NEW YORK and VERMONT CORN SILAGE HYBRID TRIALS – 2017

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The New York corn silage hybrid trials expanded in 2017 with a total of 72 hybrids tested and the addition of three locations. Twenty-three hybrids were entered into the 80-95 day relative maturity group (Early-Mid) and were tested at two locations in NY (Hu-Lane Farm in Albion and the Willsboro Research Farm in Willsboro) and one location in VT (Borderview Farm in Alburgh). Forty-nine hybrids were entered into the 96-100 day relative maturity group (Mid-Late) and were tested at two locations in NY (Greenwood Farms in Madrid and the Musgrave Research Farm in Aurora) and one location in VT (Borderview Farm in Alburgh). The average Growing Degree Days (**GDD**; 86-50°F system) from May through August for years 2005 to 2017 is 2031 GDD at Albion, 2025 GDD at Willsboro, 1971 GDD at Alburgh, 2071 GDD at Aurora, and 1939 GDD at Madrid (Table 1a and 1b). Seed companies were invited to submit hybrids into either maturity group for a fee. The purpose of this trial is to provide independent, local data to aid in producer's decision making and consultation recommendations. In 2016, we introduced a new concept for evaluating the impact of varying nutrient and digestibility characteristics of corn silage hybrids by utilizing the Cornell Net Carbohydrate and Protein System (CNCPS). Using version 6.55, results from 2016 showed a large range in predicted milk yield values based upon large predicted differences in feed intake of cows fed the example ration among the hybrids. With further understanding of the role of undigested NDF ($uNDF_{240}$) and an ability to now look at potential differences in feed intake based upon predicted rumen pools of aNDFom and $uNDF_{240}$, we chose to utilize CNCPS v. 7.0 for the 2017 analysis.

The NY and VT corn silage hybrid trials was made possible with support from dairy producers, participating seed companies, Cornell University, the University of Vermont, the New York Farm Viability Institute, the Northern New York Agricultural Development Program, and the New York State Agricultural Experiment Station.

MATERIALS AND METHODS

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. The early-mid hybrids were planted in Alburgh, VT on May 18th, in Albion, NY on May 17th, and in Willsboro on May 21st. The mid-late hybrids were planted in Alburgh, VT on May 17th, in Madrid, NY on May 18th, and in Aurora, NY on May 25th. Hybrids were planted in a randomized complete block design, with 3 replications. The Albion, NY site has a Hilton loam soil type, was previously planted with soybeans and received 32 units N/acre at planting and an additional 132 units N/acre was applied as sidedress. The Willsboro, NY site has a Stafford fine sandy loam soil type, was previously planted with Fallow, received 15 units N/acre at planting and 90 units N/acre were applied as sidedress. Both Alburgh, VT sites have a Covington silty clay loam soil type, were previously planted with corn and received 25 units N/acre at planting. Additionally, 125 units N/acre were applied as sidedress at both VT locations. The Aurora, NY site has a Honeoye silt loam soil type, was previously planted with winter wheat, and received 25 units N/acre at planting and an additional 107 units N/acre were applied as sidedress. The Madrid, NY location has a Stockholm loamy fine sand soil type, was previously planted with 4th year corn and received 94 units of manure N/acre prior to planting with an additional 32 units N/acre at planting. The Madrid site did not receive sidedress nitrogen.

The early-mid hybrids were harvested on Sept. 12th in Albion, Sept. 26th in Willsboro, and Sept. 20th in Alburgh. The mid-late hybrids were harvested on Sept. 20th in Aurora, Sept. 28th in Madrid, and Sept. 28th in Alburgh. From planting to harvest, the early-mid hybrids had 2004 GDD in Albion, 2131 GDD in Willsboro, and 1928 GDD in Alburgh (86-50 system). From planting to harvest, the mid-late hybrids had 1975 GDD in Aurora, 2087 GDD in Madrid, and 2077 GDD in Alburgh (86-50 system).

The goal was to harvest all hybrids at about 65% (±3%) moisture. The maturity groups were monitored and harvest decisions were made by doing whole plant dry matter (DM) testing 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 6 to 8 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 electronic load cells at the Willsboro location with plot weights determined from the RCI software computer interface on-board the tractor at a target cutting height of 6 to 8 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 6 to 8 inches.

An approximate 500 g sample was taken in duplicate per plot replicate, resulting in 18 samples per entry across the three sites. Samples were sealed in a gallon-sized freezer bag 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 overnight for immediate analysis. One of the duplicate samples from each plot was kept as a retained sample while the other sample (9 samples/hybrid entry across the three sites) was submitted to Cumberland Valley Analytical Services (Waynesboro, PA) where NIR procedures were used to determine CP, starch, lignin, ash, total fatty acids (**TFA**), aNDFom, NDF digestibility (**NDFD**; 12, 30, 120, 240 h), undigested NDF (**uNDFom**; 30, 120, and 240 h) and 7-h starch digestibility. Several companies paid an additional fee for wet chemistry analysis on NDFD at 30 h.

Corn silage hybrid performance was evaluated by the predicted milk production output of the Cornell Net Carbohydrate and Protein System (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 ration. There is a direct correlation between dry matter intake and milk production. Therefore, by limiting the amount of feed consumed, the cow's milk production potential is limited. Corn silage chemistry results were applied to a typical New York high corn silage-based diet (forage at ~60% of diet DM; corn silage ~70% 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. The base diet was formulated by Dr. Tom Overton, Dr. Van Amburgh, and Michael Dineen. Initially, each individual replicate replaced the base corn silage in the diet at the same DM amount. Subsequently, dry matter intake of the entire ration was adjusted based on the first limiting rumen fill factor; 1) the rumen aNDFom pool size or 2) 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 dry matter intake potential of the total ration based upon hybrid selection and is a more biologically robust representation compared to evaluating hybrids on a constant dry matter intake 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.

Data were analyzed using PROC GLM in SAS 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

Overall growing conditions across the Northeast in 2017 can be described as having above average rainfall and below average heat accumulation as measured by Growing Degree Days (GDD, 86/50) as shown in Table 1a and 1b. Corn planting was a challenge across much of the region due to excessive rainfall during planting. Crop yields were generally good in areas where the crop did not suffer from long periods of saturated soil conditions. The 2017 trial locations presented here generally had adequate drainage (natural and artificial) which minimized the effects of excessive rainfall on hybrid performance

Given the generally cool growing season and relatively late harvest, the month of September represented a more significant contribution to the growing season compared to typical years (Table 1a and 1b). A common observation across the region was that a relatively warm and dry September allowed the corn crop across much of the regions, including these trial locations, to reach proper maturity for corn silage harvest. Resulting in overall satisfactory crop yields across trial locations. .

Growing Conditions

Albion

Rainfall in May, July, August and September were well above average; however, June rainfall was nearly one inch below the average. Despite the below average rainfall in June the crop did not show any moisture related stress, conversely, these conditions likely contributed to less losses of nitrogen (N) and better overall crop performance in an overall wet growing season. Following below average GDD accumulation in May, the months of June, July and August were very close to average and September was above average. While the seasonal total remained below average, the deficiency in GDD's at this location was not as significant as it was at other locations.

Willsboro

Rainfall in May was slightly above average while June received nearly double the average rainfall. However, July, August and September were all slightly below the average. This field was fallow the previous year with some sod grasses present. While the composition of the sod would not be considered a well maintained sod capable of supplying the level of sod N credits found in the Cornell Nitrogen Guidelines for Field Crops in New York (http://nmsp.cals.cornell.edu/guidelines/nutrientguide.html), it is reasonable that this previous crop provided some N to the 2017 corn crop. This in conjunction with sidedress N (Table 2) applied in late June following the significant rains likely explains why no N deficiencies were observed despite overall above average rainfall on a sandy soil. Growing Degree Day accumulation from May, June, July and August was below average, while September was slightly above average. Inconsistent emerged plant populations at this location can be attributed in part to a planter malfunction and should not be viewed as a reflection of hybrid performance.

Alburgh

Rainfall was slightly below average in May and well below average in September. It was above average in June, July and August. Due to excessive rainfall in June and July, a split sidedress N application was applied at corn stage V4 and V7 totaling 125 units of N per acre (Table 2). Growing Degree Day accumulation was below average in May, June, July and August and above average in September. As all hybrids in the 80-95 and 96-110 day relative maturity range were planted at this location, harvest was split to target 35% dry matter at harvest for each RM group with the first harvest taking place September 20th and the second harvest taking place September 28th (Table 2).

Aurora

Rainfall was well above average in May, June and July but below average in August and September. Despite the drier end to the season, total rainfall for the season was still well above average. Conversely, GDD (86/50) were below average in all months except September which was slightly above average. While N was applied to meet crop needs (Table 2), excessive leaching resulted in visual N deficiencies at harvest. Though it should be noted that there was not a strong correlation between visual deficiencies (recorded prior to harvest) and depressed yields, indicating that N firing of lower corn leaves may not provide a strong indicator of the crops N status (data not shown). This may be due to the N demands of the crop at different stages of growth and how they lined up with the time of leaching, as well as, the genetics of certain hybrids. Particularly the hybrids with N use efficiency and stay green characteristics.

Madrid

Rainfall and GDD accumulation followed a similar pattern as Aurora, though rainfall remained above average in August before falling well below average in September. Overall the stature of the corn was very impressive at this location as shown by the high yields measured. Despite the excessive rainfall, N deficiencies were not observed at this location. Most likely much of this can be attributed to manure as the main source of N at this location (Table 2) and the reduced potential for leaching compared to commercial fertilizer N sources. Leaf disease ratings were performed prior to harvest and significant eyespot (*Auereobasidium zeae*) was observed on many hybrids at this location, likely exacerbated by conditions of excessive moisture. There was not a strong correlation between eyespot pressure or yield and quality parameters (Lawrence, Cummings, 2018).

Forage Quality and Yield

Results are presented in Tables 3 and 4 for each trial location. The tables provide yield and forage quality (crude protein, aNDFom, starch, lignin, 30 hr NDFD, 240 hr uNDFD, predicted milk yield, etc.) results for each hybrid entry. The growing season had varying impacts on two major factors associated with corn silage quality; starch content and fiber digestibility.

As a result of the cool, wet growing season starch content was quite variable and largely driven by the ability of the crop to mature prior to harvest. Dry matter at harvest varied within location and across location as did starch content. The average dry matter and starch content were lowest at the Albion and Aurora locations. Willsboro was also wetter than the target DM at harvest though starch content was relatively high, which could have been influenced by a lower overall yield and a favorable ear to stover ratio.

Chemistry analysis of fiber content (aNDFom) and fiber digestibility (30 hr NDFd and 240 hr uNDF) reflected the adverse effects a wet growing season can have as 2017 results showed generally

high levels of fiber with low digestibility. This affects the amount of corn silage cows will be able to consume in a balanced ration.

The amount of corn silage included in a dairy cow's diet is largely driven by the total amount and digestibility of the fiber, with respect to the rest of the diet. In developing the CNCPS ration to evaluate 2017 corn silage, it was determined that the combination of high levels of fiber and low fiber digestibility were creating a scenario where the feeding rate (28 lbs of dry matter from corn silage) and target milk production (100 lbs/day) modeled in the 2016 corn silage trial program was not feasible for 2017 forages. As a result the 2017 diet used to evaluate corn silage hybrids was developed to include an average of 21.3 lbs of dry matter from corn silage and 85 lbs/day of milk.

Figures 2 and 3 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. 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.

The plots are 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 yield and PMY, 2) above average in crop yield and below average in PMY, 3) below average in crop yield and above average in PMY, 4) below average in both crop yield and PMY.

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 most closely reflected the growing conditions experienced on your farm in 2017. Since conditions at a given location can vary greatly from season to season this is a less desirable method of evaluation.

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. Hybrids that consistently performed above average across locations in both crop yield and predicted milk yield (Figures 2 and 3) is a strong indicator of performance. With that said, there were no hybrids in the trial that performed above the plot mean at all three locations they were entered, which speaks to the variability in growing conditions experienced in 2017.

There were a small number of hybrids that performed above average for both parameters in two of the three locations; Schlessman 916RR, Wolf River Valley 2693RR and Masters Choice MCT4572 in the 80-95 day relative maturity range and Dekalb DKC48-57RIB, Doebler's RPM4115AMXT, Dekalb DKC54-40RIB and Channel 209-15STXRIB in the 96-110 day relative maturity range.

It may not always be desirable to select a hybrid that falls into the first quadrant in Figures 2 and 3 (above average in yield and PMY). Instead, selecting a range of hybrids may be beneficial to accommodate feeding a range of cows. 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 dry matter intake. We suggest working with your agronomist and nutritionist to identify hybrids that would succeed for your farm and meet your nutritional needs.

CONCLUSIONS

Growers using these trial results for hybrid selection are encouraged to use the data presented here to evaluate the average performance of hybrids at the diverse locations represented in the trials and to use this data as an indicator of what level of performance was representative of the growing season. This information can then be used to compare the performance of corn silage grown on your farm to determine if your crop performed satisfactory relative to what can be expected from the growing season, based on trial performance, or if there is a need to evaluate other hybrids that may better fit the conditions on an individual farm.

Overall, all locations used for the 2017 trials experienced wet and cool conditions, which was representative of the growing season across the region yet, the trial results underline the highly variable growing conditions for the individual locations.

Compared to 2016, corn grown for silage in 2017 will present new challenges. Drought plagued the majority of NY in 2016, resulting in highly digestible corn silage and therefore allowing an animal to increase its dry matter intake however, crop yields were low. Wet conditions in 2017 resulted in higher fiber and lower fiber digestibility which may limit the animal's dry matter intake of these feeds. Strategies for feeding this silage will require limiting the inclusion rate of corn silage in the diet and or realizing depressed milk yield potential.

The results of this study will be published on www.fieldcrops.org and will be disseminated electronically through several channels of Cornell University and Cornell Cooperative Extension.

ACKNOWLEDGEMENTS

We thank the seed companies that participated in 2017 for their collaboration. We urge all seed companies to participate in our corn silage testing program in 2018 so we can provide the best information under New York growing conditions to our New York dairy producers.

We thank Greenwood Dairy and Hu-Lane Farms for their ongoing collaboration and support of the program; Paul Stachowski and Jeff Stanton at the Cornell Musgrave Research Farm, Aurora; Mike Davis, Adam Seyward and Delvin Meseck at the Willsboro Research Farm and Roger Rainville, Borderview Farm for their efforts during field operations; Michael Dineen, Rodrigo Molano, and Andrew LaPierre for assistance with the CNCPS data analysis; Kitty O'Neill and Mike Hunter for assistance at harvest.

Additional financial support was provided by New York Farm Viability Institute, Northern New York Agricultural Development Program, New York Corn Growers Association and the Cornell University Agricultural Experiment Station.

Table 1a: NY & VT Corn Silage Trails, 80-95 RM, Weather Data, 2017 Growing Season

	Rainfall, inches			GDD (86/50 F)		
	Alburgh, VT	Albion, NY	Willsboro, NY	Alburgh, VT	Albion, NY	Willsboro, NY
May	3.81	6.46	4.10	243	244	251
June	7.02	2.64	8.23	435	498	471
July	5.38	5.26	2.99	544	622	595
August	4.74	3.26	2.14	522	573	574
September	1.92	1.55	2.34	428	459	450
May-August	20.95	17.62	17.46	1743	1936	1890
May-September	22.87	19.17	19.80	2171	2395	2339
			Average 2005-2017			
May-August	18.26	13.74	15.77	1971	2031	2025
May-September	22.30	16.90	18.77	2355	2443	2434

Table 1b: NY & VT Corn Silage Trails, 96-110 RM, Weather Data, 2017 Growing Season

	Rainfall, inches			GDD (86/50 F)		
	Alburgh, VT	Aurora, NY	Madrid, NY	Alburgh, VT	Aurora, NY	Madrid, NY
May	3.81	4.54	6.88	243	253	249
June	7.02	4.14	5.84	435	467	453
July	5.38	6.99	6.76	544	595	555
August	4.74	1.56	3.81	522	529	514
September	1.92	2.29	2.05	428	424	407
May-August	20.95	17.23	23.29	1743	1843	1771
May-September	22.87	19.52	25.34	2171	2267	2177
			Average 2005-2017			
May-August	18.26	14.28	16.97	1971	2071	1939
May-September	22.30	17.84	20.87	2355	2483	2320

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), Albion, NY (1e).

