	60.8	68.2	71.1	10.0	4.1	106.5	29.2
Dekalb	DKC45-74RIB	95	33,954	29.7	29.2	35.4	8.3	2.7	1.07	36.1	37.0	.	.	61.1	68.3	71.2	10.7	3.8	102.0	28.3
Growmark, Inc	FS 4303X RIB	93	33,806	30.0	24.3	36.1	8.5	2.7	1.20	36.9	36.9	.	.	60.1	67.0	70.0	11.1	3.8	97.8	27.4
CNI	Integra 4509	95	32,167	30.1	25.2	37.0	8.6	2.4	1.18	38.1	34.4	.	.	63.6	71.4	74.4	8.8	4.4	116.8	31.2
Dekalb	DKC45-07RIB	95	33,954	30.3	23.8	36.2	8.8	2.4	1.13	36.5	35.3	.	.	64.4	70.8	73.8	9.2	4.3	115.4	31.0
Channel	193-91STXRIB	93	33,359	30.5	26.3	39.1	8.6	2.4	1.25	37.8	33.9	.	.	61.9	69.1	72.1	9.5	4.5	112.2	30.3
Seedway	SW 9333SS	93	32,912	30.5	24.9	37.9	8.6	2.4	1.20	38.5	34.4	.	.	61.6	70.0	72.9	9.3	4.2	110.5	30.0
Seedway	SW 9550SS	95	33,657	30.5	28.1	37.6	8.6	2.6	1.14	35.3	35.0	.	.	59.6	66.6	69.4	10.8	3.9	100.8	27.9
Brevant Seeds	B91K05Q	91	33,508	30.9	25.0	40.3	8.1	2.6	1.16	39.8	36.8	36.9	58.4	60.4	71.1	74.1	9.5	4.2	105.9	29.1
Hubner Seed	H4061RC2P	91	32,316	31.2	26.4	37.9	8.6	2.6	1.13	37.4	34.6	.	.	60.9	67.4	70.3	10.3	4.2	106.8	29.2
Dekalb	DKC42-04RIB	92	33,508	31.3	25.4	38.3	8.2	2.7	1.09	36.2	36.1	.	.	60.2	67.9	70.8	10.5	3.9	103.1	28.4
Revere Seed	9108 VT2PRIB	91	34,103	32.3	26.2	39.1	8.3	2.7	1.15	37.5	34.2	.	.	58.3	65.3	68.2	10.9	4.1	98.1	27.3
		RM Mean	**33,256**	**30.0**	**26.0**	**37.0**	**8.6**	**2.6**	**1.15**	**36.7**	**35.4**	**36.9**	**58.4**	**61.1**	**68.5**	**71.4**	**10.1**	**4.1**	**105.9**	**29.0**
	Overall LSD (0.10)		**NS[2]**	**1.0**	**2.3**	**2.8**	**0.4**	**0.2**	**NS**	**1.9**	**2.4**	**–**	**–**	**1.8**	**2.7**	**2.8**	**1.2**	**0.4**	**10.1**	**1.9**
	Overall Mean		**33,296**	**30.3**	**25.9**	**37.2**	**8.5**	**2.6**	**1.15**	**36.6**	**35.4**	**37.2**	**56.5**	**60.6**	**67.9**	**70.8**	**10.3**	**4.0**	**104.0**	**28.6**

Table 4c: Hybrid traits and performance for 80 – 95-day RM groups at Alburgh, VT.

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
CNI	Integra 3718	87	30,519	31.7	27.1	33.3	7.9	3.2	1.07	36.8	38.2	.	.	54.1	65.8	68.6	12.0	3.0	82.3	25.3
Redtail King's Agriseeds	RT 38T89-D1	88	29,954	31.9	30.4	34.4	8.3	3.2	1.16	36.8	38.4	.	.	55.0	66.3	69.3	11.8	3.1	84.7	25.6
Brevant Seeds	B90R92Q	90	30,578	32.6	26.2	37.3	8.2	3.1	1.16	35.6	35.2	34.0	53.0	53.3	65.7	68.4	11.2	3.3	88.2	26.0
Growmark, Inc	FS 4095X RIB	90	31,492	33.2	27.4	38.1	8.4	2.9	1.25	37.6	34.6	.	.	56.9	67.5	70.4	10.3	3.8	99.7	28.2
Seed Consultants, Inc.	SC893AM	89	30,782	33.7	27.5	33.6	7.6	3.2	1.09	34.6	37.5	.	.	55.1	64.9	67.6	12.2	3.0	80.8	24.9
Pioneer Seed	P9193Q	90	31,218	33.8	28.5	37.1	8.0	3.1	1.20	36.6	35.3	.	.	54.4	65.1	67.9	11.3	3.4	91.0	26.4
Seed Consultants, Inc.	SC901Q	90	31,654	34.3	29.9	40.6	8.1	2.8	1.19	37.5	33.7	.	.	56.2	67.8	70.9	9.8	3.9	101.9	28.3
Seedway	SW 9035SS	90	30,390	35.0	28.5	33.9	7.8	3.3	1.14	36.8	39.0	.	.	54.6	65.4	68.1	12.4	3.1	80.6	25.0
Revere Seed	8607 DV	86	29,410	36.5	27.2	34.8	9.0	3.1	1.30	38.1	36.8	.	.	55.7	64.6	67.4	12.0	3.4	86.8	25.7
Dekalb	DKC39-54RIB	89	29,664	38.8	27.3	38.8	8.1	3.1	1.36	36.0	35.2	.	.	55.4	64.4	67.4	11.5	3.7	90.4	26.2
		RM Mean	**30,566**	**34.1**	**28.0**	**36.2**	**8.1**	**3.1**	**1.19**	**36.7**	**36.4**	**34.0**	**53.0**	**55.1**	**65.8**	**68.6**	**11.4**	**3.4**	**88.6**	**26.1**
Redtail King's Agriseeds	RT 45T09-D2	95	29,793	29.7	25.8	34.9	8.7	3.2	1.19	35.4	35.9	.	.	52.7	62.3	65.1	12.5	3.1	79.5	24.3
Revere Seed	9598 DV	95	31,868	30.9	29.1	34.9	8.4	3.0	1.16	37.4	36.6	.	.	57.8	68.3	71.1	10.6	3.5	96.7	27.7
Redtail King's Agriseeds	RT 43T48	93	29,766	31.6	27.1	33.1	8.6	3.3	1.14	37.0	38.5	.	.	54.0	63.7	66.6	12.9	3.0	77.6	24.1
Channel	195-51STXRIB	95	30,621	31.6	26.2	34.8	8.5	2.9	1.19	39.3	36.4	.	.	58.8	69.0	71.9	10.3	3.7	99.8	28.2
CNI	Integra STP4128	91	29,948	32.7	25.8	33.7	8.9	3.0	1.14	36.9	37.1	.	.	57.5	69.9	72.8	10.2	3.4	96.7	27.7
CNI	Integra 4509	95	29,954	33.2	28.5	38.7	7.5	2.9	1.20	38.6	35.0	.	.	57.1	69.2	72.2	9.8	3.8	101.4	28.3
Seedway	SW 9550SS	95	31,304	33.3	29.0	36.3	8.0	3.1	1.18	36.8	36.7	.	.	54.3	65.2	68.4	11.6	3.3	85.1	25.5
Seedway	SW 9333SS	93	30,390	33.4	27.3	35.6	8.2	2.9	1.22	38.8	36.6	.	.	57.7	66.3	69.7	11.1	3.6	94.4	27.2
Growmark, Inc	FS 4303X RIB	93	30,202	33.5	24.1	36.6	7.8	3.2	1.31	37.9	37.1	.	.	52.8	62.4	65.3	12.9	3.2	75.3	23.9
Dekalb	DKC45-07RIB	95	31,782	33.6	26.9	36.1	8.1	3.0	1.19	35.6	36.0	.	.	57.3	66.9	69.6	10.9	3.4	94.3	27.1
Dekalb	DKC45-74RIB	95	30,928	33.9	29.2	35.9	8.0	2.8	1.18	37.2	35.9	.	.	59.5	69.4	72.4	9.9	3.7	102.5	28.7
Revere Seed	9108 VT2PRIB	91	30,099	34.3	29.0	36.7	8.1	2.9	1.10	38.2	34.9	.	.	56.4	67.4	70.4	10.4	3.6	97.4	27.7
Channel	193-91STXRIB	93	29,707	34.6	30.7	36.2	7.9	2.7	1.25	39.3	36.6	.	.	61.1	70.7	73.9	9.5	4.0	104.9	29.2
Hubner Seed	H4061RC2P	91	30,492	34.7	26.9	36.5	8.1	3.2	1.15	36.6	36.8	.	.	53.9	63.2	66.1	12.5	3.3	79.7	24.6
Brevant Seeds	B91K05Q	91	31,099	35.2	27.8	39.6	8.0	2.8	1.18	36.0	33.0	33.0	55.8	55.7	67.1	70.1	9.9	3.8	100.8	28.0
Dekalb	DKC42-04RIB	92	30,604	35.7	30.5	38.8	7.8	3.0	1.22	36.7	34.8	.	.	54.3	65.3	68.0	11.1	3.6	92.8	26.8
		RM Mean	**30,535**	**33.2**	**27.7**	**36.1**	**8.2**	**3.0**	**1.19**	**37.4**	**36.1**	**33.0**	**55.8**	**56.3**	**66.7**	**69.6**	**11.0**	**3.5**	**92.4**	**26.8**
	Overall LSD (0.10)		**NS[2]**	**2.0**	**NS**	**NS**	**0.5**	**0.3**	**NS**	**2.1**	**NS**	**–**	**–**	**4.0**	**NS**	**NS**	**NS**	**0.5**	**NS**	**NS**
	Overall Mean		**30,547**	**33.6**	**27.8**	**36.2**	**8.2**	**3.0**	**1.19**	**37.1**	**36.2**	**33.5**	**54.4**	**55.8**	**66.3**	**69.2**	**11.2**	**3.4**	**91.0**	**26.6**

Table 5a: Hybrid traits and performance for 96–110-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
Brevant Seeds	B02V87AMXT	102	30,604	30.9	27.2	41.0	8.4	3.2	1.40	35.9	35.4	35.2	58.2	54.0	62.1	65.5	12.2	3.6	83.4	24.9
Revere Seed	9827 SSXRIB	98	30,426	31.0	24.8	32.7	8.1	3.7	1.36	33.5	41.4	.	.	48.4	58.0	61.7	15.9	2.4	52.3	19.7
Seed Consultants, Inc.	SC1018AM	101	29,878	31.2	28.7	40.6	7.8	3.0	1.47	37.4	36.3	.	.	55.5	64.8	67.6	11.7	3.7	89.2	26.1
Pioneer Seed	P0035Q	100	32,815	31.6	27.8	37.1	8.3	3.1	1.29	37.4	37.5	.	.	55.3	65.4	68.2	12.0	3.4	82.5	25.2
Growmark, Inc	FS 5101X RIB	101	30,868	31.9	27.5	36.5	7.8	3.3	1.44	34.8	37.1	.	.	51.4	60.2	63.4	13.5	3.0	68.6	22.6
Syngenta Seeds	NK9874-3220	98	30,314	32.2	24.7	34.1	8.2	3.3	1.26	35.0	38.5	.	.	52.3	61.1	64.4	13.7	2.9	69.2	22.7
Channel	201-07SSPRIB	101	29,647	32.2	26.4	39.9	8.3	3.1	1.44	35.3	34.7	.	.	52.5	60.1	63.9	12.6	3.5	78.7	24.1
Syngenta Seeds	NK9922-5222	99	30,136	32.3	28.2	37.6	8.4	2.9	1.40	36.4	36.2	.	.	54.7	62.5	65.7	12.4	3.4	82.6	24.7
Revere Seed	9796 V	97	29,997	33.1	27.0	39.8	7.9	3.5	1.54	31.3	35.6	.	.	45.9	52.6	55.8	15.7	2.9	51.9	19.2
Seedway	SW 0030SS	100	30,680	33.1	28.5	38.8	7.7	3.2	1.41	34.1	35.0	.	.	52.4	60.8	64.4	12.5	3.4	78.7	24.2
Hubner Seed	H6107RCSS	97	31,416	33.2	27.5	38.6	8.1	3.2	1.42	35.4	35.4	.	.	52.0	59.9	62.6	13.2	3.3	72.5	23.0
Brevant Seeds	B97T04SXE	97	29,647	33.2	27.3	38.1	8.0	3.4	1.43	32.0	37.6	37.8	53.4	49.3	57.3	61.1	14.7	3.0	62.8	21.2
Seedway	SW 9726TR	97	29,895	33.3	27.0	37.1	7.8	3.5	1.45	32.7	39.3	.	.	47.9	57.4	60.5	15.6	2.7	54.7	20.1
Growmark, Inc	FS 5115X RIB	101	29,809	33.3	27.6	40.4	8.2	3.0	1.50	36.5	35.4	.	.	54.4	62.2	66.5	11.9	3.6	86.7	25.5
Dekalb	DKC48-34RIB	98	29,476	33.4	25.3	35.6	7.8	3.3	1.34	35.5	38.5	.	.	52.5	62.0	64.9	13.5	3.0	69.9	22.9
Growmark, Inc	FS 4927T RIB	99	30,954	33.4	27.5	36.2	7.8	3.6	1.37	33.1	39.9	.	.	47.9	57.9	61.6	15.4	2.7	56.9	20.4
Hubner Seed	H6134RCSS	96	30,723	33.5	27.9	37.2	8.0	3.2	1.44	36.1	37.0	.	.	53.3	61.9	64.8	13.0	3.2	74.2	23.6
Hubner Seed	H6225RCSS	102	31,116	33.9	27.9	39.6	7.9	3.2	1.49	34.3	35.9	.	.	52.2	60.4	64.0	12.9	3.4	75.2	23.6
Seed Consultants, Inc.	SC1003AM	100	30,750	34.1	27.3	39.7	8.0	3.1	1.29	34.7	34.9	.	.	52.1	59.6	62.9	13.0	3.4	75.4	23.4
Dyna-Gro Seed	D40VC41	100	30,492	34.3	24.4	41.2	7.3	3.0	1.41	35.1	34.6	34.8	55.7	53.4	62.0	65.9	11.8	3.6	85.9	25.4
CNI	Integra 4601	96	31,928	34.9	28.3	37.1	8.0	3.4	1.30	34.7	38.2	.	.	51.8	61.9	64.7	13.5	3.1	71.5	23.1
Dekalb	DKC50-87RIB	100	30,357	34.9	26.0	39.8	7.8	3.4	1.46	32.4	36.6	.	.	50.7	58.5	61.7	14.1	3.2	66.7	21.9
Seed Consultants, Inc.	SC973AM	97	31,987	35.1	25.8	41.8	8.2	3.0	1.50	36.5	33.7	.	.	52.3	60.2	63.6	12.3	3.7	81.8	24.4
Revere Seed	9916 VT2PRIB	99	30,637	35.4	24.6	40.0	6.9	3.2	1.49	35.7	37.2	.	.	51.7	60.3	64.2	13.3	3.2	71.0	23.1
Channel	200-42VT2PRIB	100	31,330	37.1	28.3	41.1	7.9	3.1	1.38	35.0	36.3	.	.	53.2	60.9	64.6	12.8	3.5	77.3	23.8
		RM Mean	**30,635**	**33.3**	**26.9**	**38.5**	**7.9**	**3.2**	**1.41**	**34.8**	**36.7**	**36.0**	**55.7**	**51.9**	**60.4**	**63.8**	**13.3**	**3.2**	**72.8**	**23.1**
	Overall LSD (0.10)		**1,670**	**2.3**	**NS2**	**4.2**	**0.5**	**0.3**	**0.15**	**2.1**	**3.4**	**NS**	**2.8**	**2.9**	**3.2**	**3.5**	**2.0**	**0.6**	**16.8**	**2.9**
	Overall Mean		**30,692**	**33.0**	**27.3**	**38.7**	**8.0**	**3.2**	**1.40**	**34.9**	**36.5**	**35.2**	**55.6**	**52.3**	**60.7**	**64.0**	**13.2**	**3.3**	**74.4**	**23.4**