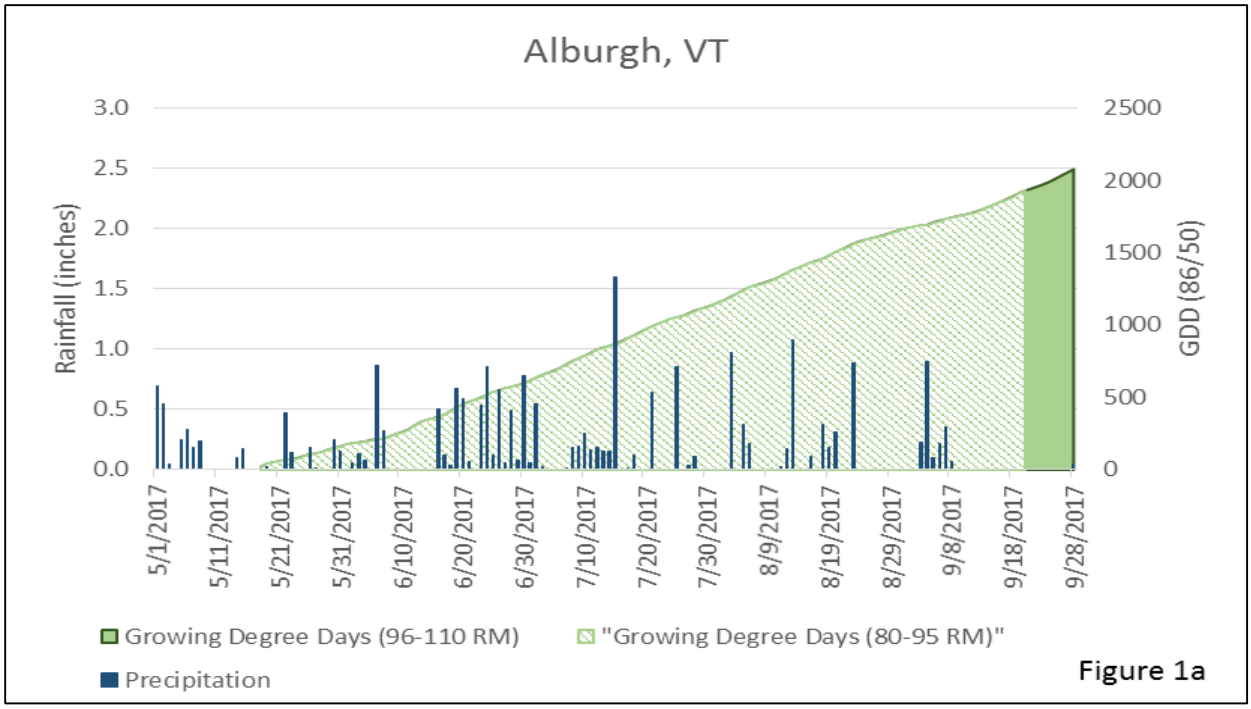


Figure 1a

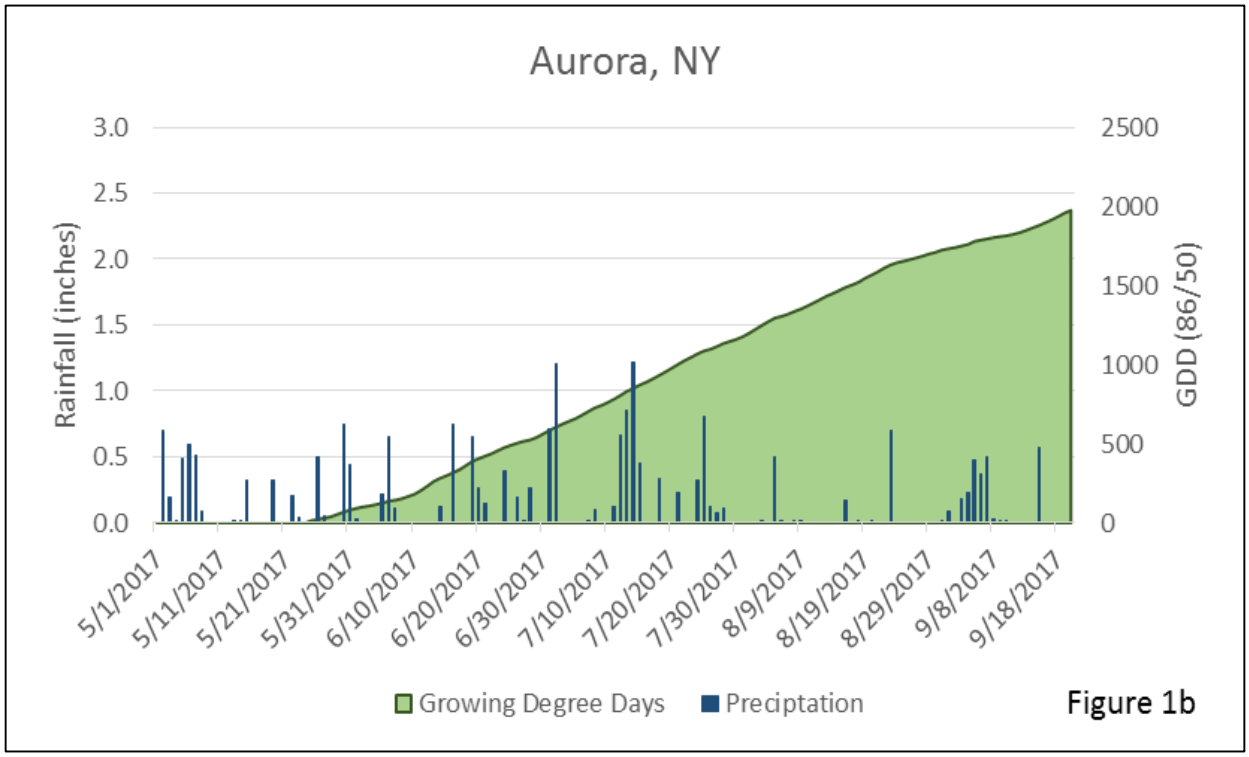


Figure 1b

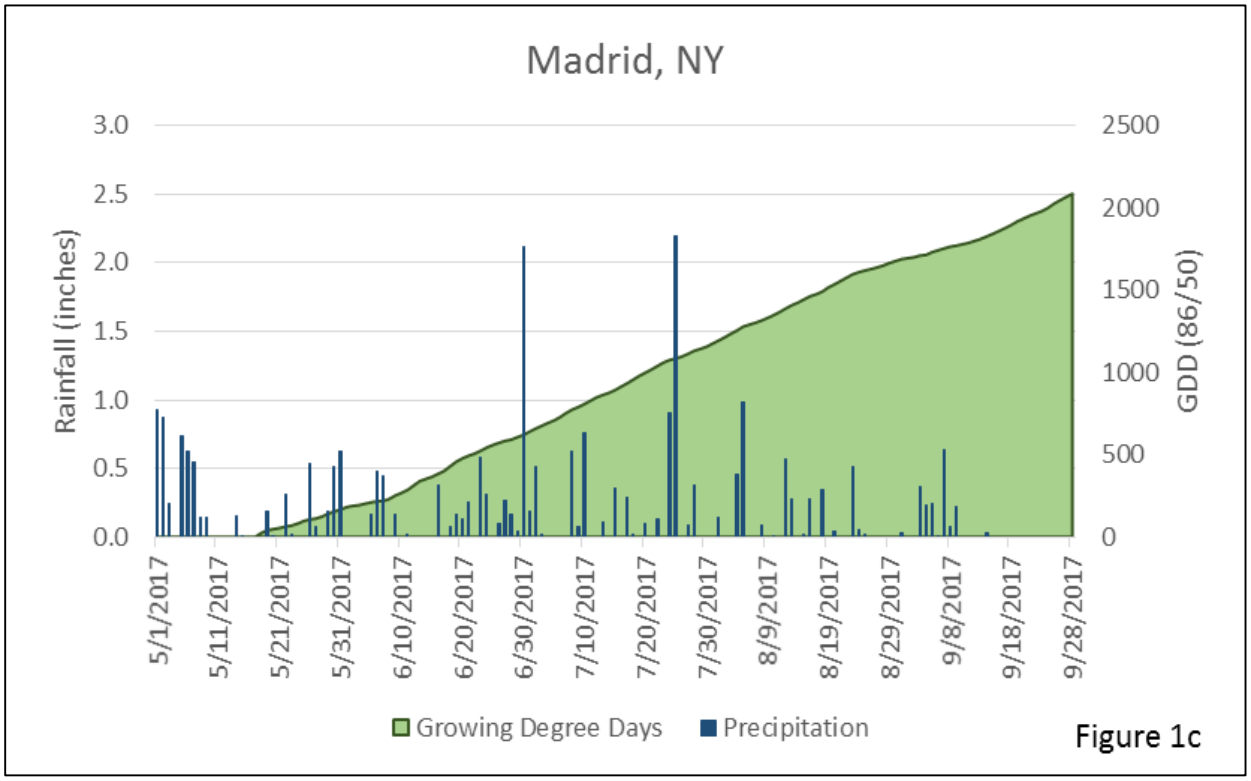


Figure 1c

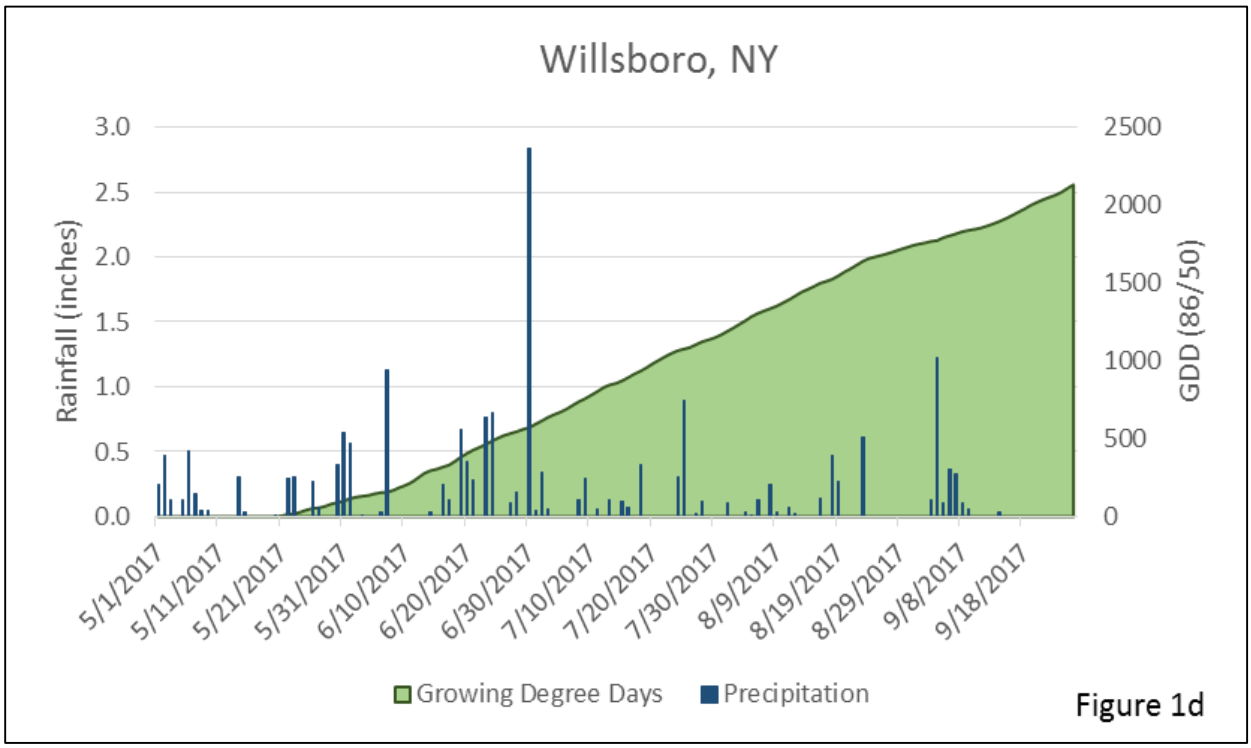


Figure 1d

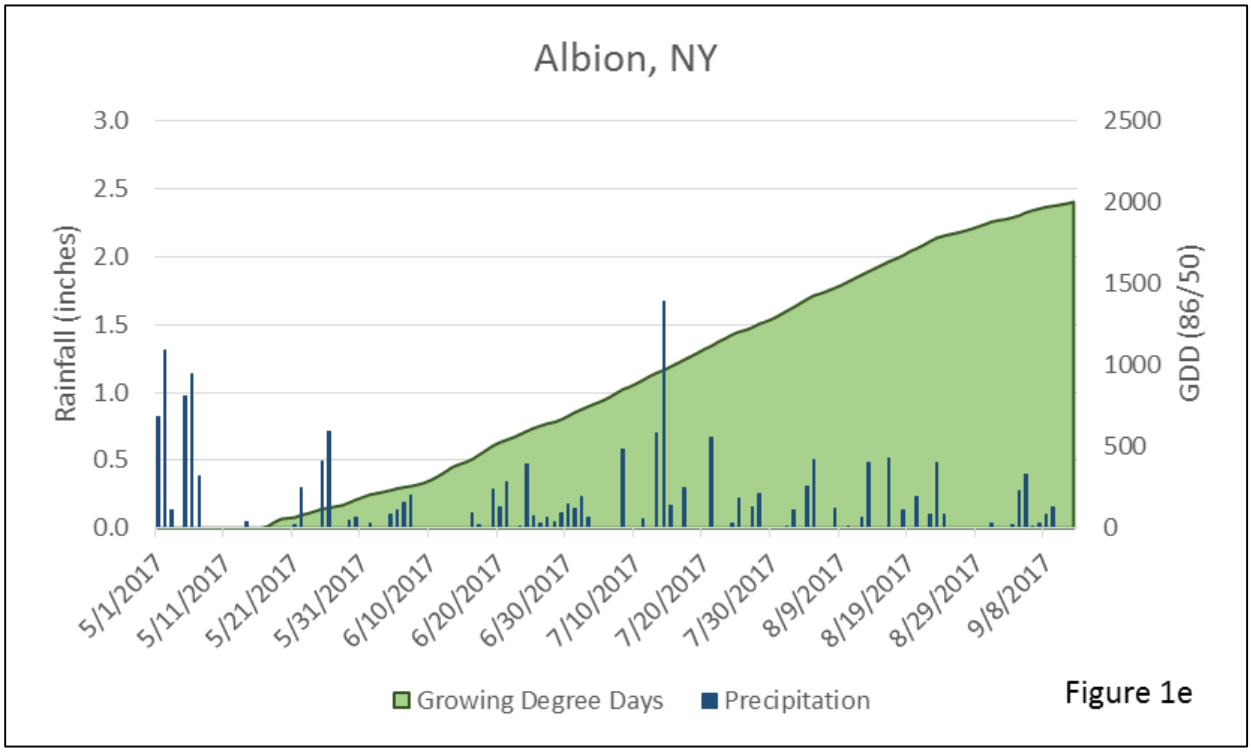


Figure 1e

Table 2. NY & VT Corn Silage Trials, Field Information, 2017 Growing Season

	80 - 95 Day Relative Maturity			96-110 Day Relative Maturity		
	Alburgh, VT	Albion, NY	Willsboro, NY	Alburgh, VT	Aurora, NY	Madrid, NY
Planting Date	18-May	17-May	21-May	17-May	25-May	18-May
Harvest Date	20-Sep	12-Sep	26-Sep	28-Sep	20-Sep	28-Sep
Previous Crop	Corn	Soybeans	Fallow	Corn	Winter Wheat	Corn
Starter N	25	32	15	25	25	32
Manure N	-	-	-	-	-	94
Sidedress N	125	132	90	125	107	0
Total Fertilizer N	150	164	105	150	132	126
Soil Type	Covington Silty Clay Loam	Hilton Loam	Stafford Fine Sandy Loam	Covington Silty Clay Loam	Honeoye Silt Loam	Stockholm Loamy Fine Sand

Table 3a: Hybrid traits and performance for 80 – 95 day RM groups at Albion, NY.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
Doebler's PA Hybrids, Inc.	RPM2918AM[3]	6	89	34.4	26.4	37.1	62.2	8.2	2.6	3.0	2.7	33.6	34.1	31.5	57.2	58.5	70.1	72.3	27.7	4.0	28417	106.7	61.1
Masters Choice	MCT3891	3	88	33.5	24.4	34.8	59.9	8.0	2.9	3.0	2.6	37.9	38.5	33.4		58.1	69.6	71.8	28.2	3.6	30167	99.9	58.3
King Fisher	KF 35C10[3]	1	85	32.3	23.2	35.8	60.9	8.8	2.7	2.9	2.5	34.1	34.8	32.5		59.1	70.8	73.0	27.0	4.0	27250	108.0	61.6
Hubner	H4046RC2P	7	88	31.5	22.6	33.9	59.9	7.9	2.9	3.0	2.6	37.5	38.1	30.6	57.2	58.9	70.6	72.8	27.2	3.6	30083	102.1	59.2
Dekalb	DKC36-28RIB	10	86	31.3	23.6	36.5	61.4	8.2	2.7	3.2	2.6	34.7	35.2	33.4		58.5	70.0	72.2	27.8	3.9	31417	104.9	60.4
Growmark FS	40R27SS	10	90	31.1	24.1	34.4	63.0	8.0	2.9	3.0	2.4	36.8	37.4	32.4		57.4	68.8	70.9	29.1	3.5	31250	98.8	58.1
Dekalb	DKC41-99RIB	7	91	30.3	24.5	32.4	62.1	8.3	2.7	3.4	2.3	36.6	37.4	33.6		59.7	71.5	73.7	26.3	3.6	32833	104.1	60.3
Schlessman Hybrids	916RR	2	91	29.8	26.0	27.4	63.1	8.0	3.0	3.1	2.2	40.6	41.4	31.9	61.2	60.3	72.3	74.5	25.5	3.2	32333	101.1	58.8
Seedway	SW3654RR	2	91	29.7	26.0	28.2	62.8	8.6	3.0	3.2	2.1	40.4	41.2	32.6		59.2	70.9	73.1	26.9	3.2	32333	99.5	58.2
NK	NK8920-3010[3]	8	89	29.6	22.7	29.1	60.7	8.8	3.1	3.3	2.3	38.9	39.6	30.0		57.3	68.5	70.6	29.4	3.1	26667	96.1	57.1
85-91 day RM Mean				**31.4**	**24.4**	**33.0**	**61.6**	**8.3**	**2.8**	**3.1**	**2.4**	**37.1**	**37.8**	**32.2**	**58.5**	**58.7**	**70.3**	**72.5**	**27.5**	**3.6**	**30275**	**102.1**	**59.3**
Dyna-Gro/CPS	D34VC54	4	94	32.0	26.3	35.1	64.3	7.6	2.9	3.0	2.4	37.1	37.7	32.1		57.9	69.3	71.5	28.5	3.6	31625	100.5	58.6
Seedway	SW3768GenSS	10	95	31.6	25.2	31.4	62.7	8.3	2.8	2.9	2.2	37.9	38.5	31.9		59.0	70.7	72.9	27.1	3.4	31833	100.0	58.5
Doebler's PA Hybrids, Inc.	RPM3618AMXT	5	96	31.5	27.5	32.1	60.0	8.4	2.8	3.2	2.4	36.7	37.3	33.8	60.4	60.0	71.8	74.1	25.9	3.7	33083	104.0	60.2
Growmark FS	46R77SS	10	95	31.4	23.0	32.4	62.2	8.3	2.7	3.0	2.2	36.8	37.5	32.7		59.0	70.7	72.9	27.1	3.6	29000	102.1	59.3
Dekalb	DKC43-48RIB	9	93	31.3	28.4	31.6	64.2	7.7	3.0	3.1	2.2	38.4	39.1	30.9		57.3	68.6	70.7	29.3	3.3	33833	97.5	57.5
Seedway	SW3600GENSS	10	93	30.8	25.5	34.4	62.3	8.4	2.7	3.1	2.5	35.7	36.4	32.2		59.1	70.7	72.9	27.1	3.8	31542	104.3	60.2
NK	NK9535-3110	11	95	30.6	27.3	34.0	62.7	8.0	3.0	2.9	2.3	35.8	36.4	28.8		55.3	66.2	68.2	31.8	3.3	30500	97.1	57.5
NK	NK9227-3110A	12	92	29.6	25.9	31.2	60.5	8.6	3.1	3.1	2.3	37.3	38.0	27.9		55.4	66.4	68.5	31.5	3.1	31917	96.3	57.1
Dekalb	DKC45-07RIB	10	95	29.6	25.1	29.2	63.1	8.3	2.9	3.5	2.1	40.0	40.7	32.8		59.1	70.8	73.0	27.0	3.2	36000	98.4	58.0
Wolf River Valley Seeds	2693RR	2	93	29.2	26.1	30.7	64.6	8.0	2.9	3.3	2.3	37.5	38.4	31.0		58.3	69.9	72.0	28.0	3.4	33625	102.0	59.3
Masters Choice	MCT4572	11	95	29.0	27.2	33.5	59.3	9.2	2.7	3.1	2.4	34.3	34.9	30.5		58.4	69.9	72.0	28.0	3.7	32167	105.4	60.7
Augusta Seed Corporation	2843	11	93	29.0	26.6	28.7	59.6	8.9	3.1	3.2	2.3	39.1	39.6	28.8	56.9	57.0	68.3	70.4	29.6	3.0	30167	95.1	56.7
King Fisher	KF 43C40	1	93	28.8	22.9	28.8	60.6	9.1	3.0	3.3	2.2	37.6	38.5	28.6		57.0	68.2	70.3	29.7	3.1	27500	96.9	57.6
92-96 day RM Mean				**30.3**	**25.9**	**31.8**	**62.0**	**8.4**	**2.9**	**3.1**	**2.3**	**37.3**	**37.9**	**30.9**	**58.7**	**57.9**	**69.4**	**71.5**	**28.5**	**3.4**	**31753**	**100.0**	**58.6**
LSD (0.10)				**1.6**	**NS[2]**	**4.5**	**1.8**	**0.5**	**NS**	**NS**	**0.3**	**3.6**	**3.6**	**2.3**	**1.9**	**1.7**	**2.1**	**2.1**	**2.1**	**0.6**	**3751**	**6.9**	**2.7**
OverallMean				**30.8**	**25.2**	**32.3**	**61.8**	**8.3**	**2.9**	**3.1**	**2.4**	**37.2**	**37.9**	**31.5**	**58.6**	**58.3**	**69.8**	**71.9**	**28.1**	**3.5**	**31111**	**100.9**	**58.9**

* 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) with all values expressed as % of DM. Jones, L.R., and J. Siciliano-Jones. 2015. Index useful for ranking silage samples. Feedstuffs 17, 19.

[2] - NS = Not Significant

[3] - One plot replicate had a harvest population count < 25,000

[4] - Yield and harvest population data removed due to 2 plot replicates having a harvest population count < 25,000

† See Table 5: Trait Key

Table 3b: Hybrid traits and performance for 80 – 95 day RM groups at Willsboro, NY.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
Doebler's PA Hybrids, Inc.	RPM2918AM	6	89	37.4	19.8	41.3	61.1	7.7	2.9	2.7	2.8	36.6	37.1	30.7	53.6	55.6	66.6	68.6	31.4	3.8	28500	97.0	57.1
Dekalb	DKC41-99RIB	7	91	33.4	19.2	38.5	62.3	7.2	3.2	3.1	2.6	40.5	41.1	32.6		55.4	66.3	68.3	31.7	3.4	26167	91.9	55.1
Masters Choice	MCT3891[4]	3	88	32.5	—	39.1	60.7	7.5	3.1	3.1	2.7	39.2	39.8	33.2		55.8	66.9	68.9	31.1	3.5	—	93.6	55.8
Dekalb	DKC36-28RIB[4]	10	86	32.0	—	42.6	60.3	8.0	2.8	3.6	2.9	35.4	35.9	32.5		55.9	66.9	69.0	31.0	4.0	—	98.6	58.0
Schlessman Hybrids	916RR	2	91	31.5	20.6	36.4	64.5	7.5	3.0	2.9	2.6	39.9	40.6	33.5	54.5	58.8	70.4	72.6	27.4	3.6	29333	99.2	57.8
King Fisher	KF 35C10	1	85	31.4	14.9	38.3	61.8	8.0	3.1	3.1	2.5	40.0	40.6	32.4		56.2	67.3	69.4	30.6	3.4	28667	94.4	56.0
Growmark FS	40R27SS[3]	10	90	31.0	18.8	39.9	62.2	7.6	3.1	3.3	2.7	39.0	39.6	32.1		55.0	65.8	67.9	32.1	3.5	28500	92.7	55.4
Hubner	H4046RC2P	7	88	30.6	17.0	40.6	62.5	7.4	3.0	3.2	2.7	37.8	38.4	31.6	55.4	56.5	67.7	69.8	30.2	3.7	31333	95.9	56.8
NK	NK8920-3010	8	89	30.6	20.4	36.0	60.1	7.9	3.3	3.0	2.6	42.4	43.1	31.9		56.0	67.0	69.1	30.9	3.2	29167	90.1	54.4
Seedway	SW3654RR[3]	2	91	27.8	19.4	31.5	63.6	8.3	3.5	3.8	2.4	43.2	43.9	32.4		55.4	66.4	68.4	31.6	2.9	26167	88.4	54.0
	85-91 day RM Mean			**31.8**	**18.8**	**38.4**	**61.9**	**7.7**	**3.1**	**3.2**	**2.6**	**39.4**	**40.0**	**32.3**	**54.5**	**56.1**	**67.1**	**69.2**	**30.8**	**3.5**	**28479**	**94.2**	**56.0**
Dyna-Gro/CPS	D34VC54	4	94	33.1	19.6	38.5	61.4	7.2	3.1	3.2	2.7	39.1	39.7	31.8		55.0	66.0	68.0	32.0	3.4	31000	92.4	55.4
Seedway	SW3768GenSS	10	95	32.2	19.0	40.9	62.6	7.6	3.0	3.0	2.6	38.1	38.7	33.3		56.2	67.3	69.4	30.6	3.7	28833	94.9	56.4
Wolf River Valley Seeds	2693RR	2	93	32.1	21.7	40.7	63.0	7.2	3.0	3.2	2.9	37.8	38.4	32.3		55.5	66.5	68.5	31.5	3.6	32167	95.4	56.6
Growmark FS	46R77SS[4]	10	95	31.8	—	38.3	63.1	7.7	3.1	3.2	2.8	39.0	39.6	32.6		56.2	67.3	69.4	30.6	3.5	—	94.6	56.2
Dekalb	DKC43-48RIB	9	93	31.6	22.1	38.1	64.6	7.4	3.3	3.3	2.6	39.4	40.0	31.8		54.8	65.6	67.6	32.4	3.3	31500	90.9	54.9
Seedway	SW3600GENSS	10	93	31.0	19.5	37.9	63.3	7.4	3.2	3.4	2.4	40.3	40.9	32.8		55.3	66.2	68.3	31.7	3.3	30667	92.3	55.2
Dekalb	DKC45-07RIB	10	95	30.8	18.4	36.3	61.8	7.8	3.2	3.5	2.5	41.4	42.0	33.2		56.6	67.7	69.8	30.2	3.3	32000	93.6	55.7
NK	NK9535-3110	11	95	30.7	20.8	38.1	63.9	7.5	3.2	3.2	2.7	38.4	39.0	30.4		53.5	64.1	66.1	33.9	3.3	30333	90.5	54.7
Doebler's PA Hybrids, Inc.	RPM3618AMXT	5	96	30.6	19.1	39.4	61.8	7.7	2.9	3.0	2.6	38.8	39.4	34.1	54.3	57.9	69.3	71.5	28.5	3.8	31000	99.7	58.0
Masters Choice	MCT4572	11	95	30.5	23.4	38.3	60.1	8.0	3.1	2.9	2.8	38.6	39.2	31.4		55.4	66.4	68.4	31.6	3.4	32167	94.0	56.0
Augusta Seed Corporation	2843 [3]	11	93	29.7	20.0	37.6	60.7	7.5	3.2	2.9	2.6	40.5	41.1	30.5	56.5	55.1	66.1	68.1	31.9	3.3	26333	91.9	55.0
NK	NK9227-3110A	12	92	28.6	19.2	33.9	62.4	8.0	3.3	3.3	2.5	41.1	41.7	30.5		54.3	65.0	67.1	32.9	3.0	30833	88.8	54.1
King Fisher	KF 43C40[4]	1	93	28.3	—	33.0	60.8	8.8	3.3	3.4	2.6	41.4	42.1	31.4		56.0	67.0	69.1	30.9	3.1	—	92.5	55.4
	92-96 day RM Mean			**30.8**	**20.3**	**37.8**	**62.3**	**7.7**	**3.2**	**3.2**	**2.6**	**39.5**	**40.1**	**32.0**	**55.4**	**55.5**	**66.5**	**68.6**	**31.4**	**3.4**	**30621**	**93.2**	**55.7**
	LSD (0.10)			**1.7**	**3.4**	**4.4**	**NS[2]**	**0.5**	**0.2**	**0.4**	**0.2**	**3.3**	**NS**	**NS**	**NS**	**2.1**	**NS**	**NS**	**NS**	**0.4**	**3698**	**5.1**	**2.0**
	OverallMean			**31.3**	**19.6**	**38.1**	**62.1**	**7.7**	**3.1**	**3.2**	**2.6**	**39.5**	**40.1**	**32.1**	**54.9**	**55.8**	**66.8**	**68.8**	**31.2**	**3.4**	**29719**	**93.6**	**55.8**

* 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) with all values expressed as % of DM. Jones, L.R., and J. Siciliano-Jones. 2015. Index useful for ranking silage samples. Feedstuffs 17, 19.

[2] - NS = Not Significant

[3] - One plot replicate had a harvest population count < 25,000

[4] - Yield and harvest population data removed due to 2 plot replicates having a harvest population count < 25,000

† See Table 5: Trait Key

****** The Willsboro location experience some variability in plant population that should be noted when comparing hybrid performance**

Table 3c: Hybrid traits and performance for 80 – 95 day RM groups at Alburgh, VT.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
Masters Choice	MCT3891	3	88	35.2	31.5	35.9	65.7	7.2	3.4	3.8	2.4	39.1	39.8	30.6		51.5	62.2	64.5	35.5	2.9	32555	84.4	52.6
Doebler's PA Hybrids, Inc.	RPM2918AM	6	89	33.1	28.1	36.4	68.5	7.2	3.4	4.2	2.6	37.7	38.3	29.3	53.8	50.2	61.4	63.7	36.3	2.9	33167	83.6	52.6
Dekalb	DKC36-28RIB	10	86	33.0	25.2	36.5	66.4	7.9	3.2	4.3	2.5	37.4	37.9	30.2		53.5	63.3	65.6	34.4	3.2	33167	88.8	54.6
Dekalb	DKC41-99RIB	7	91	32.8	24.4	35.3	69.7	7.0	3.4	4.1	2.4	39.4	40.0	29.3		52.5	62.5	64.7	35.3	3.0	32861	87.6	53.9
Hubner	H4046RC2P	7	88	32.6	27.8	35.2	69.1	7.3	3.3	4.0	2.4	39.2	39.8	30.5	55.9	53.2	63.4	65.4	34.6	3.1	34389	87.9	54.1
King Fisher	KF 35C10	1	85	31.9	24.7	36.1	68.3	7.4	3.2	3.7	2.3	38.1	38.7	30.5		52.7	63.1	65.4	34.7	3.1	33931	87.1	53.8
NK	NK8920-3010	8	89	31.7	31.9	34.1	67.0	7.7	3.4	3.7	2.5	39.0	39.6	28.9		51.5	61.6	63.5	36.5	2.9	33625	87.1	53.6
Growmark FS	40R27SS	10	90	31.7	24.8	33.6	69.8	7.3	3.4	4.1	2.3	40.0	40.7	29.1		51.9	62.8	65.7	34.3	2.8	33472	85.0	53.0
Schlessman Hybrids	916RR	2	91	30.7	28.6	33.1	69.8	7.6	3.2	4.2	2.4	38.6	39.2	29.7	55.8	54.2	62.7	65.0	35.0	3.0	33167	85.1	53.1
Seedway	SW3654RR	2	91	30.5	28.3	30.8	71.1	7.6	3.5	4.0	2.2	41.9	42.6	30.1		53.2	63.9	65.9	34.1	2.7	32708	84.9	52.8
	85-91 day RM Mean			**32.3**	**27.5**	**34.7**	**68.5**	**7.4**	**3.4**	**4.0**	**2.4**	**39.1**	**39.7**	**29.8**	**55.2**	**52.4**	**62.7**	**64.9**	**35.1**	**3.0**	**33304**	**86.2**	**53.4**
Dyna-Gro/CPS	D34VC54	4	94	32.8	28.7	34.6	71.0	7.4	3.2	4.0	2.3	38.0	38.6	29.7		53.9	63.7	66.0	34.1	3.1	34084	89.4	54.7
Growmark FS	46R77SS	10	95	32.6	27.1	37.0	70.2	7.4	3.1	3.7	2.5	37.5	38.1	30.5		54.3	63.5	65.9	34.1	3.3	34848	89.4	54.6
NK	NK9535-3110	11	95	32.3	34.9	36.3	68.7	7.5	3.2	3.9	2.4	36.3	36.8	28.7		51.8	61.0	63.0	37.0	3.1	32555	86.5	53.5
Seedway	SW3768GenSS	9	95	32.0	27.0	34.6	68.8	7.7	3.4	4.4	2.4	39.6	40.2	31.1		52.3	63.6	66.5	33.5	2.9	32097	87.7	54.0
Dekalb	DKC45-07RIB	9	95	31.7	27.7	32.9	68.9	7.8	3.2	4.3	2.3	39.3	39.9	31.6		55.8	65.3	68.0	32.0	3.1	33625	92.8	56.0
Wolf River Valley Seeds	SW3600GENSS	2	93	31.5	24.1	32.8	70.7	7.2	3.2	4.0	2.3	39.3	39.9	31.6		55.4	65.2	67.9	32.1	3.1	35001	91.1	55.3
NK	NK9227-3110A	12	92	31.2	29.0	35.4	66.4	7.7	3.3	3.7	2.4	36.2	36.8	26.6		51.0	59.6	61.6	38.4	3.0	33625	83.3	52.2
Dekalb	DKC43-48RIB	9	93	31.2	26.9	32.9	70.5	7.1	3.6	4.2	2.3	41.5	42.2	28.8		50.9	62.2	64.2	35.8	2.6	35307	81.5	51.5
Seedway	SW3600GenSS	10	93	31.2	26.1	34.2	67.9	7.4	3.3	4.3	2.3	38.8	39.4	29.6		52.3	62.8	65.0	35.0	2.9	34848	86.9	53.8
Masters Choice	MCT4572	11	95	30.5	29.1	34.6	66.6	7.8	3.3	3.8	2.4	37.0	37.6	27.8		51.5	60.8	63.0	37.0	3.0	33472	84.0	52.5
Doebler's PA Hybrids, Inc.	RPM3618AMXT	5	96	30.5	26.3	33.1	67.3	7.4	3.3	4.2	2.3	40.3	40.9	31.0	53.9	53.8	64.1	66.4	33.6	2.9	33320	85.5	53.2
King Fisher	KF 43C40	1	93	30.5	24.6	32.5	67.9	7.4	3.6	4.0	2.4	41.3	41.9	28.6		50.5	62.1	64.5	35.5	2.6	31485	81.6	51.6
Augusta Seed Corporation	2843	11	93	30.0	26.3	32.2	67.0	8.0	3.3	4.0	2.3	38.7	39.3	28.4	52.8	52.4	62.2	64.5	35.5	2.8	29957	85.2	53.0
	92-96 day RM Mean			**31.4**	**27.5**	**34.1**	**68.6**	**7.5**	**3.3**	**4.0**	**2.4**	**38.8**	**39.4**	**29.5**	**53.3**	**52.8**	**62.8**	**65.1**	**34.9**	**3.0**	**33402**	**86.5**	**53.5**
	LSD (0.10)			**1.8**	**4.1**	**NS[2]**	**2.3**	**NS**	**NS**	**0.3**	**NS**	**NS**	**3.3**	**NS**	**NS**	**2.8**	**2.3**	**2.5**	**2.5**	**NS**	**NS**	**NS**	**NS**
	OverallMean			**31.8**	**27.5**	**34.4**	**68.6**	**7.5**	**3.3**	**4.0**	**2.4**	**38.9**	**39.5**	**29.7**	**54.4**	**52.6**	**62.7**	**65.0**	**35.0**	**3.0**	**33359**	**86.4**	**53.5**