Table 5a: Hybrid traits and performance for 96–110-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[2]	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
Pioneer Seed	P0732Q	106	32,825	28.9	29.0	37.4	8.3	3.3	1.17	35.8	38.9	.	.	53.0	62.6	65.9	13.3	3.2	75.0	23.5
Seed Consultants, Inc.	SC1053AM	105	30,928	29.7	28.7	39.0	8.3	3.3	1.21	35.1	37.4	.	.	51.8	61.1	64.3	13.4	3.2	72.9	23.1
Brevant Seeds	B06F91Q	106	29,895	31.0	30.7	41.1	8.6	2.9	1.30	35.7	33.2	33.2	56.7	55.0	63.8	66.6	11.1	3.9	95.1	26.9
Dekalb	DKC59-81RIB	109	30,492	31.6	27.5	37.6	8.3	3.3	1.36	33.8	36.9	.	.	52.3	58.5	61.5	14.1	3.2	65.6	21.6
Redtail King's Agriseeds	RT 57T85	107	30,862	31.9	27.7	38.1	7.9	2.9	1.25	35.5	35.7	.	.	53.7	63.2	67.0	11.8	3.4	86.6	25.7
Dyna-Gro Seed	D44SS54	104	29,476	32.2	23.8	40.4	8.2	3.0	1.32	35.0	34.7	34.8	54.0	53.7	62.1	65.3	12.0	3.6	84.2	25.1
Dekalb	DKC53-94RIB	103	33,310	32.3	29.9	35.0	8.1	3.2	1.43	35.3	37.8	.	.	53.6	60.6	63.6	13.7	3.1	68.8	22.4
Revere Seed	0518 VT2PRIB	105	30,126	32.4	27.9	40.7	8.1	3.1	1.53	35.3	35.4	.	.	52.6	60.3	63.4	13.1	3.5	75.0	23.5
Hubner Seed	H0570S	105	31,680	32.5	28.3	36.4	8.6	3.5	1.41	34.6	38.4	.	.	51.1	57.5	60.7	15.1	2.9	58.4	20.5
Dekalb	DKC59-07RIB	109	31,363	32.8	27.5	38.6	7.5	3.2	1.42	33.6	36.4	.	.	53.0	61.0	64.6	12.9	3.3	75.2	23.7
Seedway	SW 0321SS	103	31,126	32.8	28.5	39.9	8.0	3.1	1.40	33.4	35.2	.	.	53.2	61.2	64.8	12.4	3.5	80.1	24.5
Channel	206-16SSPRIB	106	30,492	33.2	28.5	39.3	8.4	3.2	1.52	33.2	35.5	.	.	50.5	57.5	60.1	14.2	3.2	64.7	21.4
Revere Seed	0398 DV	103	30,067	33.6	25.1	37.6	8.3	3.3	1.39	35.4	37.7	.	.	51.7	60.9	64.4	13.4	3.1	71.6	23.0
Seed Consultants, Inc.	SC1042Q	104	30,093	33.6	27.6	42.1	8.0	2.9	1.47	37.1	34.8	.	.	54.5	63.8	66.8	11.5	3.8	88.7	25.8
Channel	206-99STXRIB	106	30,347	33.6	27.1	41.2	7.8	2.8	1.51	36.1	34.2	.	.	56.4	63.8	67.1	11.2	4.0	93.9	26.8
Redtail King's Agriseeds	RT 53T49-D2	103	29,400	36.3	26.6	40.2	8.5	3.1	1.56	34.9	35.2	.	.	53.0	60.2	63.1	13.0	3.5	76.6	23.3
		RM Mean	**30,780**	**32.4**	**27.8**	**39.0**	**8.2**	**3.1**	**1.39**	**35.0**	**36.1**	**34.0**	**55.4**	**53.1**	**61.1**	**64.3**	**12.9**	**3.4**	**77.0**	**23.8**
	Overall LSD (0.10)		**1,670**	**2.3**	**NS[2]**	**4.2**	**0.5**	**0.3**	**0.15**	**2.1**	**3.4**	**NS**	**2.8**	**2.9**	**3.2**	**3.5**	**2.0**	**0.6**	**16.8**	**2.9**
	Overall Mean		**30,692**	**33.0**	**27.3**	**38.7**	**8.0**	**3.2**	**1.40**	**34.9**	**36.5**	**35.2**	**55.6**	**52.3**	**60.7**	**64.0**	**13.2**	**3.3**	**74.4**	**23.4**

Table 5b: Hybrid traits and performance for 96–110-day RM groups at Madrid, 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
Hubner Seed	H6134RCSS	96	37,033	32.8	29.8	38.7	7.7	2.8	1.40	37.2	35.9	.	.	56.1	63.9	66.6	12.0	3.7	86.8	25.4
CNI	Integra 4601	96	34,184	37.6	32.6	44.7	7.5	2.7	1.56	36.9	32.5	.	.	55.8	63.5	66.5	10.9	4.3	95.4	26.8
Brevant Seeds	B97T04SXE	97	35,860	35.4	30.3	38.9	7.5	2.9	1.64	37.1	36.5	35.5	55.4	53.8	60.9	63.6	13.3	3.4	74.8	23.2
Hubner Seed	H6107RCSS	97	37,368	31.5	30.6	36.9	7.7	3.1	1.46	36.6	37.1	.	.	54.6	61.4	64.0	13.4	3.4	73.9	23.1
Seed Consultants, Inc.	SC973AM	97	36,698	34.7	33.9	40.8	7.4	2.9	1.40	38.5	35.0	.	.	56.1	63.3	66.1	11.8	3.9	88.2	25.5
Seedway	SW 9726TR	97	35,022	38.3	29.7	40.7	7.2	3.2	1.35	35.0	37.3	.	.	53.4	60.7	64.1	13.4	3.5	74.0	23.1
Revere Seed	9796 V	97	35,190	36.9	29.8	43.3	7.8	2.9	1.56	35.7	32.5	.	.	54.0	60.3	63.4	12.0	4.0	85.8	24.9
Dekalb	DKC48-34RIB	98	34,352	34.5	32.3	38.4	7.4	2.9	1.40	37.9	37.4	.	.	58.8	66.5	69.4	11.4	3.9	92.0	26.5
Revere Seed	9827 SSXRIB	98	36,195	36.9	33.1	42.9	7.8	2.6	1.49	38.2	33.7	.	.	57.3	65.5	68.2	10.8	4.2	99.1	27.5
Syngenta Seeds	NK9874-3220	98	37,368	34.3	29.6	38.7	7.9	3.1	1.52	36.2	35.8	.	.	52.5	59.4	62.1	13.5	3.3	72.1	22.5
Growmark, Inc	FS 4927T RIB	99	35,860	35.1	30.8	36.9	7.6	3.3	1.21	35.4	40.2	.	.	53.3	62.4	65.6	13.9	3.0	70.0	22.7
Seed Consultants, Inc.	SC1018AM	101	35,357	31.0	31.9	36.8	8.2	2.9	1.39	38.3	36.8	.	.	55.7	64.5	67.2	12.1	3.5	84.9	25.2
Brevant Seeds	B02V87AMXT	102	36,698	31.1	31.9	36.1	7.4	3.1	1.37	38.7	39.1	37.6	60.1	54.3	62.0	64.6	13.9	3.2	72.0	22.9
Growmark, Inc	FS 5115X RIB	101	35,190	32.0	29.4	35.8	7.5	3.1	1.46	37.4	38.3	.	.	54.1	62.9	65.7	13.2	3.2	75.8	23.8
Seedway	SW 0030SS	100	35,190	33.5	30.9	41.4	7.4	2.8	1.45	37.7	33.8	.	.	55.6	65.6	68.4	10.7	3.9	96.8	27.2
Hubner Seed	H6225RCSS	102	34,184	33.6	29.1	40.6	7.3	3.0	1.53	36.3	35.5	.	.	53.9	60.9	64.1	12.7	3.6	78.8	23.9
Channel	201-07SSPRIB	101	37,201	33.7	32.1	40.2	7.2	2.8	1.50	37.6	35.4	.	.	55.6	62.6	65.2	12.4	3.7	83.9	24.8
Seed Consultants, Inc.	SC1003AM	100	37,033	33.9	31.3	39.6	7.3	3.0	1.36	37.7	36.3	.	.	53.7	61.7	64.4	13.0	3.5	77.4	23.8
Dekalb	DKC50-87RIB	100	35,525	34.3	31.0	40.0	7.6	3.3	1.47	34.8	36.6	.	.	50.8	58.5	61.7	14.1	3.2	67.4	21.8
Pioneer Seed	P0035Q	100	35,357	34.8	30.8	41.3	7.6	2.7	1.43	38.8	34.1	.	.	56.9	63.8	66.7	11.4	4.0	93.9	26.5
Growmark, Inc	FS 5101X RIB	101	33,347	34.8	34.0	41.6	7.3	2.8	1.41	37.6	34.7	.	.	56.4	64.2	66.9	11.5	4.0	92.1	26.3
Channel	200-42VT2PRIB	100	34,687	35.7	32.2	41.2	7.5	3.0	1.45	36.4	35.2	.	.	53.3	61.4	63.8	12.7	3.6	78.5	23.8
Dyna-Gro Seed	D40VC41	100	35,525	36.0	32.8	42.5	6.7	2.8	1.64	38.8	35.1	35.3	57.7	55.4	62.2	64.8	12.4	3.9	83.1	24.6
Revere Seed	9916 VT2PRIB	99	36,530	36.6	31.7	42.7	6.9	2.9	1.56	37.3	35.2	.	.	53.6	61.3	64.1	12.7	3.8	80.0	24.2
Syngenta Seeds	NK9922-5222	99	36,363	37.4	30.0	43.0	7.7	2.6	1.50	37.7	34.4	.	.	54.8	62.8	65.8	11.8	3.9	87.7	25.2
		RM Mean	**35,733**	**34.6**	**31.3**	**40.1**	**7.5**	**2.9**	**1.46**	**37.2**	**35.8**	**36.2**	**57.7**	**54.8**	**62.5**	**65.3**	**12.4**	**3.7**	**82.6**	**24.6**
		Overall LSD (0.10)	**NS2**	**3.2**	**NS**	**4.3**	**0.5**	**NS**	**NS**	**NS**	**3.2**	**NS**	**2.0**	**2.8**	**3.6**	**3.6**	**NS**	**NS**	**NS**	**NS**
		Overall Mean	**35,766**	**34.1**	**31.1**	**39.6**	**7.6**	**2.9**	**1.44**	**37.2**	**36.0**	**36.1**	**57.6**	**55.1**	**62.5**	**65.4**	**12.5**	**3.7**	**82.4**	**24.6**