* 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) with all values expressed as % of DM. Jones, L.R., and J. Siciliano-Jones. 2015. Index useful for ranking silage samples. Feedstuffs 17, 19.

[2] - NS = Not Significant

[3] - One plot replicate had a harvest population count < 25,000

[4] - Yield and harvest population data removed due to 2 plot replicates having a harvest population count < 25,000

† See Table 5: Trait Key

Table 4a: Hybrid traits and performance for 96-110 day RM groups at Alburgh, VT.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
King Fisher	KF 49C60	1	99	36.9	28.3	39.5	61.2	7.2	2.9	4.0	2.5	37.7	38.3	32.6		56.5	68.2	70.7	29.3	3.7	31180	97.1	57.4
Hubner	H6124RCSS	10	96	36.7	33.7	36.8	63.5	7.6	3.2	3.8	2.5	39.4	40.0	29.7	55.2	53.2	63.8	65.7	34.3	3.1	32403	86.6	53.4
Dekalb	DKC46-20RIB	9	96	35.7	30.8	39.7	64.2	7.4	3.2	3.5	2.5	37.4	38.0	29.8		52.0	61.7	63.7	36.3	3.3	30263	85.2	52.8
Dekalb	DKC48-57RIB	7	98	35.7	33.1	34.5	62.0	7.4	3.2	4.2	2.4	40.5	41.1	30.8		54.2	64.2	66.2	33.8	3.1	30416	86.5	53.5
Pioneer	P9789AMXT	13	98	34.5	28.2	39.3	63.1	7.4	3.2	3.9	2.7	37.5	38.1	30.1		51.6	61.1	63.0	37.0	3.2	29346	83.3	52.2
Mycogen Seeds	TMF2Q419	15	96	34.5	24.9	33.1	61.6	6.6	3.3	3.7	2.4	42.9	43.5	32.1	58.5	52.5	62.5	64.4	35.6	2.7	30568	81.4	51.1
Augusta Seed Corporation	3750	16	100	34.3	30.6	36.3	60.9	7.2	3.3	4.0	2.6	39.9	40.5	29.4	53.4	52.2	60.6	62.6	37.4	3.0	30874	80.6	51.0
Augusta Seed Corporation	2847	11	97	34.1	29.1	42.0	62.3	7.6	3.0	3.9	3.1	33.9	34.5	29.8	57.3	52.4	62.0	64.1	35.9	3.7	31027	92.1	55.6
Masters Choice	MCT4934	16	99	33.7	30.9	33.2	62.0	6.7	3.6	4.2	2.3	41.5	42.1	27.1		48.7	58.2	60.1	39.9	2.5	30568	73.8	48.4
Masters Choice	MCT4632	11	96	33.4	27.6	37.9	60.5	7.8	3.0	4.2	2.5	36.9	37.4	29.8		53.2	62.9	65.1	34.9	3.3	29804	89.1	54.6
Channel	199-72STXRIB	10	99	33.1	27.5	35.3	65.2	6.8	3.4	3.9	2.6	39.9	40.5	30.1		51.4	61.0	62.8	37.2	2.9	28734	84.0	52.4
Mycogen Seeds	TMF99Q47	15	99	33.0	27.7	35.9	61.6	6.9	3.2	3.4	2.7	40.1	40.8	31.8	56.0	52.6	62.0	64.1	35.9	3.0	30263	85.6	52.8
Doebler's PA Hybrids, Inc.	3916GRQ	14	99	32.8	28.8	33.6	64.3	7.1	3.4	3.6	2.2	41.6	42.2	29.3	57.1	51.2	60.7	62.6	37.4	2.7	29499	79.0	50.3
Channel	198-98STXRIB	10	98	32.8	25.0	33.3	64.5	7.1	3.6	4.1	2.4	40.8	41.4	26.9		49.5	58.5	60.3	39.7	2.6	30110	73.2	48.3
Hubner	H6157RCSS	10	94	31.6	28.4	39.8	66.4	6.6	3.0	3.4	2.6	36.9	37.4	31.8	55.8	53.4	62.4	64.4	35.6	3.5	29651	86.9	53.4
Hubner	H6191RCSS	10	99	31.5	25.6	36.3	62.8	7.4	3.4	3.9	2.7	39.1	39.7	28.4	54.1	50.5	59.3	61.2	38.8	2.9	31027	78.5	50.2
Growmark FS	49R79SS	17	99	30.5	25.0	32.7	63.2	8.0	3.5	4.5	2.3	41.2	41.8	30.8		51.7	60.2	62.0	38.0	2.7	30874	78.9	50.5
Mycogen	BMR97B37	18	97	29.6	26.8	32.7	63.3	7.7	2.9	3.8	2.5	39.5	40.1	32.8	61.8	59.0	70.7	72.9	27.1	3.5	31027	99.6	58.3
Mycogen	F2F499	15	99	28.3	27.2	30.2	61.9	7.2	2.7	4.1	2.4	41.6	42.2	36.0	67.6	63.4	76.0	78.3	21.7	3.7	31027	105.0	60.4
	94-100 day RM Mean			**33.3**	**28.4**	**35.9**	**62.9**	**7.2**	**3.2**	**3.9**	**2.5**	**39.4**	**40.0**	**30.5**	**57.7**	**53.1**	**63.0**	**65.0**	**35.0**	**3.1**	**30456**	**85.6**	**53.0**
NK	NK0199	14	101	36.5	27.5	36.1	64.7	7.5	3.3	3.6	2.2	38.8	39.4	29.0		51.5	61.4	63.5	36.5	3.0	30626	85.0	52.8
Channel	202-20STXRIB	10	102	35.0	32.5	34.4	62.9	7.5	3.5	4.3	2.5	40.4	41.0	28.4		51.0	59.9	61.7	38.3	2.8	31027	78.9	50.4
Growmark FS	53R41SS	17	103	34.8	26.6	37.8	65.1	7.3	3.4	3.5	2.6	38.6	39.2	28.8		50.4	58.5	60.3	39.7	3.0	29346	74.7	48.6
Hubner	H6257RCSS	10	104	34.4	30.4	34.5	62.9	7.6	3.2	4.1	2.4	38.9	39.5	30.4	55.6	53.0	63.5	65.4	34.6	3.0	29651	87.3	53.8
Dekalb	DKC52-30RIB	10	102	34.4	25.6	37.9	65.4	6.9	3.2	3.1	2.4	38.4	39.0	29.1		52.1	60.6	62.4	37.6	3.1	31485	80.5	50.8
Doebler's PA Hybrids, Inc.	RPM4115AMXT	5	101	33.4	29.4	35.6	62.1	6.8	3.3	3.9	2.4	40.4	41.1	31.9	57.5	52.5	61.3	63.2	36.8	3.0	30721	83.4	52.1
Dekalb	DKC55-21RIB	7	105	33.3	25.1	38.7	61.8	6.9	3.2	3.6	2.7	38.5	39.1	31.5		51.5	60.3	62.2	37.8	3.1	32097	82.2	51.5
Seedway	SW5430GenSS	10	105	33.0	24.8	33.1	63.3	6.6	3.6	3.7	2.6	41.4	42.0	28.5		49.8	58.6	60.5	39.5	2.6	30263	75.5	49.0
Doebler's PA Hybrids, Inc.	RPM4318AMXT	5	103	32.9	28.9	37.6	65.0	7.2	3.1	3.8	2.4	38.2	38.8	30.6	56.1	53.0	63.5	65.4	34.6	3.2	30874	86.9	53.7
NK	NK0142	19	101	32.8	25.8	39.4	62.2	7.2	3.3	3.7	2.6	37.2	37.7	28.1		49.7	58.6	60.4	39.6	3.1	30263	78.1	50.0
NK	NK0519	19	105	32.8	24.3	35.7	64.6	6.7	3.4	3.2	2.5	39.6	40.2	27.2		51.0	61.7	63.6	36.4	2.9	31791	83.5	52.1
Dekalb	DKC54-40RIB	7	104	32.8	27.5	34.2	62.8	7.4	3.3	3.8	2.5	39.7	40.3	29.6		52.0	61.4	63.3	36.7	2.9	31485	82.5	51.9
Channel	203-01STXRIB	10	103	32.6	29.1	31.9	62.4	7.2	3.3	4.6	2.3	41.3	42.0	29.9		52.7	63.3	65.7	34.3	2.9	31638	83.9	52.8
King Fisher	KF 52C20	1	102	32.4	28.2	37.2	64.6	7.2	3.4	3.8	2.5	38.8	39.4	27.0		49.7	58.1	60.1	39.9	2.9	31333	77.5	49.8
Masters Choice	MCT5371	3	103	32.2	29.8	33.2	63.9	6.9	3.3	4.2	2.3	40.6	41.3	30.1		51.7	60.8	63.0	37.0	2.8	31485	82.6	51.9
Hubner	H6225RCSS	10	102	31.9	25.8	36.1	64.4	6.9	3.0	3.6	2.4	39.9	40.5	33.6	57.2	56.4	67.2	69.2	30.8	3.4	32708	94.8	56.4
Wolf River Valley Seeds	3805FLRR	20	103	31.5	28.2	32.1	63.4	7.5	3.6	3.7	2.4	41.8	42.4	27.3	55.1	49.7	60.3	62.1	37.9	2.5	30110	78.4	50.3
Pioneer	P0242AMXT	13	104	30.9	26.7	36.7	66.3	7.1	3.3	4.0	2.4	38.9	39.5	28.7		50.5	59.5	61.3	38.7	2.9	29651	79.2	50.5
	101-105 day RM Mean			**33.2**	**27.6**	**35.7**	**63.8**	**7.1**	**3.3**	**3.8**	**2.5**	**39.5**	**40.1**	**29.4**	**56.3**	**51.6**	**61.0**	**63.0**	**37.0**	**2.9**	**30920**	**81.9**	**51.6**

Table 4a cont.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
Masters Choice	MCT5661	3	106	32.9	32.9	34.9	65.6	6.9	3.4	3.5	2.4	39.8	40.4	27.9		51.0	60.4	62.6	37.4	2.8	30568	80.6	51.0
Dekalb	DKC57-77RIB	7	107	31.9	28.6	35.7	65.8	6.4	3.5	3.4	2.5	41.2	41.8	29.3		51.3	59.6	61.4	38.6	2.8	30110	74.9	48.6
King Fisher	KF 58C80	1	108	31.9	33.3	34.8	63.4	7.6	3.1	4.2	2.4	39.1	39.8	31.0		55.2	65.7	67.8	32.2	3.2	31944	90.5	55.1
Channel	207-27STXRIB	10	107	31.5	32.4	35.2	62.8	7.1	3.2	4.4	2.5	39.4	40.0	32.0		53.8	63.0	65.2	34.8	3.1	30110	84.5	52.7
Doebler's PA Hybrids, Inc.	RPM4717AMX	22	107	31.5	29.6	36.9	65.1	7.5	3.6	3.6	2.5	39.6	40.2	26.9	53.4	49.0	56.7	58.4	41.6	2.8	30263	75.1	48.6
Augusta Seed Corporation	4759	11	109	31.0	24.2	32.4	62.7	7.0	3.6	4.0	2.4	41.5	42.1	26.2	56.0	49.1	57.3	59.5	40.5	2.5	30568	72.6	47.9
Dyna-Gro/CPS	D49VC39	4	109	30.9	31.3	30.4	62.3	7.7	3.6	4.0	2.5	43.4	44.1	29.5		51.7	60.3	62.2	37.8	2.5	29957	77.5	49.8
Seedway	SW6630GENSS	10	110	30.6	26.1	37.5	62.0	7.2	3.1	4.1	2.9	37.6	38.2	32.7		53.4	64.0	66.0	34.0	3.2	30263	89.0	54.6
Dairyland Seed	HiDF-3407RA	15	107	30.3	31.4	30.6	64.8	7.1	3.9	3.9	2.3	43.9	44.6	27.8	52.7	47.6	57.5	59.3	40.7	2.2	30874	70.4	47.0
Channel	209-15STXRIB	10	109	30.0	31.8	35.3	63.9	7.2	3.4	3.6	2.5	39.4	40.0	29.3		51.9	61.1	63.0	37.0	2.9	31333	82.4	51.7
Seedway	SW5559GTRW	21	106	29.9	26.5	32.7	66.1	6.7	3.5	3.7	2.2	42.6	43.2	30.2		51.6	60.6	62.5	37.5	2.6	31333	79.6	50.5
Pioneer	P0921AMXT	13	110	29.5	30.2	30.1	64.6	7.8	3.5	4.5	2.2	41.4	42.1	28.7		51.3	61.7	63.6	36.4	2.6	30110	80.5	51.3
106 -110day RM Mean				**31.0**	**29.8**	**33.9**	**64.1**	**7.2**	**3.4**	**3.9**	**2.4**	**40.7**	**41.4**	**29.3**	**54.0**	**51.4**	**60.7**	**62.6**	**37.4**	**2.8**	**30619**	**79.8**	**50.7**
LSD (0.10)				**2.4**	**4.0**	**4.6**	**NS[2]**	**NS**	**0.4**	**0.6**	**0.3**	**NS**	**NS**	**NS**	**4.1**	**3.4**	**4.3**	**4.3**	**4.3**	**0.6**	**NS**	**11.4**	**4.5**
OverallMean				**32.7**	**28.4**	**35.3**	**63.5**	**7.2**	**3.3**	**3.9**	**2.5**	**39.8**	**40.4**	**29.8**	**56.7**	**52.1**	**61.7**	**63.7**	**36.3**	**3.0**	**30666**	**82.8**	**51.9**

* 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) with all values expressed as % of DM. Jones, L.R., and J. Siciliano-Jones. 2015. Index useful for ranking silage samples. Feedstuffs 17, 19.