Table 5b: Hybrid traits and performance for 96–110-day RM groups at Madrid, 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[2]	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
Pioneer Seed	P0732Q	106	37,368	29.6	30.7	36.0	8.1	3.0	1.31	38.1	38.2	.	.	56.3	63.5	66.3	12.9	3.4	80.2	24.3
Brevant Seeds	B06F91Q	106	37,703	30.3	34.4	39.5	7.8	2.8	1.46	37.1	34.8	35.4	57.3	53.5	60.6	63.4	12.8	3.5	78.7	23.8
Seed Consultants, Inc.	SC1053AM	105	35,693	30.9	32.2	38.6	8.2	2.7	1.17	38.3	35.2	.	.	57.1	65.9	68.8	11.0	3.8	97.3	27.3
Dekalb	DKC59-81RIB	109	34,855	31.5	30.6	37.3	7.8	2.9	1.32	36.9	36.7	.	.	56.0	62.2	64.8	12.9	3.5	78.7	23.8
Dyna-Gro Seed	D44SS54	104	36,530	31.7	29.3	38.6	7.7	2.9	1.44	38.0	36.5	36.4	57.3	55.2	61.9	64.7	12.9	3.5	77.8	23.8
Redtail King's Agriseeds	RT 57T85	107	35,022	32.1	30.3	37.1	7.1	2.8	1.44	39.9	37.5	.	.	55.6	63.6	66.4	12.6	3.4	81.2	24.6
Seed Consultants, Inc.	SC1042Q	104	36,363	32.3	32.6	37.7	7.8	3.0	1.31	37.8	36.6	.	.	55.8	63.9	66.7	12.2	3.6	85.9	25.3
Dekalb	DKC53-94RIB	103	33,347	33.2	28.1	38.7	7.6	3.0	1.39	36.0	37.3	.	.	55.0	61.0	64.1	13.4	3.5	73.8	23.0
Channel	206-16SSPRIB	106	36,866	33.9	30.3	36.5	7.5	3.4	1.44	34.3	38.9	.	.	51.3	58.0	61.2	15.1	3.0	60.2	20.5
Dekalb	DKC59-07RIB	109	36,530	34.1	31.6	39.7	7.4	2.8	1.47	37.1	35.4	.	.	56.6	63.3	66.2	12.0	3.8	87.8	25.4
Seedway	SW 0321SS	103	36,028	34.7	33.0	41.7	7.4	2.8	1.59	37.8	34.1	.	.	56.0	63.2	66.0	11.7	4.0	90.2	25.9
Channel	206-99STXRIB	106	34,520	34.8	30.0	40.9	7.4	2.6	1.49	38.7	34.1	.	.	58.3	66.1	68.9	10.6	4.2	101.1	27.9
Redtail King's Agriseeds	RT 53T49-D2	103	35,693	35.1	28.8	39.8	8.4	3.0	1.60	35.6	35.3	.	.	54.5	60.7	63.3	12.9	3.6	77.7	23.4
Revere Seed	0518 VT2PRIB	105	35,022	35.6	31.5	40.4	7.3	3.0	1.35	36.5	36.9	.	.	55.2	62.6	65.8	12.6	3.6	81.2	24.4
Revere Seed	0398 DV	103	35,525	36.7	30.3	38.5	7.9	3.0	1.38	36.3	37.3	.	.	55.3	61.7	64.9	13.1	3.5	77.2	23.6
Hubner Seed	H0570S	105	36,028	36.8	31.2	40.5	7.4	2.9	1.53	38.2	36.7	.	.	57.8	63.4	66.6	12.3	3.9	86.8	25.2
		RM Mean	**35,818**	**33.3**	**30.9**	**38.8**	**7.7**	**2.9**	**1.42**	**37.3**	**36.4**	**35.9**	**57.3**	**55.6**	**62.6**	**65.5**	**12.6**	**3.6**	**82.2**	**24.5**
	Overall LSD (0.10)		**NS[2]**	**3.2**	**NS**	**4.3**	**0.5**	**NS**	**NS**	**NS**	**3.2**	**NS**	**2.0**	**2.8**	**3.6**	**3.6**	**NS**	**NS**	**NS**	**NS**
	Overall Mean		**35,766**	**34.1**	**31.1**	**39.6**	**7.6**	**2.9**	**1.44**	**37.2**	**36.0**	**36.1**	**57.6**	**55.1**	**62.5**	**65.4**	**12.5**	**3.7**	**82.4**	**24.6**

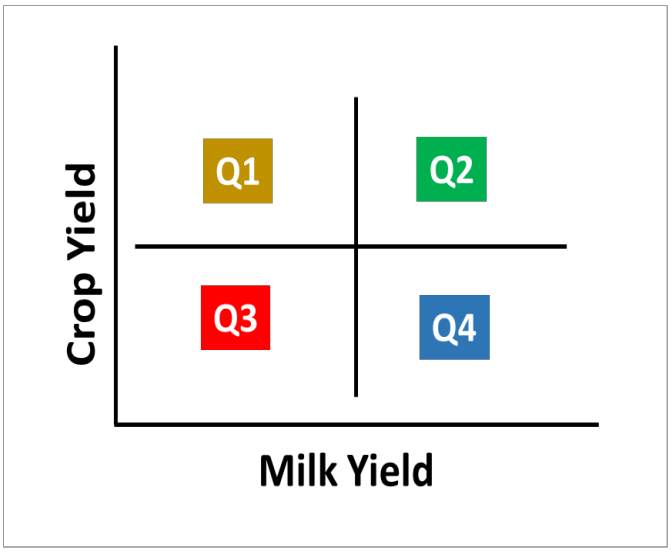
Table 5c: Hybrid traits and performance for 96–110-day RM groups at Aurora, NY *(page 1 of 2)*.

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	34,017	30.3	21.5	36.0	7.4	2.5	1.35	41.8	38.5	.	.	63.3	73.8	77.0	8.9	4.2	110.4	30.0
Seed Consultants, Inc.	SC973AM	97	36,363	30.5	19.8	36.4	8.1	2.8	1.38	38.3	38.0	.	.	60.4	68.6	71.4	10.8	3.9	97.3	27.6
Brevant Seeds	B02V87AMXT	102	34,855	30.6	21.2	38.9	7.3	2.8	1.27	38.0	37.4	37.5	65.0	58.5	66.9	69.8	11.3	3.8	95.2	27.2
Seedway	SW 0030SS	100	36,363	30.7	22.2	36.1	7.7	2.6	1.31	38.7	37.3	.	.	61.8	70.1	73.1	10.0	4.1	106.3	29.1
Hubner Seed	H6107RCSS	97	35,525	30.8	20.5	35.7	8.2	2.6	1.39	38.7	36.9	.	.	61.8	69.3	72.2	10.2	4.1	103.0	28.4
Channel	201-07SSPRIB	101	34,017	31.0	19.4	37.1	7.9	2.6	1.33	38.3	37.4	.	.	61.1	69.7	73.0	10.1	4.0	104.9	28.8
Growmark, Inc	FS 5115X RIB	101	33,849	31.4	20.0	34.6	7.9	2.7	1.34	39.9	38.8	.	.	63.2	75.9	79.0	8.1	4.0	113.1	30.5
Dyna-Gro Seed	D40VC41	100	36,866	31.5	19.8	38.4	7.1	2.8	1.24	36.9	38.0	38.7	63.5	58.8	67.8	71.7	10.7	3.8	94.4	27.2
Pioneer Seed	P0035Q	100	34,520	31.5	21.3	37.2	7.5	2.7	1.30	37.8	37.9	.	.	60.1	68.0	71.2	11.0	3.9	96.3	27.3
Revere Seed	9916 VT2PRIB	99	35,860	31.5	17.9	39.4	7.4	2.5	1.36	38.8	36.3	.	.	61.2	71.7	75.4	9.0	4.4	108.7	29.9
Seedway	SW 9726TR	97	36,028	31.6	21.0	38.4	8.1	2.6	1.30	38.7	37.0	.	.	62.1	71.2	74.9	9.3	4.2	108.0	29.6
Growmark, Inc	FS 5101X RIB	101	34,855	31.6	19.4	38.6	7.6	2.7	1.43	37.4	37.1	.	.	60.1	66.1	69.2	11.4	4.0	94.4	26.9
Dekalb	DKC50-87RIB	100	36,195	31.8	19.4	36.2	7.6	2.8	1.23	37.4	38.6	.	.	60.1	66.5	69.9	11.6	3.8	94.8	27.1
Hubner Seed	H6134RCSS	96	37,871	31.9	19.4	38.7	8.4	2.5	1.36	38.6	36.8	.	.	62.8	73.2	76.5	8.7	4.4	112.9	30.5
Hubner Seed	H6225RCSS	102	36,195	32.4	20.5	39.6	8.0	2.6	1.33	39.4	37.5	.	.	62.5	68.5	72.6	10.3	4.4	105.2	29.0
Dekalb	DKC48-34RIB	98	34,687	32.6	22.1	36.8	7.8	2.6	1.27	39.1	36.5	.	.	61.6	70.0	73.2	9.8	4.1	105.9	29.0
Channel	200-42VT2PRIB	100	33,682	32.7	20.2	41.1	8.0	2.5	1.38	38.5	34.7	.	.	61.2	70.1	73.2	9.3	4.6	111.0	30.0
Growmark, Inc	FS 4927T RIB	99	35,860	32.8	23.5	36.8	7.6	2.7	1.29	37.8	38.1	.	.	60.8	68.9	72.2	10.6	3.9	99.2	27.8
Brevant Seeds	B97T04SXE	97	36,028	32.9	20.6	38.5	7.2	2.6	1.46	36.5	38.8	39.8	63.7	60.2	67.3	71.2	11.2	3.9	95.6	27.3
CNI	Integra 4601	96	34,017	33.5	19.7	40.3	8.2	2.4	1.35	39.2	34.0	.	.	62.0	68.6	71.6	9.7	4.7	111.3	30.0
Revere Seed	9796 V	97	33,849	33.8	20.7	39.5	7.7	2.6	1.51	38.1	35.5	.	.	59.6	68.2	71.2	10.2	4.1	103.4	28.3
Syngenta Seeds	NK9874-3220	98	36,028	34.1	21.5	40.9	7.5	2.6	1.44	37.7	33.7	.	.	59.4	67.0	69.9	10.2	4.4	103.3	28.3
Syngenta Seeds	NK9922-5222	99	35,860	34.5	22.6	37.1	7.6	2.5	1.28	38.6	37.1	.	.	62.8	73.2	76.2	8.8	4.3	112.8	30.2
Revere Seed	9827 SSXRIB	98	34,017	34.8	20.7	40.7	8.5	2.5	1.52	38.5	34.6	.	.	62.0	71.6	75.1	8.8	4.7	114.9	30.8
Seed Consultants, Inc.	SC1003AM	100	35,860	35.0	22.0	42.9	7.4	2.3	1.41	40.4	32.9	.	.	61.8	70.5	73.7	8.7	4.9	117.2	31.2
		RM Mean	**35,331**	**32.2**	**20.7**	**38.2**	**7.8**	**2.6**	**1.35**	**38.5**	**36.8**	**38.6**	**64.1**	**61.2**	**69.7**	**73.0**	**9.9**	**4.2**	**104.8**	**28.9**
	Overall LSD (0.10)		**1,520**	**1.8**	**NS[2]**	**3.5**	**0.6**	**0.3**	**0.11**	**NS**	**3.0**	**NS**	**NS**	**NS**	**5.2**	**5.2**	**2.3**	**0.6**	**NS**	**NS**
	Overall Mean		**35,431**	**31.8**	**20.7**	**37.2**	**7.8**	**2.6**	**1.32**	**38.7**	**37.4**	**39.4**	**64.1**	**61.5**	**70.1**	**73.3**	**10.0**	**4.1**	**104.3**	**28.8**

Table 5c: Hybrid traits and performance for 96–110-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[2]	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
Dyna-Gro Seed	D44SS54	104	36,363	27.4	18.8	34.0	8.7	2.8	1.13	37.6	40.2	41.2	63.4	60.3	67.0	70.9	11.7	3.6	91.7	26.6
Brevant Seeds	B06F91Q	106	36,363	28.8	20.0	35.2	8.1	2.7	1.10	39.1	39.3	40.2	65.1	62.3	69.7	73.1	10.6	4.0	100.0	28.2
Channel	206-99STXRIB	106	36,195	29.2	18.9	31.5	8.5	2.7	1.27	39.8	40.6	.	.	63.6	74.1	77.2	9.3	3.8	104.1	28.9
Seed Consultants, Inc.	SC1053AM	105	34,520	29.7	19.6	35.5	7.6	2.6	1.14	40.7	39.2	.	.	61.3	69.4	72.3	10.8	3.8	100.6	28.0
Dekalb	DKC59-81RIB	109	35,693	30.4	20.7	35.1	7.8	2.8	1.24	37.6	38.8	.	.	60.3	67.0	70.5	11.6	3.8	94.5	27.0
Dekalb	DKC59-07RIB	109	35,693	30.6	20.6	36.0	7.8	2.5	1.34	40.1	37.4	.	.	64.3	75.3	78.6	8.1	4.5	117.4	31.3
Pioneer Seed	P0732Q	106	36,028	30.7	21.6	35.9	7.7	2.5	1.22	40.1	37.3	.	.	63.7	72.7	75.9	9.0	4.3	113.4	30.7
Seedway	SW 0321SS	103	34,855	30.8	21.3	33.8	8.0	2.8	1.30	37.7	39.5	.	.	61.0	69.0	72.1	11.0	3.7	93.9	26.8
Dekalb	DKC53-94RIB	103	35,693	30.9	20.5	35.7	8.1	2.5	1.33	38.7	36.9	.	.	62.3	73.1	76.4	8.7	4.1	111.9	30.2
Redtail King's Agriseeds	RT 57T85	107	33,514	31.3	23.0	38.2	7.0	2.4	1.28	41.0	36.5	.	.	63.2	71.0	74.0	9.5	4.4	113.4	30.4
Seed Consultants, Inc.	SC1042Q	104	34,017	31.8	22.7	39.4	7.7	2.5	1.34	39.8	36.0	.	.	61.5	67.9	71.0	10.4	4.4	105.3	28.9
Hubner Seed	H0570S	105	37,201	31.8	19.8	33.0	8.7	2.6	1.19	39.9	38.7	.	.	64.6	73.5	76.7	9.1	4.1	112.6	30.5
Revere Seed	0518 VT2PRIB	105	36,195	32.2	23.7	40.9	8.0	2.5	1.38	36.5	34.7	.	.	60.4	71.1	74.8	8.8	4.4	110.4	29.9
Channel	206-16SSPRIB	106	36,363	32.3	19.6	38.8	8.3	2.7	1.37	37.8	37.1	.	.	60.8	68.8	72.2	10.3	4.1	103.4	28.5
Revere Seed	0398 DV	103	35,190	33.7	21.2	31.7	7.8	3.1	1.25	37.6	40.9	.	.	58.9	64.3	67.0	13.5	3.3	77.0	23.7
Redtail King's Agriseeds	RT 53T49-D2	103	35,525	34.2	19.6	33.8	7.8	2.8	1.36	40.3	41.2	.	.	63.1	75.7	78.9	8.7	3.8	105.9	29.0
		RM Mean	**35,588**	**31.0**	**20.7**	**35.5**	**8.0**	**2.7**	**1.27**	**39.0**	**38.4**	**40.7**	**64.3**	**62.0**	**70.6**	**73.9**	**10.1**	**4.0**	**103.5**	**28.7**
		Overall LSD (0.10)	**1,520**	**1.8**	**NS[2]**	**3.5**	**0.6**	**0.3**	**0.11**	**NS**	**3.0**	**NS**	**NS**	**NS**	**5.2**	**5.2**	**2.3**	**0.6**	**NS**	**NS**
		Overall Mean	**35,431**	**31.8**	**20.7**	**37.2**	**7.8**	**2.6**	**1.32**	**38.7**	**37.4**	**39.4**	**64.1**	**61.5**	**70.1**	**73.3**	**10.0**	**4.1**	**104.3**	**28.8**

Figure 5. Interpretation of quartile plots used in Figures 6 and 7.



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 6.

Relationship between crop yield and predicted milk yield (PMY) for 80–95-day relative maturity (RM) hybrids planted at Oakfield, NY (5a), Willsboro, NY (5b) and Alburgh, VT (5c). 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 7.

Relationship between crop yield and predicted milk yield (PMY) for 96–110-day relative maturity (RM) hybrids planted at Alburgh, VT (6a), Madrid, NY (6b), Aurora, NY (6c). 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 6 & 7: 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 the figures 6 & 7 the LSD (0.10) is represented graphically as a way to visualize if the differences between hybrids is statistically significant.

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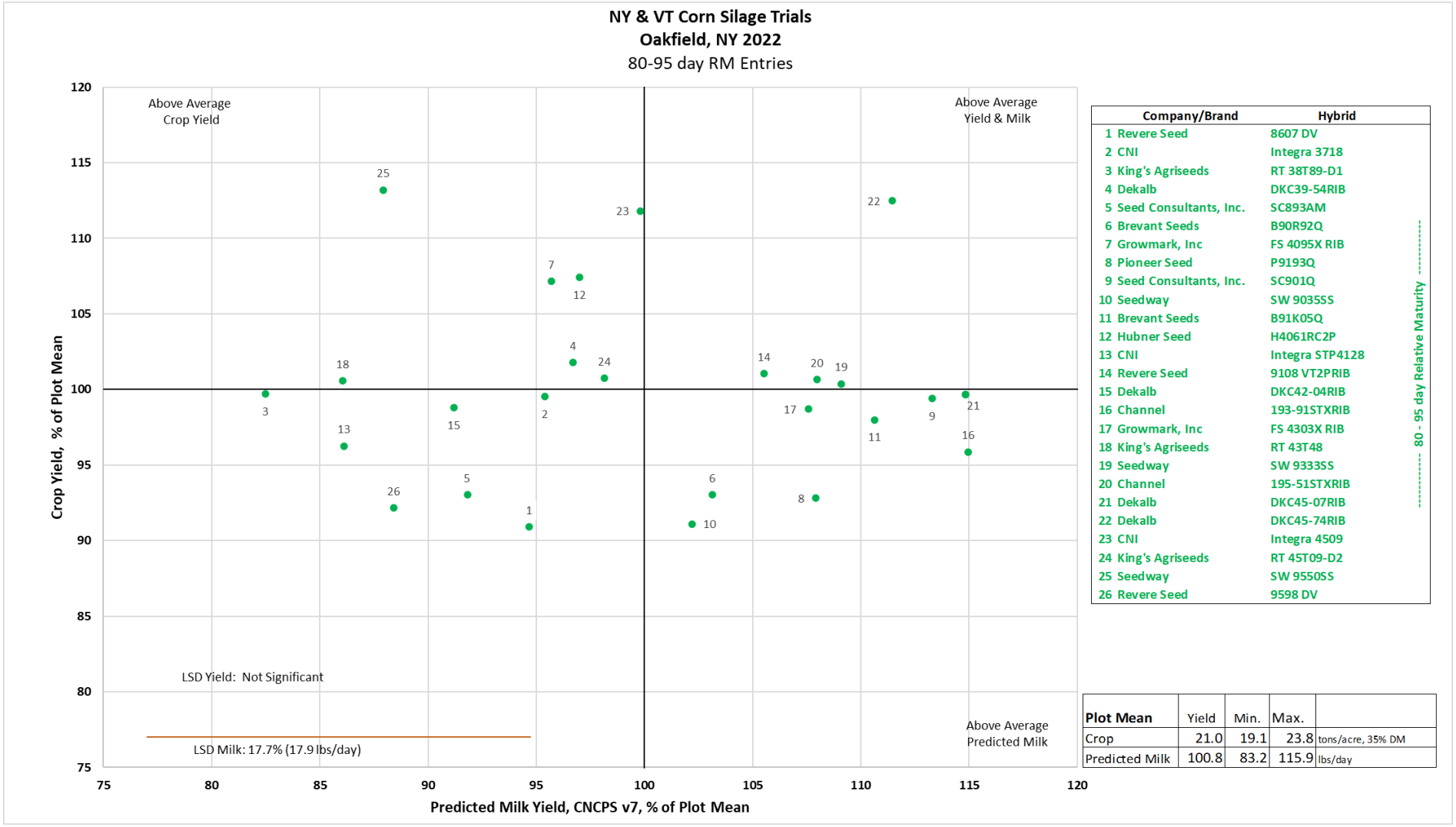
Figure 6a: Oakfield, NY 80–95-day RM hybrids.

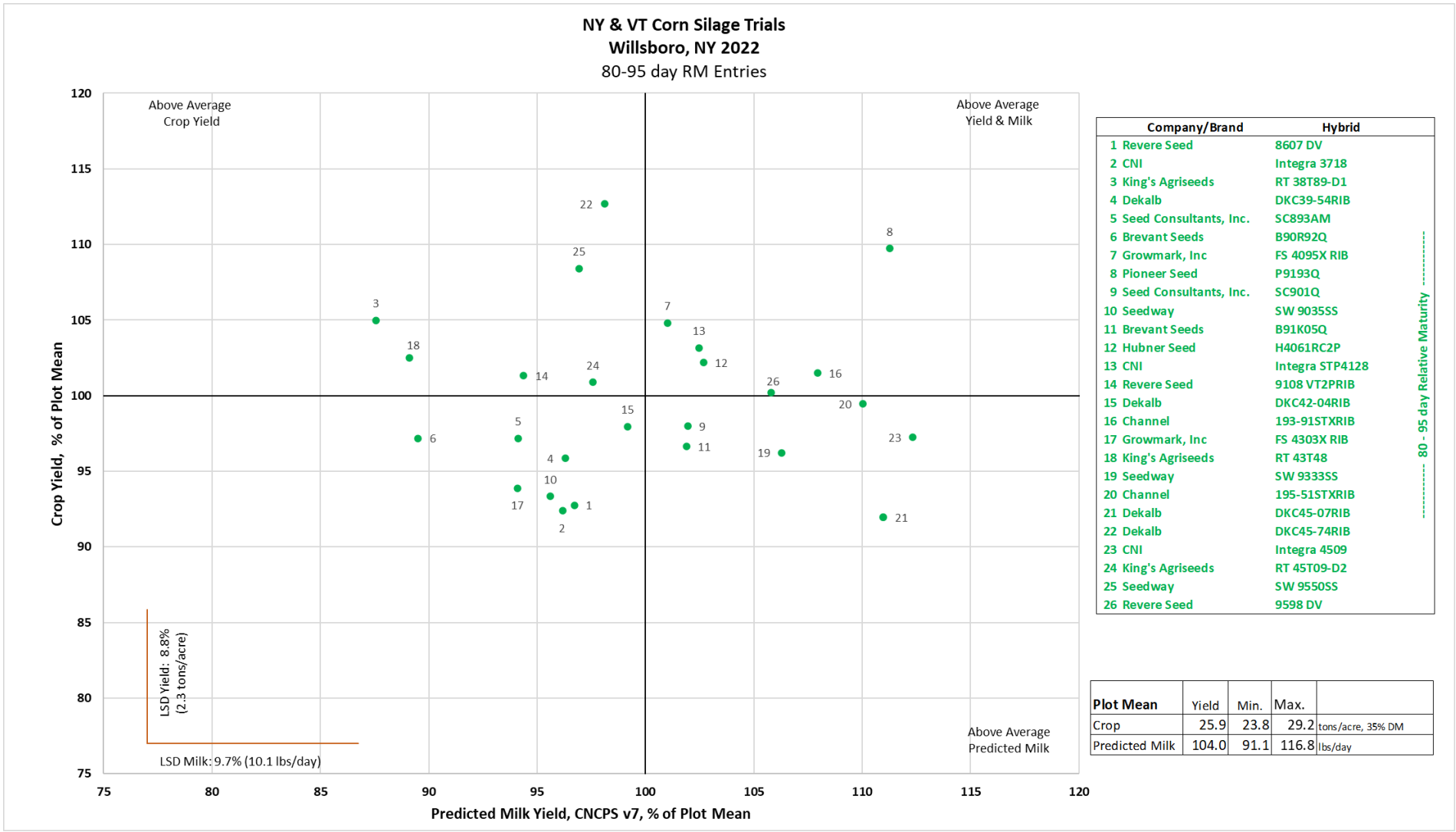


	Company/Brand	Hybrid
1	Revere Seed	8607 DV
2	CNI	Integra 3718
3	King's Agriseeds	RT 38T89-D1
4	Dekalb	DKC39-54RIB
5	Seed Consultants, Inc.	SC893AM
6	Brevant Seeds	B90R92Q
7	Growmark, Inc	FS 4095X RIB
8	Pioneer Seed	P9193Q
9	Seed Consultants, Inc.	SC901Q
10	Seedway	SW 9035SS
11	Brevant Seeds	B91K05Q
12	Hubner Seed	H4061RC2P
13	CNI	Integra STP4128
14	Revere Seed	9108 VT2PRIB
15	Dekalb	DKC42-04RIB
16	Channel	193-91STXRIB
17	Growmark, Inc	FS 4303X RIB
18	King's Agriseeds	RT 43T48
19	Seedway	SW 9333SS
20	Channel	195-51STXRIB
21	Dekalb	DKC45-07RIB
22	Dekalb	DKC45-74RIB
23	CNI	Integra 4509
24	King's Agriseeds	RT 45T09-D2
25	Seedway	SW 9550SS
26	Revere Seed	9598 DV

---------- 80 - 95 day Relative Maturity ----------

Plot Mean	Yield	Min.	Max.	
Crop	21.0	19.1	23.8	tons/acre, 35% DM
Predicted Milk	100.8	83.2	115.9	lbs/day

Figure 6b: Willsboro, NY 80–95-day RM hybrids.