[2] - NS = Not Significant

[3] - One plot replicate had a harvest population count < 25,000

[4] - Yield and harvest population data removed due to 2 plot replicates having a harvest population count < 25,000

† See Table 5: Trait Key

Table 4b: Hybrid traits and performance for 96-110 day RM groups at Madrid, NY.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
Dekalb	DKC48-57RIB	7	98	42.0	31.8	35.7	56.6	7.0	3.6	4.2	2.5	41.5	42.1	28.0		49.7	59.0	60.8	39.2	2.7	35333	75.8	49.2
King Fisher	KF 49C60	1	99	40.9	32.7	43.5	56.5	6.9	3.1	4.0	2.7	35.7	36.3	30.5		51.6	60.6	62.5	37.5	3.6	35333	90.3	54.6
Augusta Seed Corporation	3750	16	100	40.0	34.5	38.2	56.9	7.1	3.5	3.9	2.8	39.3	39.9	28.0	52.6	50.5	59.7	61.6	38.4	3.0	35167	79.2	50.5
Hubner	H6124RCSS	10	96	39.6	33.9	35.6	59.0	7.0	3.9	4.1	2.6	43.5	44.1	26.8	56.7	49.3	59.2	61.6	38.4	2.6	35833	76.7	49.3
Mycogen Seeds	TMF2Q419	15	96	39.2	33.2	36.7	58.6	7.4	3.4	4.0	2.7	40.6	41.2	31.3	55.4	51.5	60.8	62.6	37.4	3.1	35833	80.4	50.8
Pioneer	P9789AMXT	13	98	39.0	31.8	35.4	60.3	7.6	3.7	3.9	2.6	41.9	42.5	28.1		50.6	59.6	61.5	38.5	2.7	36000	79.2	50.3
Hubner	H6191RCSS	10	99	37.4	29.7	38.2	54.0	7.2	3.7	3.8	2.7	41.3	41.9	27.1	52.8	48.5	57.8	59.6	40.4	2.8	35833	74.8	48.5
Mycogen	F2F499	15	99	37.2	29.7	39.9	55.5	7.6	2.7	3.6	3.1	36.3	36.8	35.8	61.7	60.7	72.7	75.0	25.0	4.3	34500	105.9	60.8
Doebler's PA Hybrids, Inc.	3916GRQ	14	99	36.8	33.5	34.2	57.5	8.2	3.7	4.0	2.4	41.0	41.6	26.4	57.5	50.6	60.7	62.5	37.5	2.7	33167	82.9	51.9
Augusta Seed Corporation	2847	11	97	36.8	30.6	33.5	54.7	7.8	4.1	4.5	2.6	43.9	44.6	24.7	52.4	48.0	57.7	59.5	40.5	2.4	34500	71.0	47.3
Growmark FS	49R79SS	17	99	36.8	30.1	36.3	59.4	8.0	3.7	4.1	2.7	39.7	40.3	26.8		48.2	57.5	59.4	40.6	2.8	35667	73.8	48.5
Hubner	H6157RCSS	10	94	36.5	30.5	38.0	60.2	7.4	3.6	4.3	2.7	40.1	40.7	28.1	53.9	50.0	59.1	61.0	39.0	3.0	34333	76.8	49.6
Masters Choice	MCT4632	11	96	36.5	31.6	37.7	52.3	7.7	3.4	4.7	2.6	39.1	39.7	29.5		51.2	60.1	62.1	37.9	3.0	35500	80.0	50.9
Mycogen Seeds	TMF99Q47	15	99	36.3	30.3	34.4	58.7	7.4	3.6	3.7	2.8	41.1	41.7	28.3	51.0	50.7	60.7	62.6	37.4	2.7	35667	81.0	51.1
Channel	199-72STXRIB	10	99	36.2	34.2	36.2	60.0	7.4	3.4	4.0	2.7	39.3	39.9	30.4		52.9	62.6	64.6	35.4	3.1	34333	85.5	53.0
Dekalb	DKC46-20RIB	9	96	36.0	31.7	31.7	58.9	7.3	3.8	4.4	2.3	43.2	43.9	27.1		49.2	56.9	58.7	41.3	2.4	34500	70.7	47.1
Channel	198-98STXRIB	10	98	35.7	30.0	34.3	59.7	6.8	4.1	4.2	2.5	42.7	43.4	25.4		45.8	54.0	55.7	44.3	2.3	35000	65.7	45.1
Masters Choice	MCT4934	16	99	35.1	32.5	33.9	58.6	7.4	4.0	4.3	2.5	41.7	42.4	23.3		45.5	53.3	55.2	44.8	2.3	35667	66.6	45.5
Mycogen	BMR97B37	18	97	33.9	30.1	35.1	59.7	7.6	3.2	3.8	2.8	40.3	40.9	34.6	59.9	59.1	70.8	73.0	27.0	3.6	34667	98.8	58.0
	94-100 day RM Mean			**37.5**	**31.7**	**36.2**	**57.7**	**7.4**	**3.6**	**4.1**	**2.6**	**40.6**	**41.3**	**28.4**	**55.4**	**50.7**	**60.1**	**62.1**	**37.9**	**2.9**	**35096**	**79.7**	**50.6**
NK	NK0142	19	101	40.2	30.6	37.7	59.9	7.2	3.8	4.2	2.6	40.0	40.6	26.0		46.5	54.3	56.5	43.5	2.6	35833	69.9	46.8
Growmark FS	53R41SS	17	103	38.8	29.8	40.3	60.8	7.7	3.2	3.6	2.9	36.6	37.2	30.0		52.1	62.4	64.4	35.6	3.4	36167	88.1	54.0
Masters Choice	MCT5371	3	103	38.4	32.9	38.5	61.1	7.2	3.1	3.4	2.6	36.4	37.0	29.7		54.2	64.9	66.9	33.1	3.5	32500	94.0	56.3
NK	NK0199	14	101	37.6	32.1	37.3	60.9	7.5	3.4	3.5	2.5	38.6	39.2	28.5		52.3	62.7	64.6	35.4	3.1	34000	84.6	52.7
Dekalb	DKC52-30RIB	10	102	36.9	31.7	36.7	61.2	7.2	3.7	3.8	2.5	40.1	40.7	26.5		49.2	57.7	59.5	40.5	2.8	36500	76.2	49.1
Dekalb	DKC55-21RIB	7	105	36.3	30.8	35.3	61.3	7.0	3.9	3.9	2.6	42.1	42.7	26.0		47.6	56.2	57.9	42.1	2.5	33667	68.9	46.4
Channel	203-01STXRIB	10	103	36.2	31.8	40.6	59.3	7.1	3.1	3.9	3.0	36.8	37.4	31.9		53.8	64.4	66.4	33.6	3.5	36500	92.2	55.7
Doebler's PA Hybrids, Inc.	RPM4115AMXT	5	101	35.7	30.7	33.9	57.9	7.2	3.7	4.1	2.4	43.5	44.2	29.1	56.4	50.1	59.7	62.0	38.0	2.6	37500	76.9	49.6
Hubner	H6257RCSS	10	104	35.7	32.0	38.2	60.1	7.4	3.4	4.4	2.8	38.3	38.9	29.5	53.7	51.8	60.1	62.3	37.7	3.1	34833	82.8	52.0
Hubner	H6225RCSS	10	102	35.4	32.5	37.2	60.6	7.0	3.7	4.0	2.6	40.2	40.8	26.9	53.4	49.2	57.0	58.7	41.3	2.8	35000	74.4	48.4
NK	NK0519	19	105	34.7	32.9	32.6	60.7	7.2	4.1	3.9	2.6	43.5	44.2	24.9		46.1	55.6	57.3	42.7	2.2	33667	67.4	45.8
Dekalb	DKC54-40RIB	4	104	34.4	35.0	35.2	53.9	7.6	3.6	3.9	2.8	41.1	41.8	28.4		50.7	60.7	62.6	37.4	2.8	37000	80.9	51.2
Seedway	SW5430GenSS	10	105	34.0	35.9	32.4	60.9	7.3	4.0	4.3	2.7	43.1	43.7	24.5		46.6	55.4	57.1	42.9	2.3	37167	67.8	46.0
Channel	202-20STXRIB	10	102	32.6	31.4	35.9	59.3	7.2	3.8	4.1	2.6	40.3	40.9	26.5		48.4	58.0	59.8	40.2	2.7	34833	72.6	48.0
Pioneer	P0242AMXT	13	104	32.4	30.7	34.5	61.6	7.5	3.6	4.1	2.4	40.6	41.3	27.7		49.9	58.2	60.0	40.0	2.7	33833	75.9	49.1
King Fisher	KF 52C20	1	102	31.7	31.9	32.0	61.3	7.5	4.0	4.3	2.3	43.2	43.9	26.0		47.8	57.0	58.8	41.2	2.3	33000	70.8	47.3
Doebler's PA Hybrids, Inc.	RPM4318AMXT	5	103	30.9	31.7	33.2	59.3	7.8	3.7	4.1	2.4	42.0	42.7	27.0	53.8	51.2	60.1	61.9	38.1	2.7	31833	77.1	49.7
Wolf River Valley Seeds	3805FLRR	20	103	30.3	26.6	25.6	56.1	8.2	4.5	4.3	2.4	49.6	50.4	24.3	53.9	46.3	55.6	57.6	42.4	1.8	32000	56.0	41.7
	101-105 day RM Mean			**35.1**	**31.7**	**35.4**	**59.8**	**7.4**	**3.7**	**4.0**	**2.6**	**40.9**	**41.5**	**27.4**	**54.2**	**49.7**	**58.9**	**60.8**	**39.2**	**2.7**	**34769**	**76.5**	**49.4**

Table 4b cont.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
Masters Choice	MCT5661	3	106	35.4	36.2	37.1	63.8	6.6	3.4	3.3	2.5	38.7	39.3	27.5		50.3	60.2	62.1	37.9	2.9	34000	78.6	50.2
Doebler's PA Hybrids, Inc.	RPM4717AMX	22	107	34.1	31.7	30.3	60.4	7.0	4.1	3.7	2.4	44.7	45.3	24.8	56.3	47.9	57.0	58.8	41.2	2.2	35000	67.9	46.0
Dyna-Gro/CPS	D49VC39	4	109	32.7	33.3	29.0	59.3	7.8	4.0	3.7	2.6	43.5	44.2	24.3		48.8	57.5	59.3	40.7	2.3	32000	69.0	46.5
Dekalb	DKC57-77RIB	7	107	32.7	29.6	35.5	61.9	6.5	3.6	3.8	2.6	41.1	41.8	28.8		50.8	59.7	62.0	38.0	2.8	35667	79.3	50.5
Seedway	SW6630GENSS	10	110	32.6	34.8	33.9	56.8	7.4	3.3	4.2	2.7	40.2	40.8	30.9		53.7	64.3	66.2	33.8	3.0	35000	85.4	53.1
Augusta Seed Corporation	4759	11	109	31.8	31.7	30.9	54.6	7.9	3.7	4.4	2.5	44.3	45.0	29.1	54.2	51.5	60.8	62.7	37.3	2.5	34833	77.4	49.8
Channel	207-27STXRIB	10	107	31.7	31.5	33.9	58.1	6.9	3.6	4.1	2.8	41.4	42.0	29.5		50.7	60.1	61.9	38.1	2.7	35500	78.6	50.3
King Fisher	KF 58C80	1	108	31.6	35.1	34.0	59.3	8.3	3.6	4.5	2.7	39.8	40.4	28.0		51.9	62.1	64.0	36.0	2.8	30833	82.8	52.3
Channel	209-15STXRIB	10	109	31.0	33.1	31.9	57.8	7.9	3.7	4.2	2.5	42.8	43.5	28.5		50.5	60.0	61.9	38.1	2.5	34667	77.8	50.0
Seedway	SW5559GTRW	21	106	30.2	33.1	30.4	63.0	7.0	4.0	4.1	2.3	44.0	44.7	25.1		47.6	56.2	58.0	42.0	2.3	33667	66.3	45.5
Dairyland Seed	HiDF-3407RA	15	107	29.3	27.7	24.4	61.3	7.1	4.8	4.5	2.3	50.9	51.7	23.7	48.5	43.0	52.5	54.2	45.8	1.6	34500	47.7	38.4
Pioneer	P0921AMXT	13	110	28.7	33.2	30.0	61.9	8.2	4.0	4.6	2.4	42.6	43.3	27.0		48.5	57.0	58.8	41.2	2.3	35833	71.9	47.8
106 -110day RM Mean				**31.8**	**32.6**	**31.8**	**59.9**	**7.4**	**3.8**	**4.1**	**2.5**	**42.8**	**43.5**	**27.3**	**53.0**	**49.6**	**59.0**	**60.8**	**39.2**	**2.5**	**34292**	**73.6**	**48.4**
LSD (0.10)				**2.9**	**3.5**	**5.4**	**3.3**	**0.6**	**0.5**	**0.6**	**0.3**	**4.8**	**4.9**	**2.8**	**4.6**	**3.5**	**4.4**	**4.6**	**4.6**	**0.7**	**1976**	**14.4**	**5.6**
OverallMean				**35.2**	**31.9**	**34.8**	**59.0**	**7.4**	**3.7**	**4.0**	**2.6**	**41.3**	**41.9**	**27.8**	**54.7**	**50.1**	**59.4**	**61.3**	**38.7**	**2.7**	**34779**	**77.0**	**49.6**

* 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) with all values expressed as % of DM. Jones, L.R., and J. Siciliano-Jones. 2015. Index useful for ranking silage samples. Feedstuffs 17, 19.

[2] - NS = Not Significant

[3] - One plot replicate had a harvest population count < 25,000

[4] - Yield and harvest population data removed due to 2 plot replicates having a harvest population count < 25,000