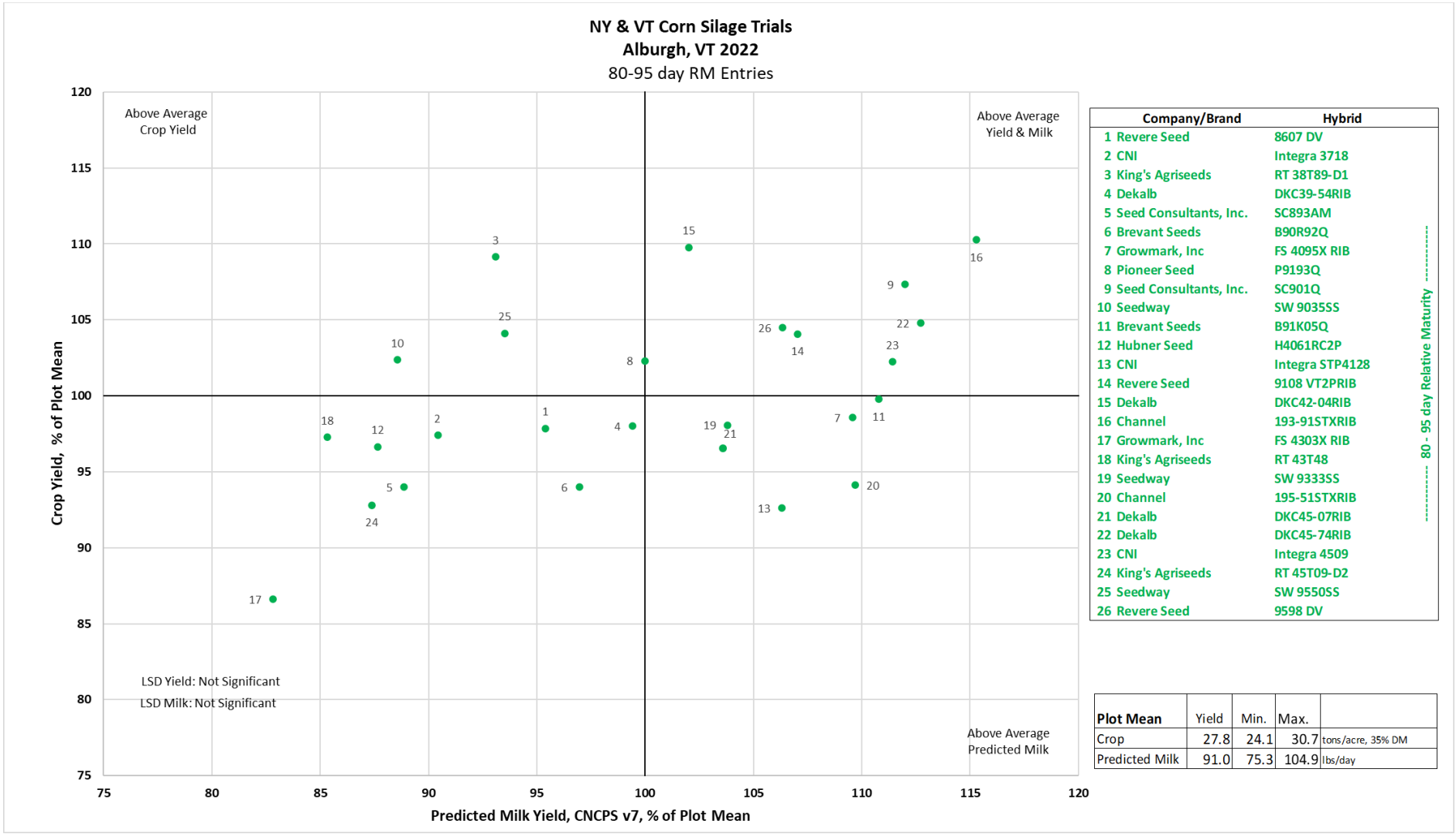


	Company/Brand	Hybrid
1	Revere Seed	8607 DV
2	CNI	Integra 3718
3	King's Agriseeds	RT 38T89-D1
4	Dekalb	DKC39-54RIB
5	Seed Consultants, Inc.	SC893AM
6	Brevant Seeds	B90R92Q
7	Growmark, Inc	FS 4095X RIB
8	Pioneer Seed	P9193Q
9	Seed Consultants, Inc.	SC901Q
10	Seedway	SW 9035SS
11	Brevant Seeds	B91K05Q
12	Hubner Seed	H4061RC2P
13	CNI	Integra STP4128
14	Revere Seed	9108 VT2PRIB
15	Dekalb	DKC42-04RIB
16	Channel	193-91STXRIB
17	Growmark, Inc	FS 4303X RIB
18	King's Agriseeds	RT 43T48
19	Seedway	SW 9333SS
20	Channel	195-51STXRIB
21	Dekalb	DKC45-07RIB
22	Dekalb	DKC45-74RIB
23	CNI	Integra 4509
24	King's Agriseeds	RT 45T09-D2
25	Seedway	SW 9550SS
26	Revere Seed	9598 DV

80 - 95 day Relative Maturity

Plot Mean	Yield	Min.	Max.	
Crop	25.9	23.8	29.2	tons/acre, 35% DM
Predicted Milk	104.0	91.1	116.8	lbs/day

Figure 6c: Alburgh, VT 80–95-day RM hybrids.



	Company/Brand	Hybrid
1	Revere Seed	8607 DV
2	CNI	Integra 3718
3	King's Agriseeds	RT 38T89-D1
4	Dekalb	DKC39-54RIB
5	Seed Consultants, Inc.	SC893AM
6	Brevant Seeds	B90R92Q
7	Growmark, Inc	FS 4095X RIB
8	Pioneer Seed	P9193Q
9	Seed Consultants, Inc.	SC901Q
10	Seedway	SW 9035SS
11	Brevant Seeds	B91K05Q
12	Hubner Seed	H4061RC2P
13	CNI	Integra STP4128
14	Revere Seed	9108 VT2PRIB
15	Dekalb	DKC42-04RIB
16	Channel	193-91STXRIB
17	Growmark, Inc	FS 4303X RIB
18	King's Agriseeds	RT 43T48
19	Seedway	SW 9333SS
20	Channel	195-51STXRIB
21	Dekalb	DKC45-07RIB
22	Dekalb	DKC45-74RIB
23	CNI	Integra 4509
24	King's Agriseeds	RT 45T09-D2
25	Seedway	SW 9550SS
26	Revere Seed	9598 DV

---------- 80 - 95 day Relative Maturity ----------

Plot Mean	Yield	Min.	Max.	
Crop	27.8	24.1	30.7	tons/acre, 35% DM
Predicted Milk	91.0	75.3	104.9	lbs/day

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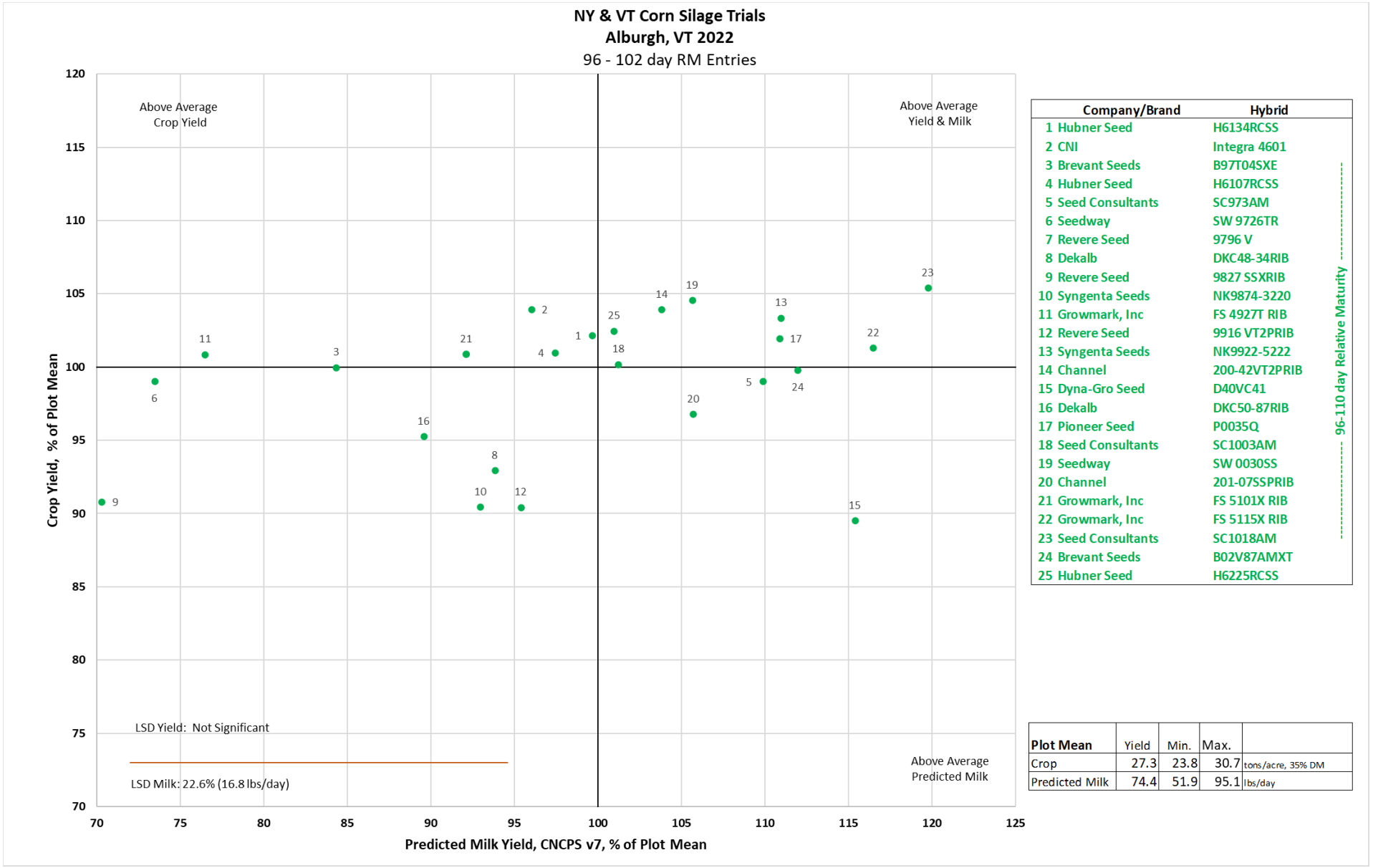
Figure 7a: Alburgh, VT 96–110-day RM hybrids, 96-102 RM entries.

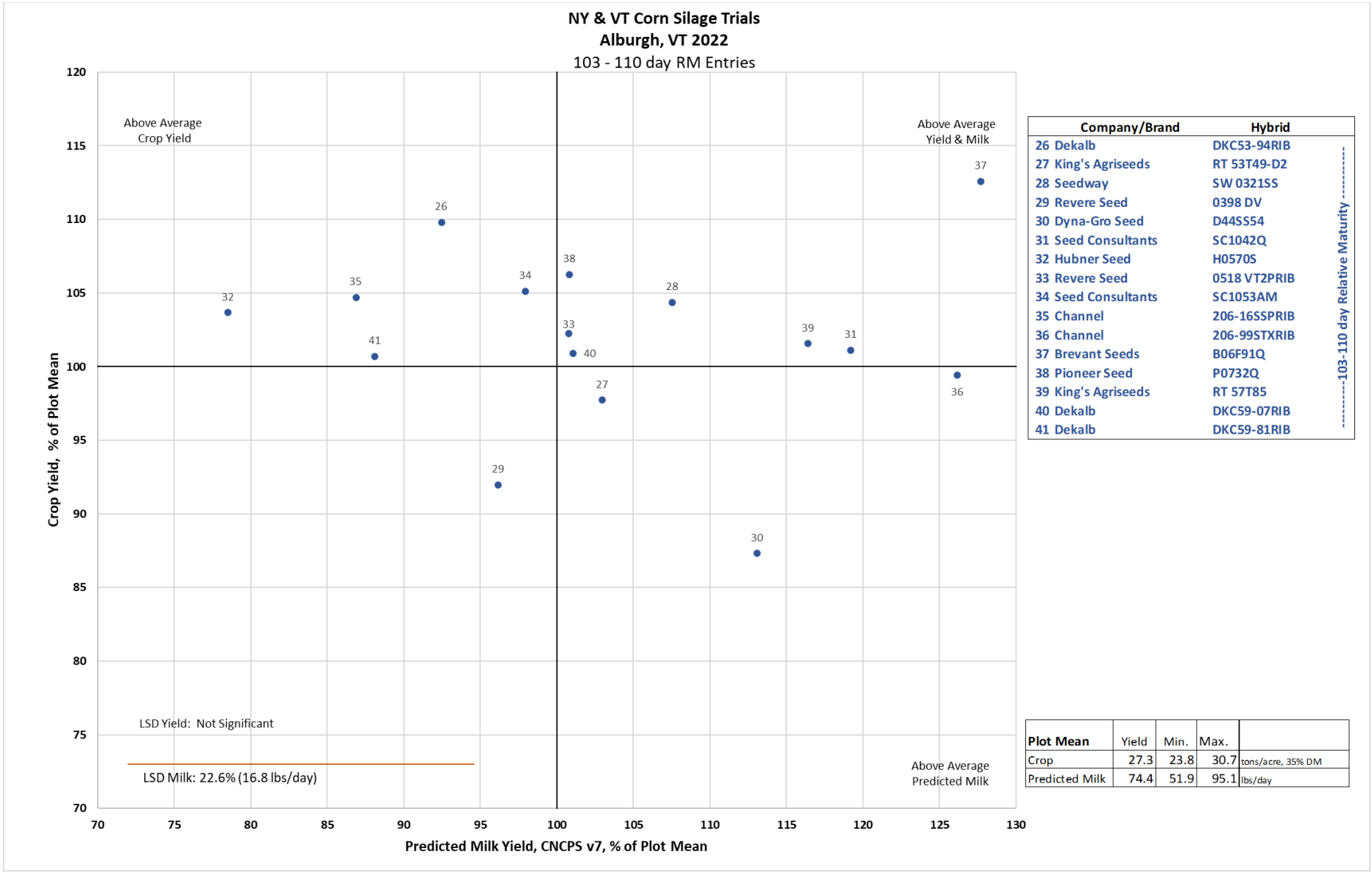


	Company/Brand	Hybrid
1	Hubner Seed	H6134RCSS
2	CNI	Integra 4601
3	Brevant Seeds	B97T04SXE
4	Hubner Seed	H6107RCSS
5	Seed Consultants	SC973AM
6	Seedway	SW 9726TR
7	Revere Seed	9796 V
8	Dekalb	DKC48-34RIB
9	Revere Seed	9827 SSXRIB
10	Syngenta Seeds	NK9874-3220
11	Growmark, Inc	FS 4927T RIB
12	Revere Seed	9916 VT2PRIB
13	Syngenta Seeds	NK9922-5222
14	Channel	200-42VT2PRIB
15	Dyna-Gro Seed	D40VC41
16	Dekalb	DKC50-87RIB
17	Pioneer Seed	P0035Q
18	Seed Consultants	SC1003AM
19	Seedway	SW 0030SS
20	Channel	201-07SSPRIB
21	Growmark, Inc	FS 5101X RIB
22	Growmark, Inc	FS 5115X RIB
23	Seed Consultants	SC1018AM
24	Brevant Seeds	B02V87AMXT
25	Hubner Seed	H6225RCSS

96-110 day Relative Maturity

Plot Mean	Yield	Min.	Max.	
Crop	27.3	23.8	30.7	tons/acre, 35% DM
Predicted Milk	74.4	51.9	95.1	lbs/day

Figure 7a: Alburgh, VT 96–110-day RM hybrids, 103-110 RM entries *(cont.)*.



Company/Brand	Hybrid
26 Dekalb	DKC53-94RIB
27 King's Agriseeds	RT 53T49-D2
28 Seedway	SW 0321SS
29 Revere Seed	0398 DV
30 Dyna-Gro Seed	D44SS54
31 Seed Consultants	SC1042Q
32 Hubner Seed	H0570S
33 Revere Seed	0518 VT2PRIB
34 Seed Consultants	SC1053AM
35 Channel	206-16SSPRIB
36 Channel	206-99STXRIB
37 Brevant Seeds	B06F91Q
38 Pioneer Seed	P0732Q
39 King's Agriseeds	RT 57T85
40 Dekalb	DKC59-07RIB
41 Dekalb	DKC59-81RIB

---------103-110 day Relative Maturity ----------

Plot Mean	Yield	Min.	Max.	
Crop	27.3	23.8	30.7	tons/acre, 35% DM
Predicted Milk	74.4	51.9	95.1	lbs/day

Figure 7b: Madrid, NY 96–110-day RM hybrids, 96-102 RM entries.

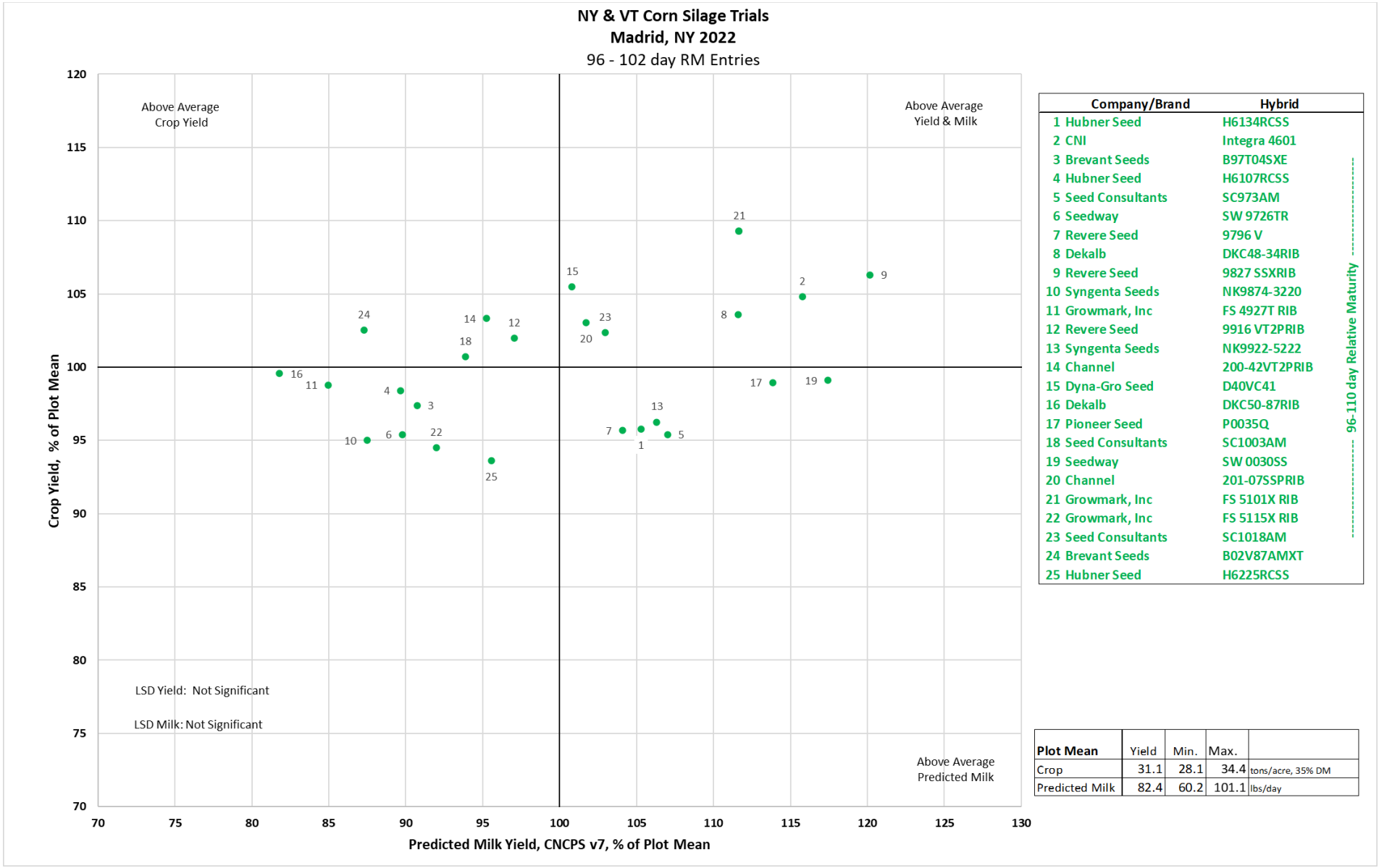
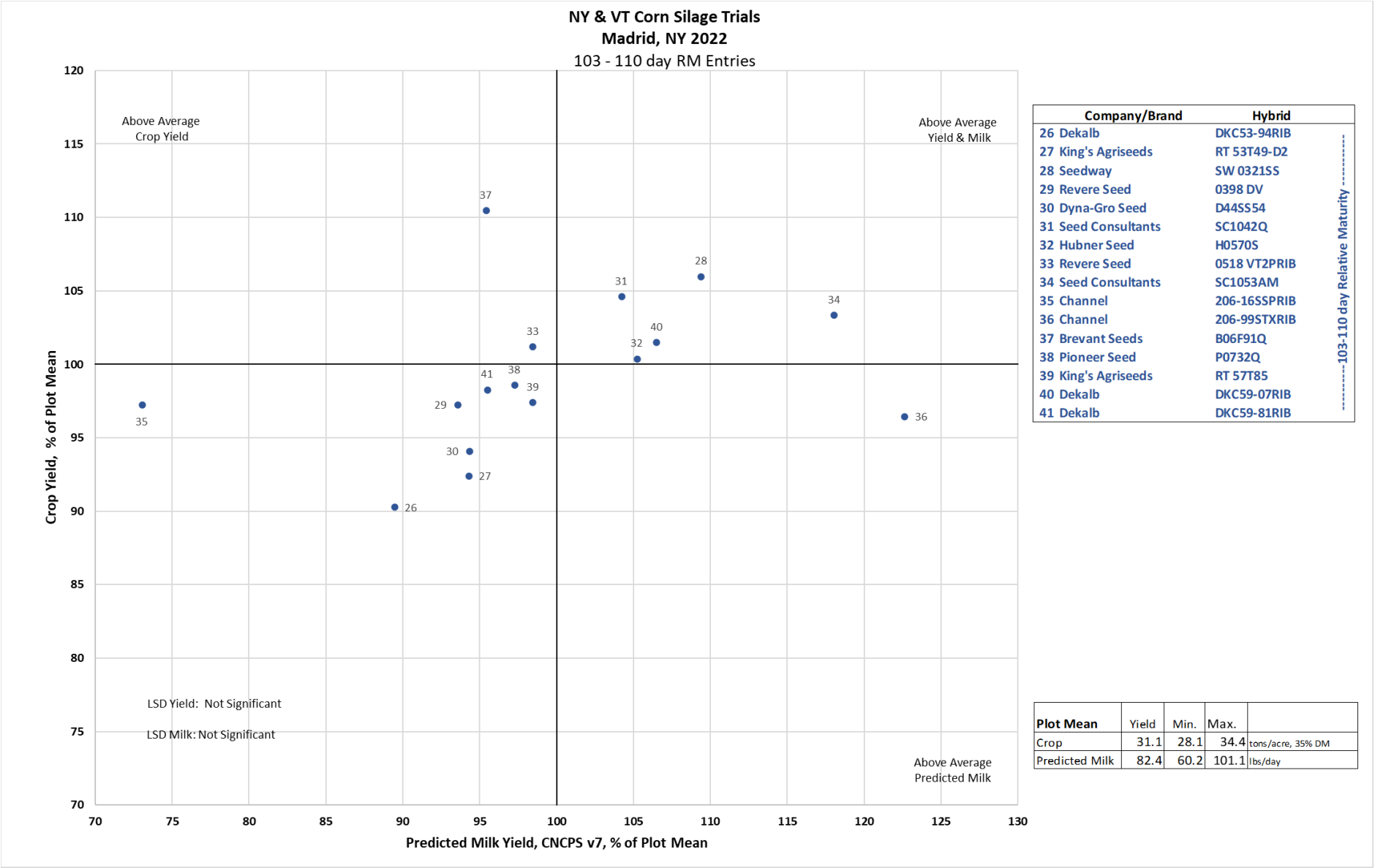


Figure 7b: Madrid, NY 96–110-day RM hybrids, 103-110 RM entries *(cont.)*.