† See Table 5: Trait Key

Table 4c: Hybrid traits and performance for 96-110 day RM groups at Aurora, NY.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
Dekalb	DKC48-57RIB	7	98	37.0	26.8	36.0	60.5	5.6	3.3	2.3	2.5	41.3	42.0	29.3		53.6	63.2	65.1	34.9	3.0	35167	87.1	52.9
Hubner	H6124RCSS	10	96	35.8	27.9	38.7	62.1	5.6	3.3	2.4	2.5	39.3	39.9	28.3	54.3	51.8	61.1	63.1	36.9	3.2	35833	84.0	51.9
Pioneer	P9789AMXT	13	98	35.1	28.3	36.9	61.8	6.4	3.3	2.7	2.6	40.2	40.8	30.1		53.2	63.7	65.7	34.3	3.1	35500	85.8	52.8
King Fisher	KF 49C60	1	99	35.0	25.7	35.0	59.2	6.6	3.0	2.8	2.4	41.1	41.7	33.1		58.4	68.8	71.3	28.7	3.5	29667	96.1	56.6
Doebler's PA Hybrids, Inc.	3916GRQ	14	99	34.6	25.6	35.9	63.0	5.8	3.4	2.6	2.4	40.5	41.1	27.1	54.7	51.1	59.9	62.0	38.0	2.9	34833	81.8	51.1
Channel	198-98STXRIB	10	98	34.2	27.9	32.3	62.2	5.8	3.6	2.8	2.3	42.5	43.2	26.9		51.7	59.4	61.5	38.6	2.6	34833	79.5	50.2
Mycogen Seeds	TMF2Q419	15	96	34.0	25.9	30.4	59.0	6.1	3.7	2.8	2.5	44.7	45.4	30.3	56.0	52.0	60.6	62.7	37.3	2.5	35167	75.2	48.4
Dekalb	DKC46-20RIB	9	96	33.3	29.4	32.6	61.1	6.5	3.5	3.1	2.3	42.6	43.3	28.8		53.4	63.6	65.5	34.5	2.8	35917	83.5	52.0
Mycogen Seeds	TMF99Q47	15	99	33.0	27.2	29.8	60.5	6.0	3.4	2.5	2.3	43.2	43.9	28.7	52.8	53.8	64.5	66.4	33.6	2.6	33500	85.7	52.6
Augusta Seed Corporation	3750	16	100	32.7	25.0	32.4	58.0	5.8	3.4	2.6	2.4	43.2	43.9	29.6	54.1	52.6	61.3	63.3	36.7	2.7	34500	79.5	50.1
Masters Choice	MCT4632	11	96	32.7	25.6	34.8	59.1	6.4	3.0	3.0	2.2	40.3	40.9	30.3		56.2	65.6	67.6	32.4	3.2	34250	92.2	55.2
Growmark FS	49R79SS	17	99	32.3	25.2	33.3	61.5	6.2	3.5	2.6	2.6	41.2	41.8	27.7		52.3	62.7	64.6	35.4	2.8	33000	84.5	52.2
Hubner	H6191RCSS	10	99	31.9	24.6	35.1	60.7	6.0	3.3	2.3	2.7	40.5	41.1	30.3	57.0	53.7	64.3	66.3	33.7	3.0	35000	88.8	53.8
Masters Choice	MCT4934	16	99	31.9	25.7	32.1	62.1	6.4	3.4	2.8	2.2	41.6	42.2	26.4		52.2	60.7	63.0	37.1	2.7	34667	81.7	51.2
Channel	199-72STXRIB	10	99	31.5	26.6	33.9	61.6	5.9	3.4	2.6	2.6	40.6	41.2	28.1		52.5	62.5	64.4	35.6	2.9	35000	84.0	52.1
Hubner	H6157RCSS	10	94	31.3	26.7	32.6	62.6	6.4	3.5	2.8	2.4	41.9	42.5	26.7	52.9	52.2	60.8	63.0	37.0	2.7	35667	80.8	50.8
Augusta Seed Corporation	2847	11	97	30.5	24.0	32.7	59.4	6.5	3.6	3.0	2.5	41.9	42.6	27.2	55.4	52.1	61.5	63.4	36.6	2.7	33333	81.3	51.1
Mycogen	BMR97B37	18	97	28.3	26.1	32.5	59.0	6.4	2.5	2.5	2.5	40.5	41.1	36.0	65.7	66.1	79.2	81.6	18.4	4.3	33167	113.5	63.0
94-100 day RM Mean				**33.1**	**26.3**	**33.7**	**60.7**	**6.1**	**3.3**	**2.7**	**2.4**	**41.5**	**42.1**	**29.2**	**55.9**	**53.8**	**63.5**	**65.6**	**34.4**	**3.0**	**34389**	**85.8**	**52.7**
NK	NK0199	14	101	34.4	26.1	35.4	59.4	6.7	3.2	2.3	2.4	39.9	40.5	29.1		54.2	63.9	65.9	34.1	3.1	33167	90.0	54.2
Dekalb	DKC54-40RIB	7	104	33.7	29.3	36.6	62.7	6.1	3.3	2.6	2.6	39.2	39.8	29.0		52.6	61.4	63.4	36.6	3.1	36000	87.8	53.5
Doebler's PA Hybrids, Inc.	RPM4115AMXT	5	101	33.6	28.5	33.3	61.7	5.8	3.5	2.5	2.4	43.1	43.7	30.0	58.6	54.2	64.9	66.9	33.1	2.9	34333	86.6	52.9
Channel	202-20STXRIB	10	102	33.4	30.4	32.5	62.7	6.4	3.6	3.0	2.3	40.9	41.5	25.7		50.5	60.2	62.0	38.0	2.6	35167	80.6	50.8
Dekalb	DKC55-21RIB	7	105	33.1	28.0	33.4	63.7	6.3	3.5	2.6	2.4	42.0	42.6	27.8		52.7	62.2	64.1	35.9	2.8	35333	82.1	51.2
Dekalb	DKC52-30RIB	10	102	32.8	25.5	28.8	64.0	5.9	3.4	2.9	2.0	43.7	44.3	27.9		54.9	64.8	66.8	33.2	2.7	36833	85.8	52.7
Masters Choice	MCT5371	3	103	32.7	23.6	30.2	62.1	5.9	3.2	2.6	2.2	42.2	42.9	27.8		55.9	65.8	67.9	32.1	2.9	30333	89.5	54.0
Doebler's PA Hybrids, Inc.	RPM4318AMXT	5	103	32.2	24.9	31.1	61.3	5.8	3.6	2.8	2.1	43.3	43.9	26.7	55.1	51.7	62.1	64.2	35.8	2.6	30500	80.4	50.8
Hubner	H6225RCSS	10	102	31.5	24.9	31.6	62.9	5.7	3.7	2.7	2.3	45.6	46.3	30.6	55.8	52.4	61.5	63.4	36.6	2.6	36000	75.8	48.7
Growmark FS	53R41SS	17	103	31.4	24.6	30.9	63.9	6.9	3.7	2.8	2.3	43.2	43.9	28.0		51.5	60.7	62.6	37.4	2.5	34500	76.6	49.2
NK	NK0142	19	101	31.3	25.9	30.7	60.1	6.1	3.7	2.5	2.3	43.8	44.5	25.6		50.5	59.3	61.6	38.5	2.4	38000	76.9	49.2
Hubner	H6257RCSS	10	104	31.2	24.3	30.3	61.3	5.4	3.3	2.7	2.3	43.0	43.7	29.6	55.6	54.6	65.4	67.4	32.6	2.7	35833	86.7	53.0
NK	NK0519	19	105	30.9	24.1	28.7	61.8	6.2	3.5	2.4	2.3	43.3	44.0	28.3		53.5	64.1	66.1	33.9	2.6	33500	83.9	52.0
Channel	203-01STXRIB	10	103	30.7	25.9	31.1	59.8	6.0	3.2	2.8	2.4	42.0	42.6	31.3		55.9	66.9	69.0	31.0	2.9	34667	91.1	54.7
Pioneer	P0242AMXT	13	104	30.5	25.1	30.8	61.3	6.6	3.2	2.8	2.1	41.8	42.4	29.9		55.9	66.9	69.0	31.0	2.9	35333	90.4	54.6
Seedway	SW5430GenSS	10	105	30.5	29.1	28.4	61.6	6.4	3.6	2.9	2.4	43.0	43.7	24.8		52.1	60.5	62.5	37.5	2.5	35500	79.6	50.3
Wolf River Valley Seeds	3805FLRR	20	103	30.2	25.8	22.4	58.4	5.9	4.0	2.4	1.9	49.3	50.0	24.3	55.1	51.3	60.2	62.3	37.7	2.0	34333	67.6	45.7
King Fisher	KF 52C20[3]	1	102	28.7	24.0	29.3	62.9	5.9	3.4	2.5	2.2	43.3	43.9	27.6		53.2	63.3	65.4	34.6	2.6	29000	82.0	51.3
101-105 day RM Mean				**31.8**	**26.1**	**30.9**	**61.7**	**6.1**	**3.5**	**2.7**	**2.3**	**42.9**	**43.6**	28.0	**56.0**	**53.2**	**63.0**	**65.0**	**35.0**	**2.7**	**34352**	**83.0**	**51.6**

Table 4c cont.

Company/Brand	Hybrid	Trait Code†	Relative Maturity	Dry Matter	Yield, 35% DM	Starch	Starch Digestibility	Crude Protein	Lignin	Ash	Total Fatty Acids	aNDFom	NDF	12 hr NDFD	Wet Chem 30 hr NDFD	30 hr NDFD	120 hr NDFD	240 hr NDFD	240 hr uNDF	RFC - Fill Ratio[1]	Harvest Population	CNCPS v. 7.0 Predicted Allowable Milk Yield	CNCPS v. 7.0 Predicted Dry Matter Intake
				%	tons/ac	% DM	7 hr, 4mm	% DM	% DM	% DM	% DM	% DM	% DM	% NDF	% NDF	%NDF	%NDF	%NDF	%NDF		plants/ac	lbs/day	lbs/day
Dyna-Gro/CPS	D49VC39	4	109	32.2	24.4	27.8	61.2	6.2	3.6	2.7	2.2	43.3	43.9	26.3		51.1	59.4	61.3	38.8	2.3	33667	76.2	48.9
Channel	207-27STXRIB	10	107	31.5	27.1	33.0	62.5	6.3	3.3	2.7	2.4	40.7	41.3	28.7		54.6	64.5	66.5	33.5	3.0	35667	86.6	53.1
Augusta Seed Corporation	4759	11	109	31.4	25.9	28.5	60.4	6.1	3.3	2.4	2.1	43.7	44.4	28.5	55.5	55.7	66.7	68.7	31.3	2.7	34500	88.4	53.6
Channel	209-15STXRIB	10	109	31.2	27.3	27.9	58.5	6.3	3.2	2.8	2.3	42.5	43.1	29.2		56.1	67.1	69.2	30.8	2.8	33167	90.6	54.6
Dekalb	DKC57-77RIB	7	107	31.1	27.8	29.1	63.8	6.1	3.3	2.7	2.1	42.8	43.5	28.8		55.8	66.8	68.8	31.2	2.8	33833	89.7	54.2
Seedway	SW6630GENSS	10	110	30.4	27.1	28.6	57.6	5.9	3.4	2.2	2.4	43.5	44.1	29.0		53.5	63.8	65.7	34.3	2.6	35000	84.2	52.0
Pioneer	P0921AMXT	13	110	30.2	26.2	26.3	63.7	5.9	3.5	2.7	2.0	43.9	44.6	24.2		53.9	63.7	65.6	34.4	2.5	35833	82.4	51.4
Masters Choice	MCT5661	3	106	30.0	26.2	29.4	62.3	5.8	3.6	2.6	2.2	44.3	44.9	25.2		50.4	60.1	62.0	38.0	2.4	32667	75.9	48.8
Seedway	SW5559GTRW	21	106	29.9	26.0	29.5	63.1	6.0	3.3	2.6	2.1	43.8	44.5	27.6		55.3	64.8	67.0	33.0	2.7	34667	86.8	53.1
Dairyland Seed	HiDF-3407RA	15	107	28.9	24.5	22.8	59.3	6.2	4.0	2.5	2.2	49.4	50.1	26.2	56.2	50.6	60.9	62.8	37.2	2.0	35667	67.7	45.7
Mycogen	BMR10B27	15	110	28.6	24.5	26.5	58.2	6.1	2.1	2.7	2.2	40.8	41.6	37.3	68.6	71.0	85.0	87.7	12.3	4.7	34500	124.8	67.5
King Fisher	KF 58C80[3]	1	108	28.2	21.7	25.8	60.8	5.9	3.3	2.6	2.1	44.8	45.5	28.8		55.8	66.9	69.0	31.0	2.6	28000	86.8	53.0
Doebler's PA Hybrids, Inc.	RPM4717AMX	22	107	28.1	23.3	30.0	63.6	6.0	3.6	2.9	2.3	42.6	43.3	25.3	54.5	51.7	61.1	63.0	37.0	2.5	32500	78.9	50.2
106 -110day RM Mean				**30.1**	**25.5**	**28.1**	**61.2**	**6.1**	**3.4**	**2.6**	**2.2**	**43.5**	**44.2**	**28.1**	**58.7**	**55.0**	**65.4**	**67.5**	**32.5**	**2.7**	**33821**	**86.1**	**52.8**
LSD (0.10)				**2.9**	**NS[2]**	**4.9**	**2.9**	**NS**	**0.4**	**NS**	**0.3**	**3.8**	**3.9**	**3.3**	**3.3**	**3.4**	**4.8**	**4.9**	**4.9**	**0.5**	**3222**	**11.9**	**4.6**
OverallMean				**31.8**	**26.0**	**31.2**	**61.2**	**6.1**	**3.4**	**2.7**	**2.3**	**42.6**	**43.2**	**28.4**	**56.6**	**53.9**	**63.8**	**65.9**	**34.1**	**2.8**	**34224**	**84.8**	**52.3**

* 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) with all values expressed as % of DM. Jones, L.R., and J. Siciliano-Jones. 2015. Index useful for ranking silage samples. Feedstuffs 17, 19.

[2] - NS = Not Significant

[3] - One plot replicate had a harvest population count < 25,000

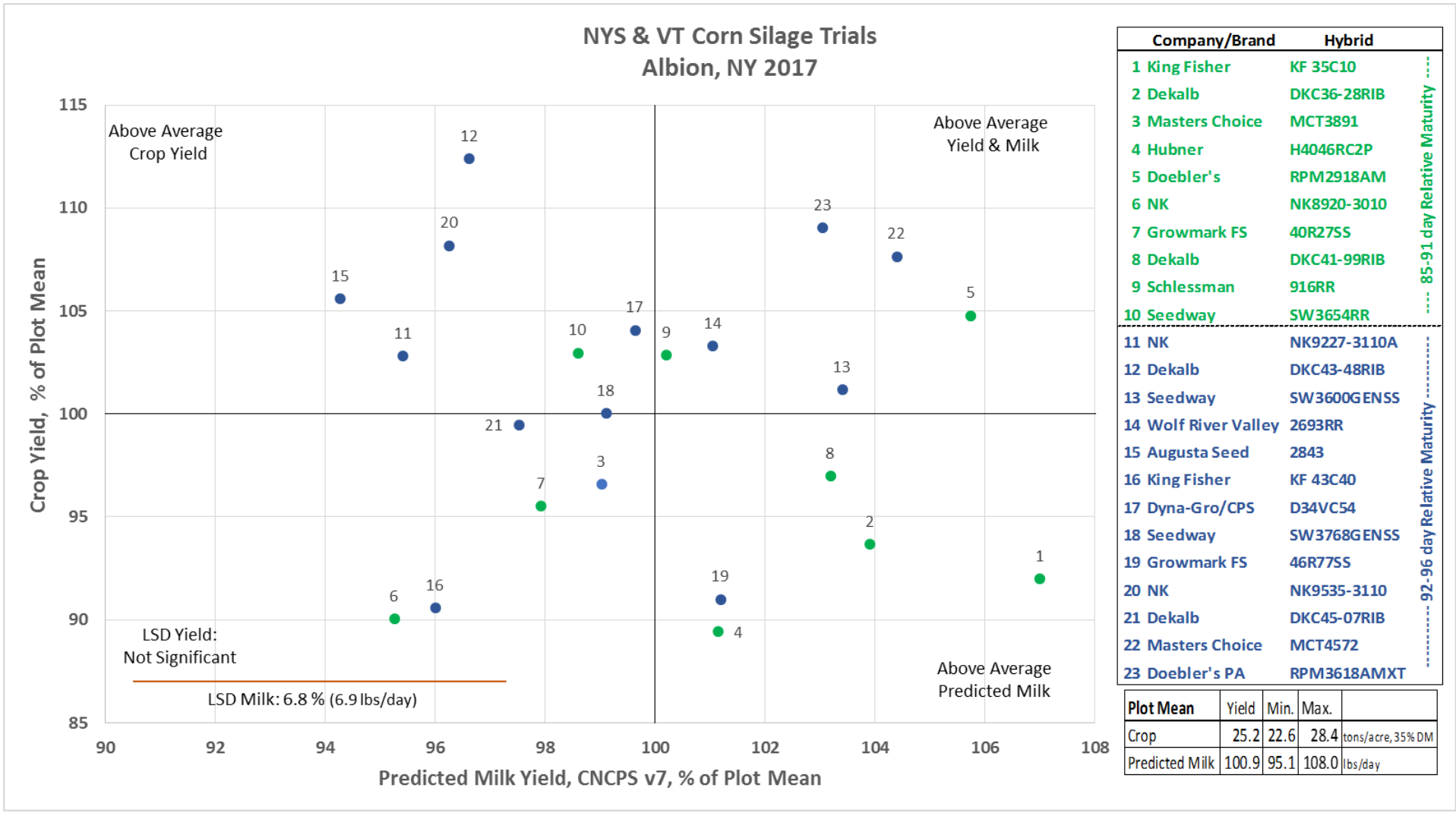
[4] - Yield and harvest population data removed due to 2 plot replicates having a harvest population count < 25,000

† See Table 5: Trait Key

Figure 2. Relationship between Crop Yield and Predicted Milk Yield (PMY) for 80-95 day relative maturity hybrids planted at Albion, NY (2a), Willsboro, NY (2b) and Alburgh, VT (2c). 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 3. Relationship between Crop Yield and Predicted Milk Yield (PMY) for 96-110 day relative maturity hybrids planted at Alburgh, VT (3a), Madrid, NY (3b), Aurora, NY (3c). 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.