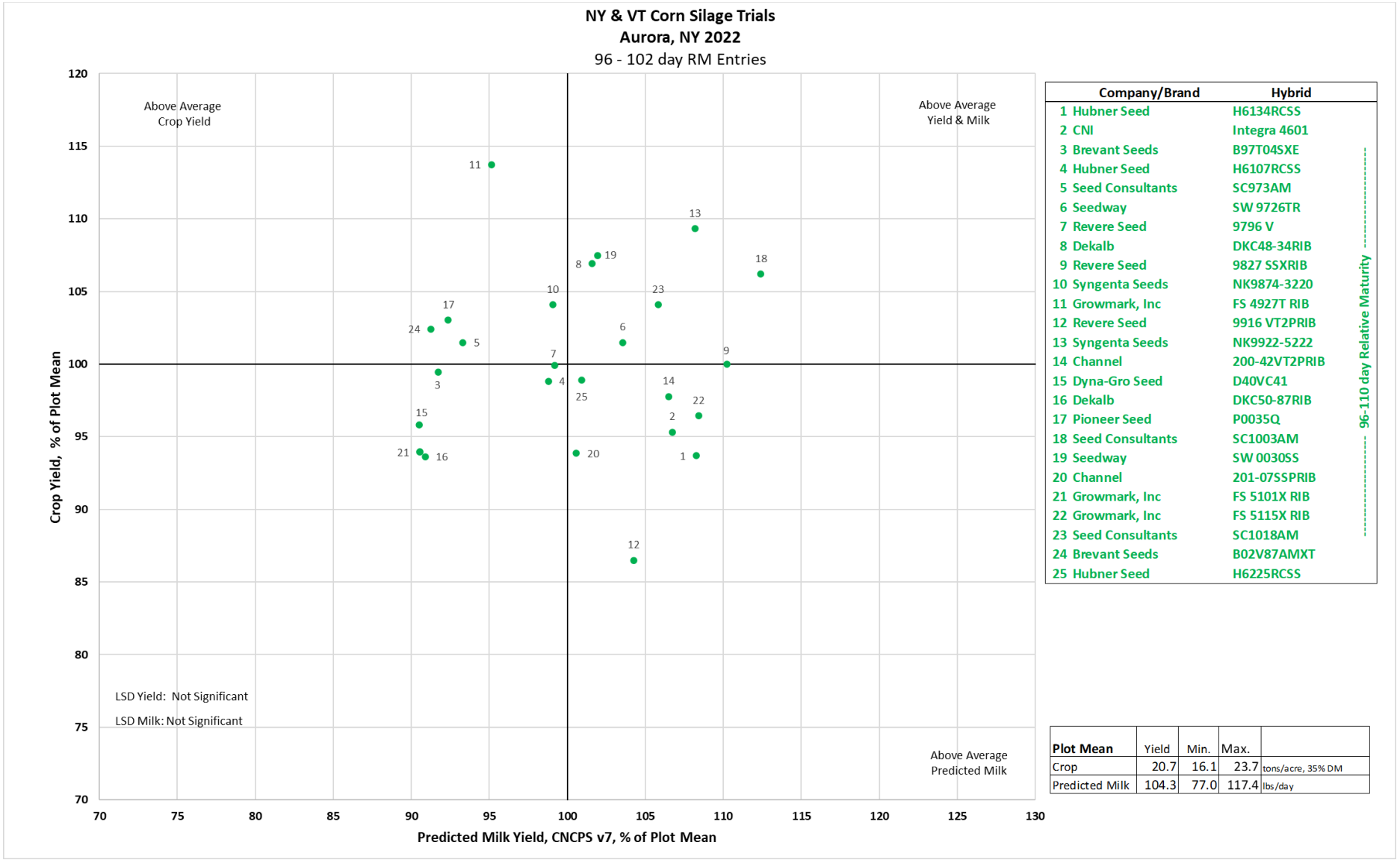


	Company/Brand	Hybrid
26	Dekalb	DKC53-94RIB
27	King's Agriseeds	RT 53T49-D2
28	Seedway	SW 0321SS
29	Revere Seed	0398 DV
30	Dyna-Gro Seed	D44SS54
31	Seed Consultants	SC1042Q
32	Hubner Seed	H0570S
33	Revere Seed	0518 VT2PRIB
34	Seed Consultants	SC1053AM
35	Channel	206-16SSPRIB
36	Channel	206-99STXRIB
37	Brevant Seeds	B06F91Q
38	Pioneer Seed	P0732Q
39	King's Agriseeds	RT 57T85
40	Dekalb	DKC59-07RIB
41	Dekalb	DKC59-81RIB

----------103-110 day Relative Maturity----------

Plot Mean	Yield	Min.	Max.	
Crop	31.1	28.1	34.4	tons/acre, 35% DM
Predicted Milk	82.4	60.2	101.1	lbs/day

Figure 7c: Aurora, NY 96–110-day RM hybrids, 96-102 entries.

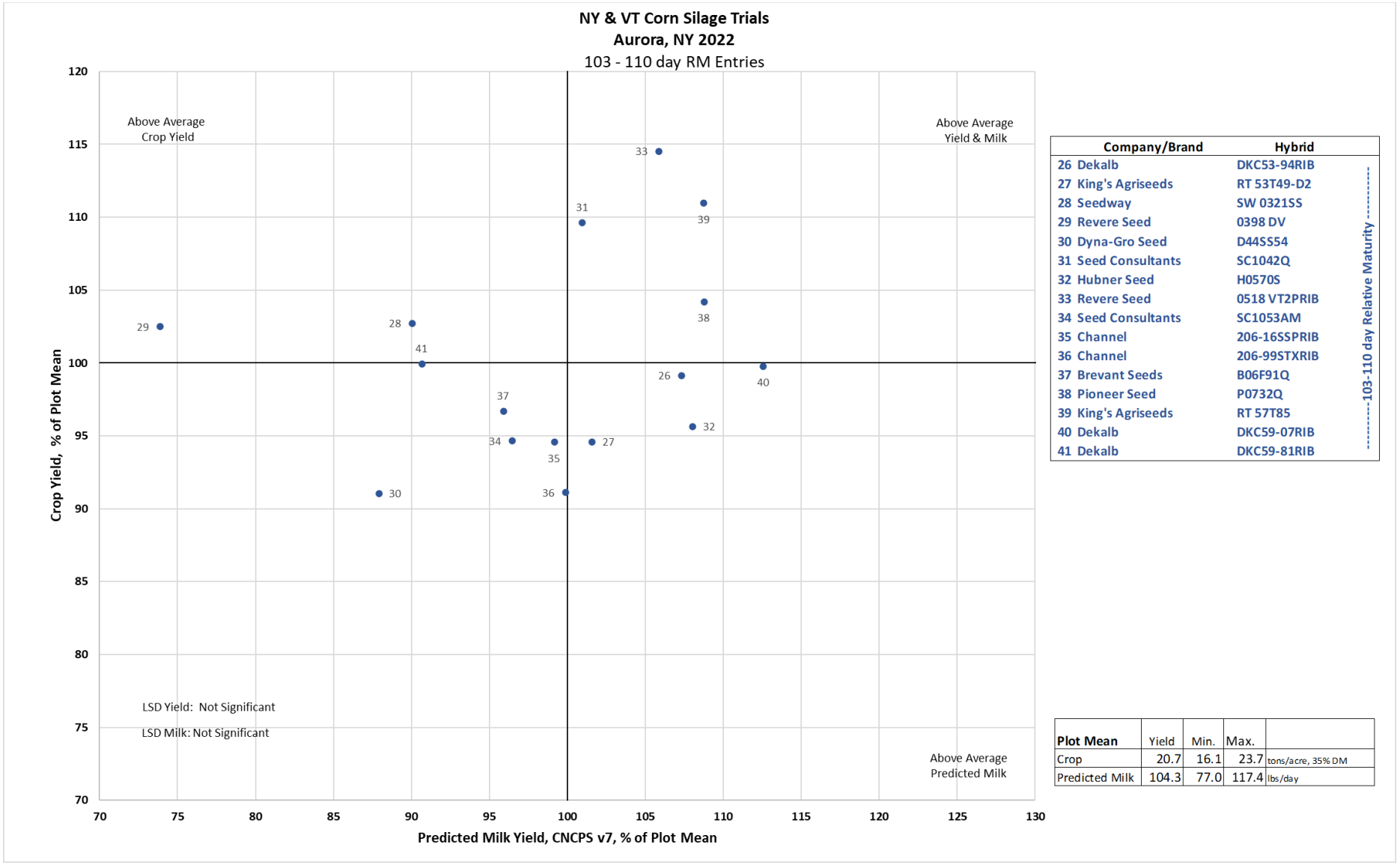


	Company/Brand	Hybrid
1	Hubner Seed	H6134RCSS
2	CNI	Integra 4601
3	Brevant Seeds	B97T04SXE
4	Hubner Seed	H6107RCSS
5	Seed Consultants	SC973AM
6	Seedway	SW 9726TR
7	Revere Seed	9796 V
8	Dekalb	DKC48-34RIB
9	Revere Seed	9827 SSXRIB
10	Syngenta Seeds	NK9874-3220
11	Growmark, Inc	FS 4927T RIB
12	Revere Seed	9916 VT2PRIB
13	Syngenta Seeds	NK9922-5222
14	Channel	200-42VT2PRIB
15	Dyna-Gro Seed	D40VC41
16	Dekalb	DKC50-87RIB
17	Pioneer Seed	P0035Q
18	Seed Consultants	SC1003AM
19	Seedway	SW 0030SS
20	Channel	201-07SSPRIB
21	Growmark, Inc	FS 5101X RIB
22	Growmark, Inc	FS 5115X RIB
23	Seed Consultants	SC1018AM
24	Brevant Seeds	B02V87AMXT
25	Hubner Seed	H6225RCSS

96-110 day Relative Maturity

Plot Mean	Yield	Min.	Max.	
Crop	20.7	16.1	23.7	tons/acre, 35% DM
Predicted Milk	104.3	77.0	117.4	lbs/day

Figure 7c: Aurora, NY 96–110-day RM hybrids, 103-110 RM entries *(cont.)*.



Company/Brand	Hybrid
26 Dekalb	DKC53-94RIB
27 King's Agriseeds	RT 53T49-D2
28 Seedway	SW 0321SS
29 Revere Seed	0398 DV
30 Dyna-Gro Seed	D44SS54
31 Seed Consultants	SC1042Q
32 Hubner Seed	H0570S
33 Revere Seed	0518 VT2PRIB
34 Seed Consultants	SC1053AM
35 Channel	206-16SSPRIB
36 Channel	206-99STXRIB
37 Brevant Seeds	B06F91Q
38 Pioneer Seed	P0732Q
39 King's Agriseeds	RT 57T85
40 Dekalb	DKC59-07RIB
41 Dekalb	DKC59-81RIB

103-110 day Relative Maturity

Plot Mean	Yield	Min.	Max.	
Crop	20.7	16.1	23.7	tons/acre, 35% DM
Predicted Milk	104.3	77.0	117.4	lbs/day

Table 6: Comparative Hybrid Performance across Locations and Years

Footnotes for Table 6

[1]Comparative values based on mean equal to 100%, Crop Yield is reported in tons/acre, 35% DM and Milk Yield is reported in lbs/day
[2]Environments are site-year combinations: all hybrids listed were tested at three sites in 2022, with some hybrids represented over multiple trial years
[3]In 2022, hybrids formerly marketed under the Local Seed Company brand were transitioned to the Revere Seed brand.

Table 6a: 80 - 95-day Relative Maturity (RM)

Company/Brand	Hybrid	RM	2022		All Years		
			Comparative Crop Yield	Comparative Milk Yield	Comparative Crop Yield	Comparative Milk Yield	No. Environments[2]
			% of overall mean[1]				
Revere Seed[3]	8607 DV	86	94	96	98	94	9
CNI	Integra 3718	87	96	94			3
King's Agriseeds	RT 38T89-D1	88	105	88			3
Dekalb	DKC39-54RIB	89	99	97	97	99	6
Seed Consultants, Inc.	SC893AM	89	100	92			3
Brevant Seeds	B90R92Q	90	95	97	101	98	6
Growmark, Inc	FS 4095X RIB	90	104	102	100	101	9
Pioneer Seed	P9193Q	90	102	106	102	106	3
Seed Consultants, Inc.	SC901Q	90	102	109	101	107	6
Seedway	SW 9035SS	90	96	95			3
Brevant Seeds	B91K05Q	91	98	108			3
Hubner Seed	H4061RC2P	91	102	96			3
CNI	Integra STP4128	91	97	98			3
Revere Seed[3]	9108 VT2PRIB	91	102	102	102	100	9
Dekalb	DKC42-04RIB	92	102	97	103	99	12
Channel	193-91STXRIB	93	103	113	100	110	6
Growmark, Inc	FS 4303X RIB	93	93	95	97	101	9
King's Agriseeds	RT 43T48	93	100	87	105	91	6
Seedway	SW 9333SS	93	98	106			3
Channel	195-51STXRIB	95	98	109			3
Dekalb	DKC45-07RIB	95	96	110	99	102	18
Dekalb	DKC45-74RIB	95	110	107			3
CNI	Integra 4509	95	104	108			3
King's Agriseeds	RT 45T09-D2	95	98	94	100	95	6
Seedway	SW 9550SS	95	109	93			3
Revere Seed[3]	9598 DV	95	99	100	102	96	9

Table 6b: 96 - 110-day Relative Maturity (RM)

Company/Brand	Hybrid	RM	2022		All Years		
			Comparative Crop Yield	Comparative Milk Yield	Comparative Crop Yield	Comparative Milk Yield	No. Environments[2]
			% of overall mean[1]				
Hubner Seed	H6134RCSS	96	106	91	103	97	9
CNI	Integra 4601	96	111	94	111	94	3
Brevant Seeds	B97T04SXE	97	117	80	111	88	6
Hubner Seed	H6107RCSS	97	110	83			3
Seed Consultants, Inc.	SC973AM	97	108	85			3
Seedway	SW 9726TR	97	125	84			3
Revere Seed[3]	9796 V	97	128	87	108	83	9
Dekalb	DKC48-34RIB	98	117	89			3
Revere Seed[3]	9827 SSXRIB	98	131	95			3
Syngenta Seeds	NK9874-3220	98	114	80			3
Growmark, Inc	FS 4927T RIB	99	129	80			3
Revere Seed[3]	9916 VT2PRIB	99	109	85			3
Syngenta Seeds	NK9922-5222	99	108	92			3
Channel	200-42VT2PRIB	100	110	88			3
Dyna-Gro Seed	D40VC41	100	106	81	106	98	9
Dekalb	DKC50-87RIB	100	114	76	108	79	6
Pioneer Seed	P0035Q	100	108	89			3
Seed Consultants, Inc.	SC1003AM	100	113	88			3
Seedway	SW 0030SS	100	111	94	107	96	6
Channel	201-07SSPRIB	101	108	86			3
Growmark, Inc	FS 5101X RIB	101	117	87	111	97	9
Growmark, Inc	FS 5115X RIB	101	102	87			3
Seed Consultants, Inc.	SC1018AM	101	107	90	107	103	6
Brevant Seeds	B02V87AMXT	102	109	79	105	102	9
Hubner Seed	H6225RCSS	102	109	86	99	97	18
Dekalb	DKC53-94RIB	103	77	115			3
King's Agriseeds	RT 53T49-D2	103	75	120			3
Seedway	SW 0321SS	103	83	124			3
Revere Seed[3]	0398 DV	103	78	107	90	95	6
Dyna-Gro Seed	D44SS54	104	73	121			3
Seed Consultants, Inc.	SC1042Q	104	84	132	92	120	6
Hubner Seed	H0570S	105	79	113			3
Revere Seed[3]	0518 VT2PRIB	105	85	122			3
Seed Consultants, Inc.	SC1053AM	105	79	124			3
Channel	206-16SSPRIB	106	77	104			3
Channel	206-99STXRIB	106	75	142			3
Brevant Seeds	B06F91Q	106	83	132			3
Pioneer Seed	P0732Q	106	81	122			3
King's Agriseeds	RT 57T85	107	82	131			3
Dekalb	DKC59-07RIB	109	80	127	100	105	15
Dekalb	DKC59-81RIB	109	79	109			3

Table 7: Description of Seed Traits for Hybrids listed in Tables 4 and 5.