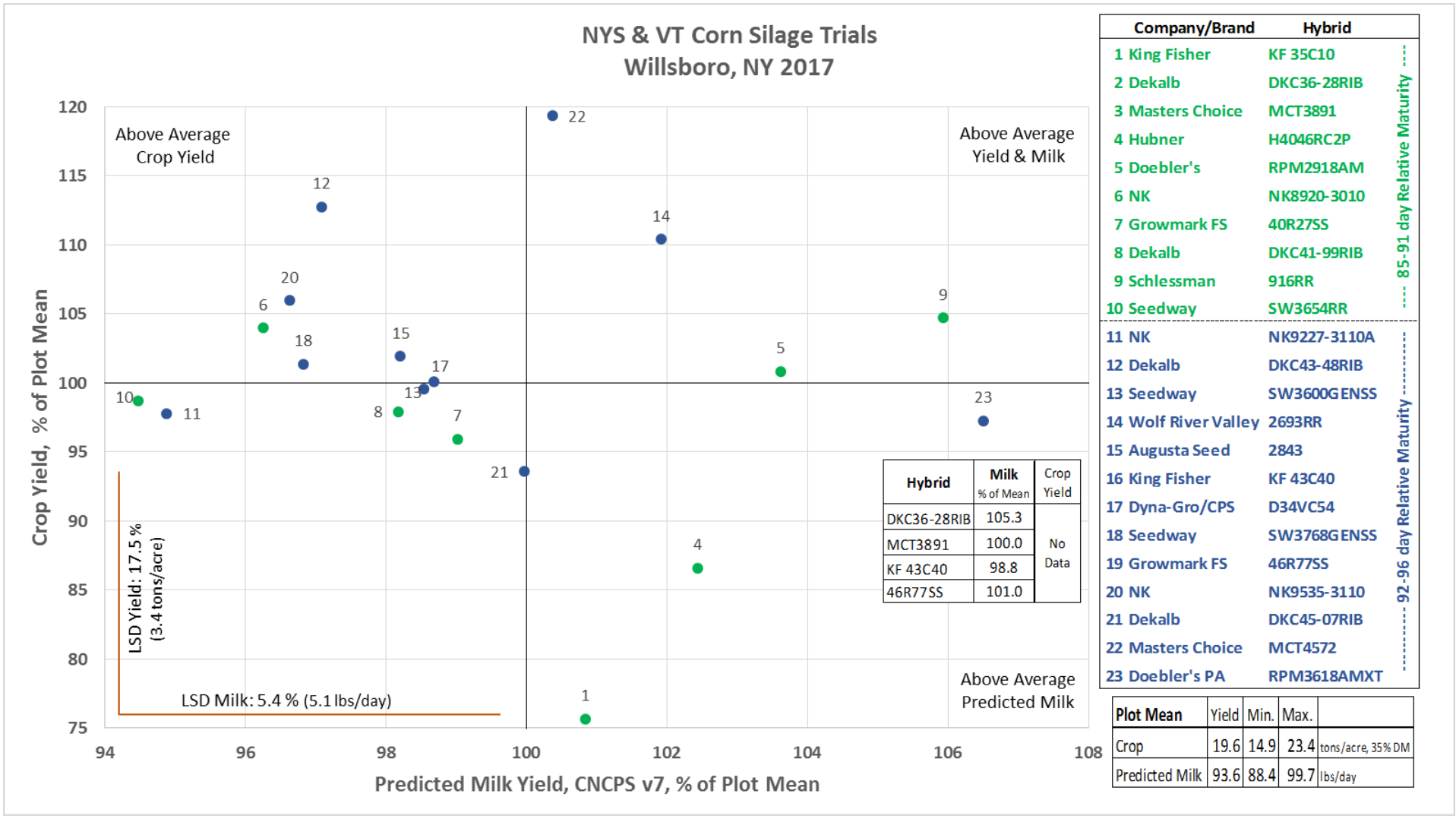
Figure 2a: Albion, NY 80-95 day Relative Maturity Hybrids



	Company/Brand	Hybrid	
1	King Fisher	KF 35C10	85-91 day Relative Maturity
2	Dekalb	DKC36-28RIB	
3	Masters Choice	MCT3891	
4	Hubner	H4046RC2P	
5	Doebler's	RPM2918AM	
6	NK	NK8920-3010	
7	Growmark FS	40R27SS	
8	Dekalb	DKC41-99RIB	
9	Schlessman	916RR	
10	Seedway	SW3654RR	
11	NK	NK9227-3110A	92-96 day Relative Maturity
12	Dekalb	DKC43-48RIB	
13	Seedway	SW3600GENSS	
14	Wolf River Valley	2693RR	
15	Augusta Seed	2843	
16	King Fisher	KF 43C40	
17	Dyna-Gro/CPS	D34VC54	
18	Seedway	SW3768GENSS	
19	Growmark FS	46R77SS	
20	NK	NK9535-3110	
21	Dekalb	DKC45-07RIB	
22	Masters Choice	MCT4572	
23	Doebler's PA	RPM3618AMXT	

Plot Mean	Yield	Min.	Max.	
Crop	25.2	22.6	28.4	tons/acre, 35% DM
Predicted Milk	100.9	95.1	108.0	lbs/day

Figure 2b: Willsboro, NY 80-95 day Relative Maturity Hybrids. Four hybrids (noted in table) are excluded due to missing crop yield information.

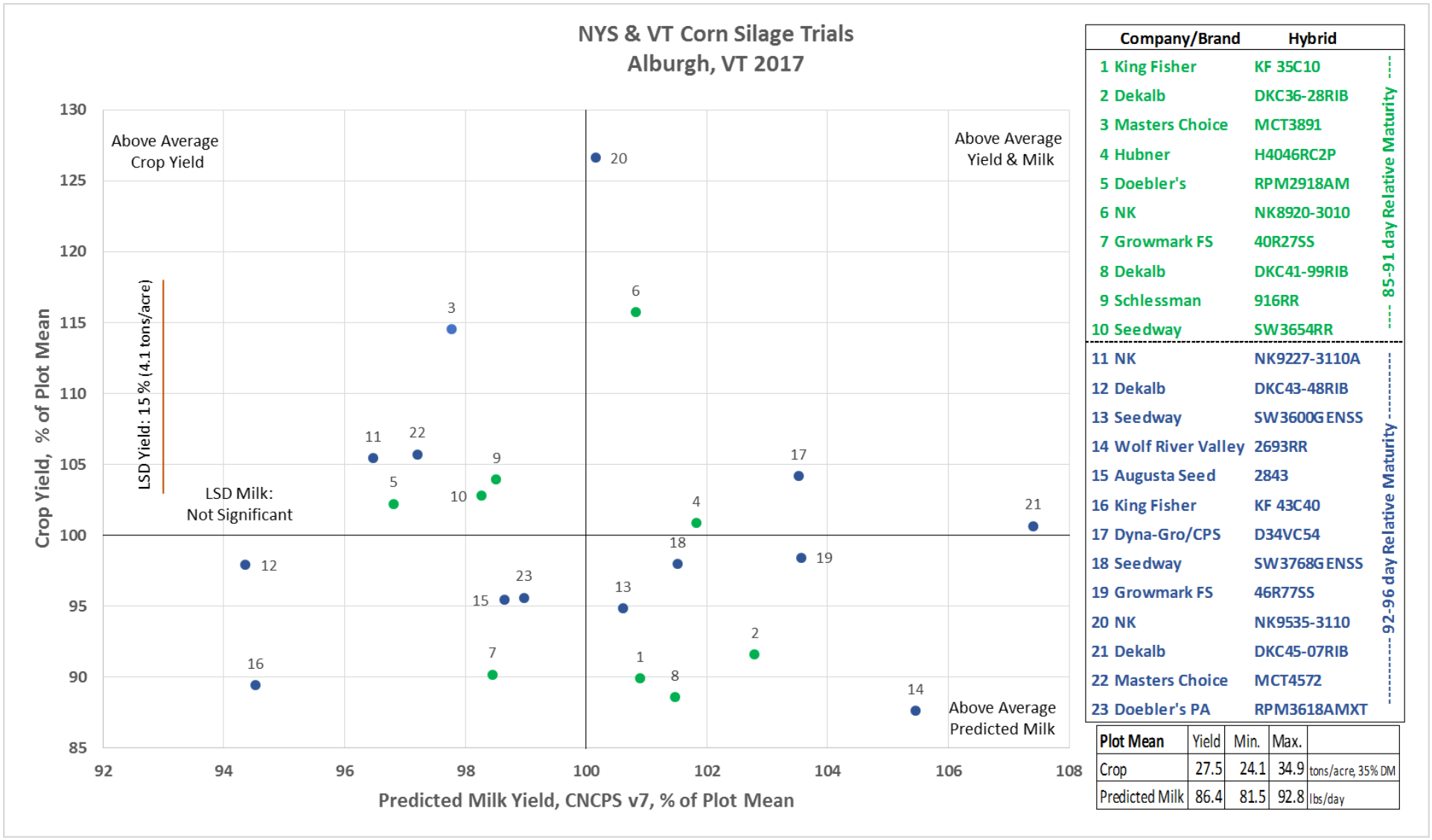


Hybrid	Milk % of Mean	Crop Yield
DKC36-28RIB	105.3	No Data
MCT3891	100.0	
KF 43C40	98.8	
46R77SS	101.0	

	Company/Brand	Hybrid	
1	King Fisher	KF 35C10	85-91 day Relative Maturity
2	Dekalb	DKC36-28RIB	
3	Masters Choice	MCT3891	
4	Hubner	H4046RC2P	
5	Doebler's	RPM2918AM	
6	NK	NK8920-3010	
7	Growmark FS	40R27SS	
8	Dekalb	DKC41-99RIB	
9	Schlessman	916RR	
10	Seedway	SW3654RR	
11	NK	NK9227-3110A	92-96 day Relative Maturity
12	Dekalb	DKC43-48RIB	
13	Seedway	SW3600GENSS	
14	Wolf River Valley	2693RR	
15	Augusta Seed	2843	
16	King Fisher	KF 43C40	
17	Dyna-Gro/CPS	D34VC54	
18	Seedway	SW3768GENSS	
19	Growmark FS	46R77SS	
20	NK	NK9535-3110	
21	Dekalb	DKC45-07RIB	
22	Masters Choice	MCT4572	
23	Doebler's PA	RPM3618AMXT	

Plot Mean	Yield	Min.	Max.	
Crop	19.6	14.9	23.4	tons/acre, 35% DM
Predicted Milk	93.6	88.4	99.7	lbs/day

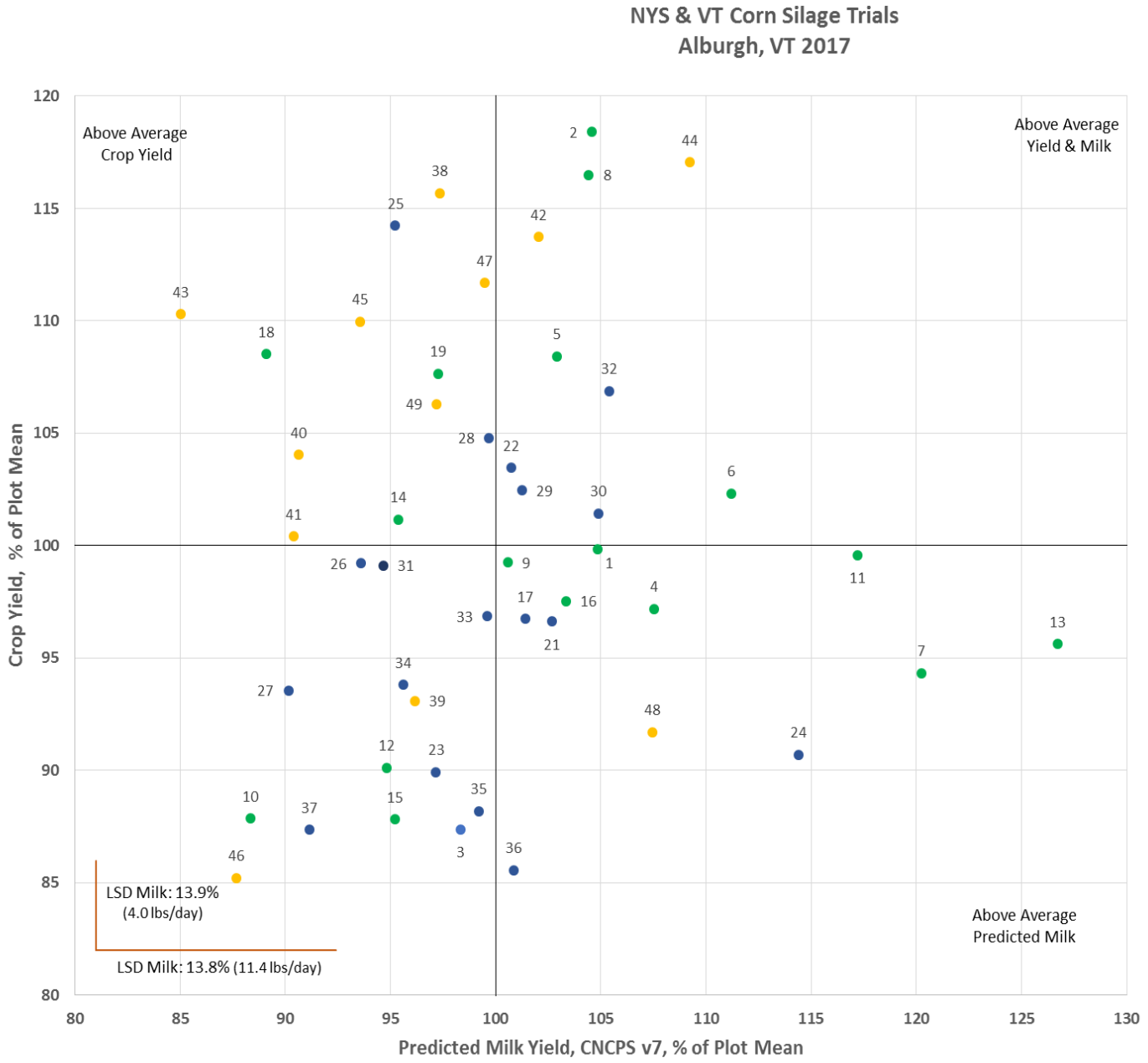
Figure 3c: Alburgh, VT 80-95 day Relative Maturity Hybrids



Company/Brand	Hybrid	
1 King Fisher	KF 35C10	85-91 day Relative Maturity
2 Dekalb	DKC36-28RIB	
3 Masters Choice	MCT3891	
4 Hubner	H4046RC2P	
5 Doebler's	RPM2918AM	
6 NK	NK8920-3010	
7 Growmark FS	40R27SS	
8 Dekalb	DKC41-99RIB	
9 Schlessman	916RR	
10 Seedway	SW3654RR	
11 NK	NK9227-3110A	92-96 day Relative Maturity
12 Dekalb	DKC43-48RIB	
13 Seedway	SW3600GENSS	
14 Wolf River Valley	2693RR	
15 Augusta Seed	2843	
16 King Fisher	KF 43C40	
17 Dyna-Gro/CPS	D34VC54	
18 Seedway	SW3768GENSS	
19 Growmark FS	46R77SS	
20 NK	NK9535-3110	
21 Dekalb	DKC45-07RIB	
22 Masters Choice	MCT4572	
23 Doebler's PA	RPM3618AMXT	

Plot Mean	Yield	Min.	Max.	
Crop	27.5	24.1	34.9	tons/acre, 35% DM
Predicted Milk	86.4	81.5	92.8	lbs/day

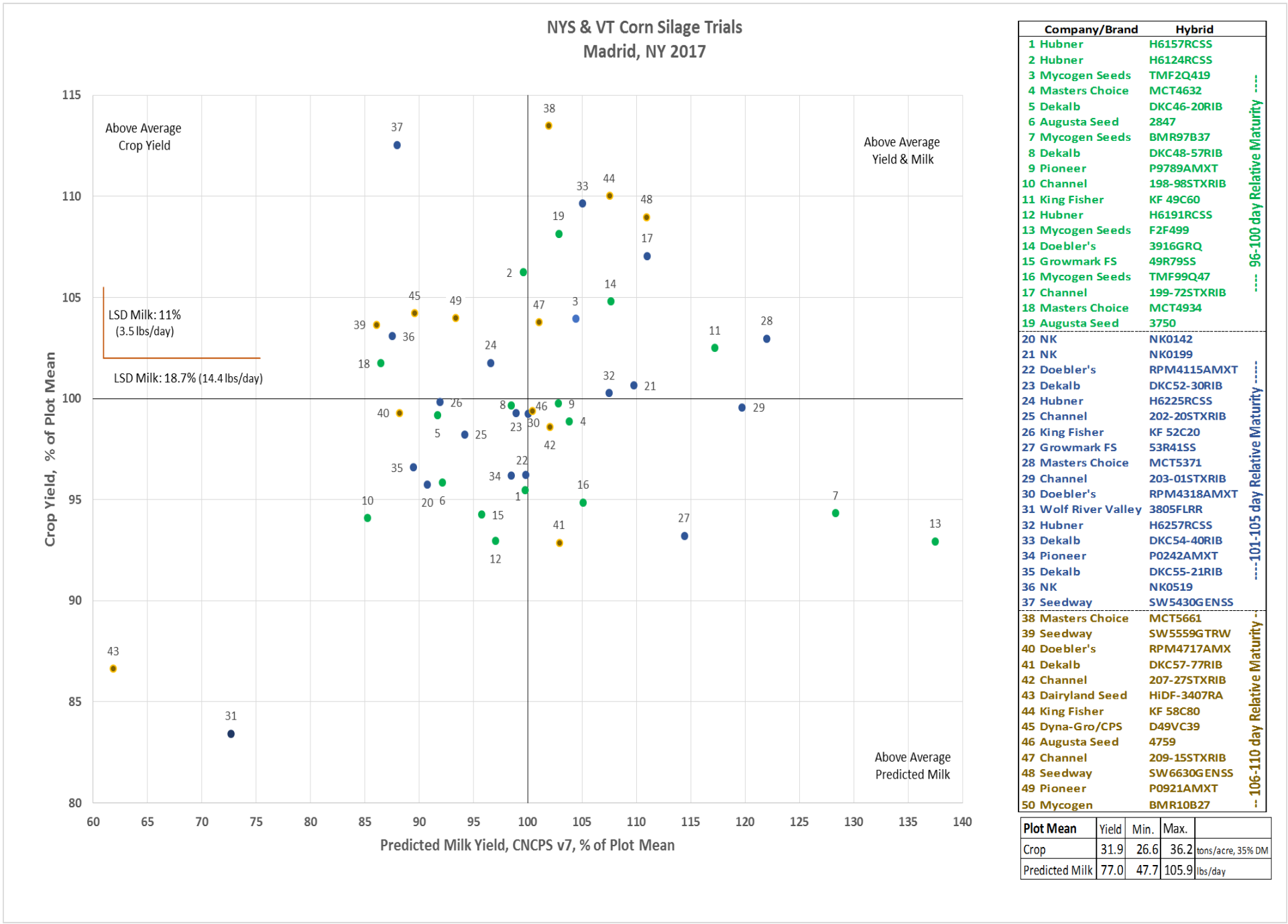
Figure 3a: Alburgh, VT 96-110 day Relative Maturity Hybrids