Table 7a. 80 - 95-day Relative Maturity (RM)

Brand	Hybrid	RM	Trait Package
Brevant	B90R92Q	90	Qrome
Brevant	B91K05Q	91	Qrome
Channel	193-91STXRIB	93	Smartstax RIB Complete (SSRIB)
Channel	195-51STXRIB	95	Smartstax RIB Complete (SSRIB)
CNI	Integra 3718	87	VT Double Pro (VT2P)
CNI	Integra STP4128	91	VT Double Pro (VT2P)
CNI	Integra 4509	95	VT Double Pro (VT2P)
Dekalb	DKC39-54RIB	89	Smartstax RIB Complete (SSRIB)
Dekalb	DKC42-04RIB	92	Smartstax RIB Complete (SSRIB)
Dekalb	DKC45-07RIB	95	Smartstax RIB Complete (SSRIB)
Dekalb	DKC45-35RIB	95	VT Double Pro RIB Complete (VT2PRIB)
Dekalb	DKC45-74RIB	95	Smartstax RIB Complete (SSRIB)
Growmark FS	FS 4095X RIB	90	Smartstax RIB Complete (SSRIB)
Growmark FS	FS 4303X RIB	93	Smartstax RIB Complete (SSRIB)
Hubner	H4061RC2P	91	VT Double Pro (VT2P)
Pioneer	P9193Q	90	Qrome
Redtail-King's Agriseeds	RT 38T89-D1	88	Agrisure Duracade 5122 EZ
Redtail-King's Agriseeds	RT 43T48	93	Agrisure Viptera 3220 EZ
Redtail-King's Agriseeds	RT 45T09-D2	95	Agrisure Duracade 5222 EZ
Revere	8607 DV	86	Agrisure Duracade 5222 EZ
Revere	9108 VT2PRIB	91	VT Double Pro (VT2P)
Revere	9598 DV	95	Agrisure Duracade 5222 EZ
Seed Consultants, Inc.	SC893AM	89	Acremax (AM)
Seed Consultants, Inc.	SC901Q	90	Qrome
Seedway	SW 9035SS	90	SmartStax (SS)
Seedway	SW 9333SS	93	SmartStax (SS)
Seedway	SW 9550SS	95	SmartStax (SS)

Table 7b. 96 - 110-day Relative Maturity

Brand	Hybrid	RM	Trait Package
Brevant	B97T04SXE	97	SmartStax Enlist (SXE)
Brevant	B02V87AMXT	102	Acremax Xtreme (AMXT)
Brevant	B06F91Q	106	Qrome
Channel	200-42VT2PRIB	100	VT Double Pro RIB Complete (VT2PRIB)
Channel	201-07SSPRIB	101	Smartstax Pro RIB Complete (SSPRIB)
Channel	206-16SSPRIB	106	Smartstax Pro RIB Complete (SSPRIB)
Channel	206-99STXRIB	106	Smartstax RIB Complete
CNI	Integra 4601	96	VT Double Pro (VT2P)
Dekalb	DKC48-34RIB	98	Smartstax RIB Complete (SSRIB)
Dekalb	DKC50-87RIB	100	Smartstax RIB Complete (SSRIB)
Dekalb	DKC53-94RIB	103	Smartstax RIB Complete (SSRIB)
Dekalb	DKC59-07RIB	109	Smartstax RIB Complete (SSRIB)
Dekalb	DKC59-81RIB	109	Smartstax RIB Complete (SSRIB)
Dyna-Gro	D40VC41	100	VT Double Pro (VT2P)
Dyna-Gro	D44SS54	104	VT Double Pro (VT2P)
Growmark FS	FS 4927T RIB	99	Trecepta (TR)
Growmark FS	FS 5101X RIB	101	Smartstax RIB Complete (SSRIB)
Growmark FS	FS 5115X RIB	101	Smartstax RIB Complete (SSRIB)
Hubner	H6134RCSS	96	Smartstax RIB Complete (SSRIB)
Hubner	H6107RCSS	97	Smartstax RIB Complete (SSRIB)
Hubner	H6225RCSS	102	Smartstax RIB Complete (SSRIB)
Hubner	H0570S	105	Smartstax RIB Complete (SSRIB)
Pioneer	P0035Q	100	Qrome
Pioneer	P0732Q	106	Qrome
Redtail-King's Agriseeds	RT 53T49-D2	103	Agrisure Duracade 5222 EZ
Redtail-King's Agriseeds	RT 57T85	107	Agrisure Viptera 3111
Revere	9796 V	97	Agrisure Viptera 3220 EZ
Revere	9827 SSXRIB	98	Smartstax RIB Complete (SSRIB)
Revere	9916 VT2PRIB	99	VT Double Pro (VT2P)
Revere	0398 DV	103	Agrisure Duracade 5222 EZ
Revere	0518 VT2PRIB	105	VT Double Pro (VT2P)
Seed Consultants, Inc.	SC973AM	97	Acremax (AM)
Seed Consultants, Inc.	SC1003AM	100	Acremax (AM)
Seed Consultants, Inc.	SC1018AM	101	Acremax (AM)
Seed Consultants, Inc.	SC1042Q	104	Qrome
Seed Consultants, Inc.	SC1053AM	105	Acremax (AM)
Seedway	SW 9726TR	97	Trecepta (TR)
Seedway	SW 0030SS	100	SmartStax (SS)
Seedway	SW 0321SS	103	SmartStax (SS)
Syngenta NK	NK9874-3220	98	Agrisure Viptera 3220 EZ
Syngenta NK	NK9922-5222	99	Agrisure Duracade 5222 EZ

Table 8: Trait descriptions

The Handy Bt Trait Table for U.S. Corn Production, updated MARCH 2022

Trait packages in alphabetical order (acronym that may be used)	**Bt protein(s) (or other trait) in package**	**Marketed for control of:** BCW	CEW	ECB	FAW	SB	SCB	SWCB	TAW	WBC	CR	**Resistance confirmed to the combination of Bts in package** (check local situation)	**Herbicide trait** GR	LL	E	**Non-Bt Refuge % (cornbelt)**
AcreMax (AM)	Cry1Ab Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	x	x		5% in bag
AcreMax CRW (AMRW)	Cry34/35Ab1										x	NCR WCR	x	x		10% in bag
AcreMax1 (AM1)	Cry1F Cry34/35Ab1	x		x	x	x	x	x			x	ECB FAW SWB WBC NCR WCR	x	x		10% in bag 20% ECB
AcreMax Leptra (AML)	Cry1Ab Cry1F Vip3A	x	x	x	x	x	x	x	x	x			x	x		5% in bag
AcreMax TRIsect (AMT)	Cry1Ab Cry1F mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	x	x		10% in bag
AcreMax Xtra (AMX)	Cry1Ab Cry1F Cry34/35Ab1	x	x	x	x	x	x	x			x	CEW FAW WBC NCR WCR	x	x		10% in bag
AcreMax Xtreme (AMXT)	Cry1Ab Cry1F mCry3A Cry34/35Ab1	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	x	x		5% in bag
Agrisure 3010 (BR)	Cry1Ab		x	x			x	x				CEW	x	x		20%
Agrisure 3000GT & 3011A	Cry1Ab mCry3A		x	x			x	x			x	CEW WCR	x	x		20%
Agrisure Viptera 3110 (VR)	Cry1Ab Vip3A	x	x	x	x	x	x	x	x	x			x	x		20%
Agrisure Viptera 3111 (A4)	Cry1Ab Vip3A mCry3A	x	x	x	x	x	x	x	x	x	x	WCR	x	x		20%
Agrisure 3120 E-Z Refuge (BZ)	Cry1Ab Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	x	See bag tag. EZ0=no EZ1=yes		5% in bag
Agrisure 3122 E-Z Refuge	Cry1Ab Cry1F mCry3A Cry34/35Ab1	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	x			5% in bag
Agrisure Viptera 3220 E-Z (VZ)	Cry1Ab Cry1F Vip3A	x	x	x	x	x	x	x	x	x			x			5% in bag
Agrisure Viptera 3330 E-Z	Cry1Ab Vip3A Cry1A.105/Cry2Ab2	x	x	x	x	x	x	x	x	x			x			5% in bag
Agrisure Duracade 5122 E-Z (D1)	Cry1Ab Cry1F mCry3A eCry3.1Ab	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	x			5% in bag
Agrisure Duracade 5222 E-Z (D2)	Cry1Ab Cry1F Vip3A mCry3A eCry3.1Ab	x	x	x	x	x	x	x	x	x	x	WCR	x			5% in bag
Agrisure Duracade 5332-E-Z	Cry1A.105/Cry2Ab2 Cry1Ab Vip3A mCry3A eCry3.1Ab	x	x	x	x	x	x	x	x	x	x	WCR	x	x		5% in bag
Herculex I (HXI)	Cry1F	x		x	x	x	x	x				ECB FAW SWB WBC	x	x		20%
Herculex RW (HXRW)	Cry34/35Ab1										x	NCR WCR	x	x		20%
Herculex XTRA (HXX)	Cry1F Cry34/35Ab1	x		x	x	x	x	x			x	ECB FAW SWB WBC NCR WCR	x	x		20%
Intrasect (YHR)	Cry1Ab Cry1F	x	x	x	x	x	x	x				CEW FAW WBC	x	x		5%
Intrasect TRIsect (CYHR)	Cry1Ab Cry1F mCry3A	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	x	x		20%
Intrasect Xtra (YXR)	Cry1Ab Cry1F Cry34/35Ab1	x	x	x	x	x	x	x			x	CEW FAW WBC NCR WCR	x	x		20%
Intrasect Xtreme (CYXR)	Cry1Ab Cry1F mCry3A Cry34/35Ab1	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	x	x		5%
Leptra (VYHR)	Cry1Ab Cry1F Vip3A	x	x	x	x	x	x	x	x	x			x	x		5%
Powercore [a] (PW) PW Refuge Advanced [b] (PWRA)	Cry1A.105/Cry2Ab2 Cry1F	x	x	x	x	x	x	x				CEW WBC	x	x		[a]5% [b]5% in bag
Powercore Enlist (PWE)	Same as Powercore	x	x	x	x	x	x	x				CEW WBC	x	x	x	5% in bag
QROME (Q)	Cry1Ab Cry1F mCry3A Cry34/35Ab1	x	x	x	x	x	x	x			x	CEW FAW WBC WCR	x	x		5% in bag
SmartStax [a] (SX,STX or SS) STX Refuge Advanced [b] (SXRA) STX RIB Complete [b] (SSRIB)	Cry1A.105/Cry2Ab2 Cry1F Cry3Bb1 Cry34/35Ab1	x	x	x	x	x	x	x			x	CEW WBC NCR WCR	x	x		[a]5% [b]5% in bag
SmartStax Enlist (SXE)	Same as SmartStax	x	x	x	x	x	x	x			x	Same as SmartStax	x	x	x	5% in bag
SmartStax Pro w/ RNAi Technology (SSPRORIB)	Same as SmartStax + DvSnf7 dsRNA	x	x	x	x	x	x	x			x	CEW WBC	x	x		5% in bag
Trecepta [a] (TRE) Trecepta RIB Complete [b] (TRERIB)	Cry1A.105/Cry2Ab2 Vip3A	x	x	x	x	x	x	x	x	x			x			[a]5% [b]5% in bag
TRIsect (CHR)	Cry1F mCry3A	x		x	x	x	x	x			x	ECB FAW SWB WBC WCR	x	x		20%
VT DoublePRO [a] (VT2P) VT2P RIB Complete[b] (VT2PRIB)	Cry1A.105/Cry2Ab2		x	x	x	x	x	x				CEW	x			[a]5% [b]5% in bag
VT TriplePRO [c] (VT3P) VT3P RIB Complete [d] (VT3PRIB)	Cry1A.105/Cry2Ab2 Cry3Bb1		x	x	x	x	x	x			x	CEW NCR WCR	x			[c]20% [D]10% in bag
Yieldgard Corn Borer (YGCB)	Cry1Ab		x	x			x	x				CEW	x			20%
Yieldgard Rootworm (YGRW)	Cry3Bb1										x	NCR WCR	x			20%
Yieldgard VT Triple (VT3)	Cry1Ab Cry3Bb1		x	x			x	x			x	CEW NCR WCR	x			20%

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

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December 7, 2022 Figure 6 & 7 Correction