	Company/Brand	Hybrid	
1	Hubner	H6157RCSS	96-100 day Relative Maturity
2	Hubner	H6124RCSS	
3	Mycogen Seeds	TMF2Q419	
4	Masters Choice	MCT4632	
5	Dekalb	DKC46-20RIB	
6	Augusta Seed	2847	
7	Mycogen Seeds	BMR97B37	
8	Dekalb	DKC48-57RIB	
9	Pioneer	P9789AMXT	
10	Channel	198-98STXRIB	
11	King Fisher	KF 49C60	
12	Hubner	H6191RCSS	
13	Mycogen Seeds	F2F499	
14	Doebler's	3916GRQ	
15	Growmark FS	49R79SS	
16	Mycogen Seeds	TMF99Q47	
17	Channel	199-72STXRIB	
18	Masters Choice	MCT4934	
19	Augusta Seed	3750	
20	NK	NK0142	101-105 day Relative Maturity
21	NK	NK0199	
22	Doebler's	RPM4115AMXT	
23	Dekalb	DKC52-30RIB	
24	Hubner	H6225RCSS	
25	Channel	202-20STXRIB	
26	King Fisher	KF 52C20	
27	Growmark FS	53R41SS	
28	Masters Choice	MCT5371	
29	Channel	203-01STXRIB	
30	Doebler's	RPM4318AMXT	
31	Wolf River Valley	3805FLRR	
32	Hubner	H6257RCSS	
33	Dekalb	DKC54-40RIB	
34	Pioneer	P0242AMXT	
35	Dekalb	DKC55-21RIB	
36	NK	NK0519	
37	Seedway	SW5430GENSS	
38	Masters Choice	MCT5661	106-110 day Relative Maturity
39	Seedway	SW5559GTRW	
40	Doebler's	RPM4717AMX	
41	Dekalb	DKC57-77RIB	
42	Channel	207-27STXRIB	
43	Dairyland Seed	HiDF-3407RA	
44	King Fisher	KF 58C80	
45	Dyna-Gro/CPS	D49VC39	
46	Augusta Seed	4759	
47	Channel	209-15STXRIB	
48	Seedway	SW6630GENSS	
49	Pioneer	P0921AMXT	
50	Mycogen	BMR10B27	

Plot Mean	Yield	Min.	Max.	
Crop	28.4	24.2	33.7	tons/acre, 35% DM
Predicted Milk	82.8	70.4	105.0	lbs/day

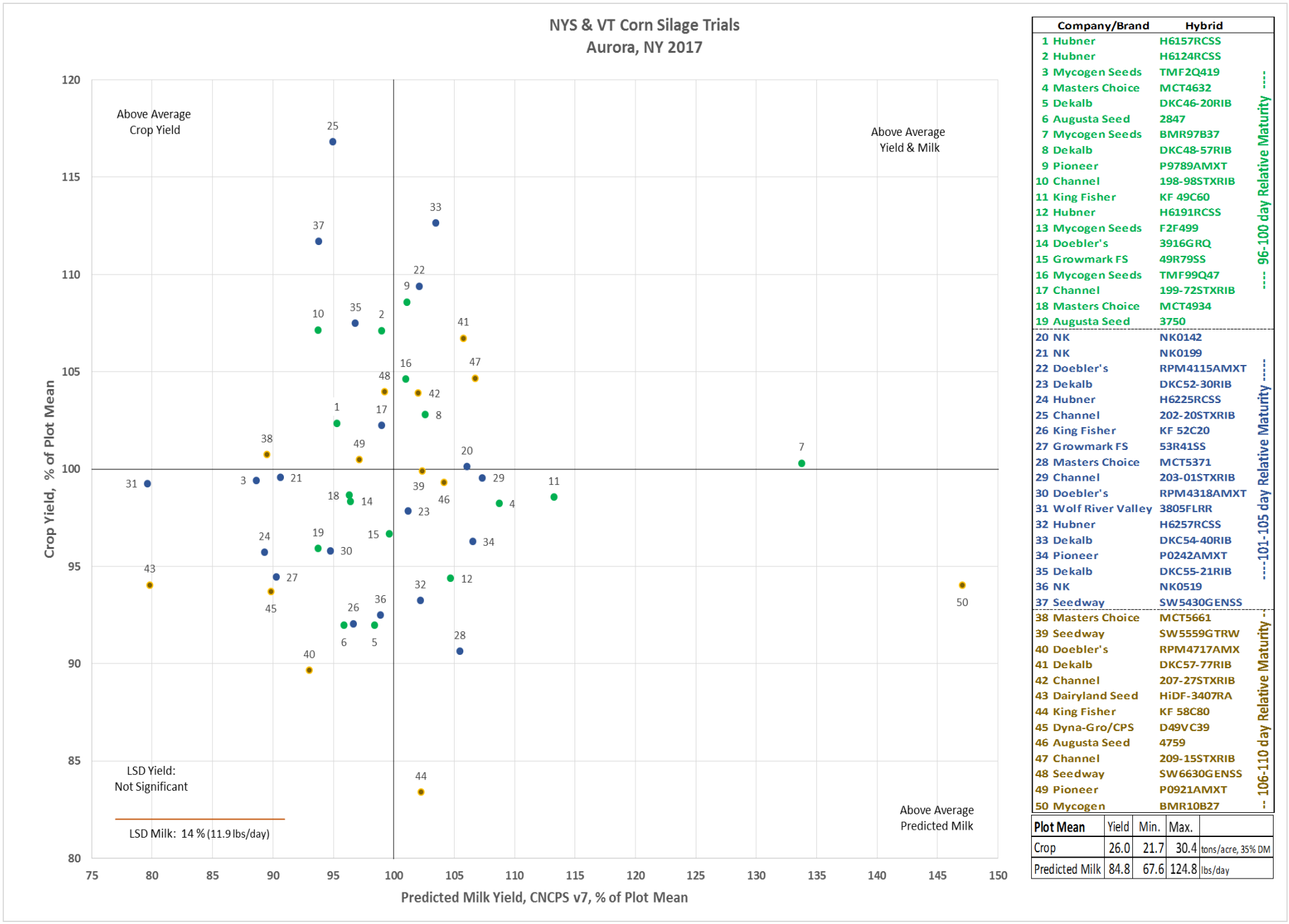
Figure 3b: Madrid, NY 96-110 day Relative Maturity Hybrids



	Company/Brand	Hybrid	
1	Hubner	H6157RCSS	96-100 day Relative Maturity
2	Hubner	H6124RCSS	
3	Mycogen Seeds	TMF2Q419	
4	Masters Choice	MCT4632	
5	Dekalb	DKC46-20RIB	
6	Augusta Seed	2847	
7	Mycogen Seeds	BMR97B37	
8	Dekalb	DKC48-57RIB	
9	Pioneer	P9789AMXT	
10	Channel	198-98STXRIB	
11	King Fisher	KF 49C60	
12	Hubner	H6191RCSS	
13	Mycogen Seeds	F2F499	
14	Doebler's	3916GRQ	
15	Growmark FS	49R79SS	
16	Mycogen Seeds	TMF99Q47	
17	Channel	199-72STXRIB	
18	Masters Choice	MCT4934	
19	Augusta Seed	3750	
20	NK	NK0142	101-105 day Relative Maturity
21	NK	NK0199	
22	Doebler's	RPM4115AMXT	
23	Dekalb	DKC52-30RIB	
24	Hubner	H6225RCSS	
25	Channel	202-20STXRIB	
26	King Fisher	KF 52C20	
27	Growmark FS	53R41SS	
28	Masters Choice	MCT5371	
29	Channel	203-01STXRIB	
30	Doebler's	RPM4318AMXT	
31	Wolf River Valley	3805FLRR	
32	Hubner	H6257RCSS	
33	Dekalb	DKC54-40RIB	
34	Pioneer	P0242AMXT	
35	Dekalb	DKC55-21RIB	
36	NK	NK0519	
37	Seedway	SW5430GENSS	
38	Masters Choice	MCT5661	106-110 day Relative Maturity
39	Seedway	SW5559GTRW	
40	Doebler's	RPM4717AMX	
41	Dekalb	DKC57-77RIB	
42	Channel	207-27STXRIB	
43	Dairyland Seed	HiDF-3407RA	
44	King Fisher	KF 58C80	
45	Dyna-Gro/CPS	D49VC39	
46	Augusta Seed	4759	
47	Channel	209-15STXRIB	
48	Seedway	SW6630GENSS	
49	Pioneer	P0921AMXT	
50	Mycogen	BMR10B27	

Plot Mean	Yield	Min.	Max.	
Crop	31.9	26.6	36.2	tons/acre, 35% DM
Predicted Milk	77.0	47.7	105.9	lbs/day

Figure 3c: Aurora, NY 96-110 day Relative Maturity Hybrids



	Company/Brand	Hybrid	
1	Hubner	H6157RCSS	---- 96-100 day Relative Maturity ----
2	Hubner	H6124RCSS	
3	Mycogen Seeds	TMF2Q419	
4	Masters Choice	MCT4632	
5	Dekalb	DKC46-20RIB	
6	Augusta Seed	2847	
7	Mycogen Seeds	BMR97B37	
8	Dekalb	DKC48-57RIB	
9	Pioneer	P9789AMXT	
10	Channel	198-98STXRIB	
11	King Fisher	KF 49C60	
12	Hubner	H6191RCSS	
13	Mycogen Seeds	F2F499	
14	Doebler's	3916GRQ	
15	Growmark FS	49R79SS	
16	Mycogen Seeds	TMF99Q47	
17	Channel	199-72STXRIB	
18	Masters Choice	MCT4934	
19	Augusta Seed	3750	
20	NK	NK0142	----101-105 day Relative Maturity ----
21	NK	NK0199	
22	Doebler's	RPM4115AMXT	
23	Dekalb	DKC52-30RIB	
24	Hubner	H6225RCSS	
25	Channel	202-20STXRIB	
26	King Fisher	KF 52C20	
27	Growmark FS	53R41SS	
28	Masters Choice	MCT5371	
29	Channel	203-01STXRIB	
30	Doebler's	RPM4318AMXT	
31	Wolf River Valley	3805FLRR	
32	Hubner	H6257RCSS	
33	Dekalb	DKC54-40RIB	
34	Pioneer	P0242AMXT	
35	Dekalb	DKC55-21RIB	
36	NK	NK0519	
37	Seedway	SW5430GENSS	
38	Masters Choice	MCT5661	-- 106-110 day Relative Maturity --
39	Seedway	SW5559GTRW	
40	Doebler's	RPM4717AMX	
41	Dekalb	DKC57-77RIB	
42	Channel	207-27STXRIB	
43	Dairyland Seed	HiDF-3407RA	
44	King Fisher	KF 58C80	
45	Dyna-Gro/CPS	D49VC39	
46	Augusta Seed	4759	
47	Channel	209-15STXRIB	
48	Seedway	SW6630GENSS	
49	Pioneer	P0921AMXT	
50	Mycogen	BMR10B27	

Plot Mean	Yield	Min.	Max.	
Crop	26.0	21.7	30.4	tons/acre, 35% DM
Predicted Milk	84.8	67.6	124.8	lbs/day

Table 5: Trait Key for Trait Codes in Table 3 and 4

Trait Code	Trait
1	Conventional
2	RR
3	Agrisure GT
4	GENVT2P
5	RW/HXX/YGCB/LL/RR2
6	HX1/YGCB/LL/RR2
7	GENVT2P RIB
8	Agrisure 3010
9	GENVT3P RIB
10	GENSS RIB
11	Agrisure Viptera 3110
12	Agrisure Viptera 3110A
13	AMXT,LL,RR2
14	Agrisure 3011A
15	Smartstax Refuge Advanced
16	Agrisure Viptera 3111
17	GENSS RIB, DAIRYSELECT
18	Smartstax
19	Agrisure 3122 E-Z Refuge
20	Floury Leafy, RR
21	Agrisure GT/RW
22	HXX/YGCB/LL/RR2

Table 6: Trait Descriptions

The Handy Bt Trait Table for U.S. Corn Production, updated January 2018

Trait packages in alphabetical order (acronym)	Bt protein(s) in the trait package	Marketed for control of:									Resistance to a Bt protein in the trait package has developed in: *	Herbicide trait		Non-Bt Refuge % (cornbelt)
		BCW	CEW	ECB	FAW	SB	SCB	SWCB	TAW	WBC	CRW		GT RR2	LL	
AcreMax (AM)	Cry1Ab Cry1F	x		x	x	x	x	x				FAW WBC	x	x	5% in bag
AcreMax CRW (AMRW)	Cry34/35Ab1										x	CRW	x	x	10% in bag
AcreMax1 (AM1)	Cry1F Cry34/35Ab1	x		x	x	x	x	x			x	FAW SWCB WBC CRW	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	FAW WBC CRW	x	x	10% in bag
AcreMax Xtra (AMX)	Cry1Ab Cry1F Cry34/35Ab1	x		x	x	x	x	x			x	FAW WBC CRW	x	x	10% in bag
AcreMax Xtreme (AMXT)	Cry1Ab Cry1F mCry3A Cry34/35Ab1	x		x	x	x	x	x			x	FAW WBC CRW	x	x	5% in bag
Agrisure 3010 and 3010A	Cry1Ab			x			x	x					x	x	20%
Agrisure 3000GT and 3011A	Cry1Ab mCry3A			x			x	x			x	CRW	x	x	20%
Agrisure Viptera 3110	Cry1Ab Vip3A	x	x	x	x	x	x	x	x	x			x	x	20%
Agrisure Viptera 3111	Cry1Ab Vip3A mCry3A	x	x	x	x	x	x	x	x	x	x	CRW	x	x	20%
Agrisure 3120 EZ Refuge	Cry1Ab Cry1F	x		x	x	x	x	x				FAW WBC	Depends on hybrid; see bag for code EZ0 (GT) or EZ1 (GT LL)		5% in bag
Agrisure 3122 EZ Refuge	Cry1Ab Cry1F mCry3A Cry34/35Ab1	x		x	x	x	x	x			x	FAW WBC CRW			5% in bag
Agrisure Viptera 3220 EZ Refuge	Cry1Ab Cry1F Vip3A	x	x	x	x	x	x	x	x	x					5% in bag
Agrisure Duracade 5122 EZ Refuge	Cry1Ab Cry1F mCry3A eCry3.1Ab	x		x	x	x	x	x			x	FAW WBC CRW			5% in bag
Agrisure Duracade 5222 EZ Refuge	Cry1Ab Cry1F Vip3A mCry3A eCry3.1Ab	x	x	x	x	x	x	x	x	x	x	CRW			5% in bag
Herculex I (HXI)	Cry1F	x		x	x	x	x	x				FAW SWCB WBC	x	x	20%
Herculex RW (HXRW)	Cry34/35Ab1										x	CRW	x	x	20%
Herculex XTRA (HXX)	Cry1F Cry34/35Ab1	x		x	x	x	x	x			x	FAW SWCB WBC CRW	x	x	20%
Intrasect (YHR)	Cry1Ab Cry1F	x		x	x	x	x	x				FAW WBC	x	x	5%
Intrasect TRIsect (CYHR)	Cry1Ab Cry1F mCry3A	x		x	x	x	x	x			x	FAW WBC CRW	x	x	20%
Intrasect Xtra (YXR)	Cry1Ab Cry1F Cry34/35Ab1	x		x	x	x	x	x			x	FAW WBC CRW	x	x	20%
Intrasect Xtreme (CYXR)	Cry1Ab Cry1F mCry3A Cry34/35Ab1	x		x	x	x	x	x			x	FAW WBC CRW	x	x	5%
Leptra (VYHR)	Cry1Ab Cry1F Vip3A	x	x	x	x	x	x	x	x	x			x	x	5%
Powercore [a] Powercore Refuge Advanced [b]	Cry1A.105 Cry2Ab2 Cry1F	x	x	x	x	x	x	x				CEW WBC	x	x	[a] 5% [b] 5% in bag
QROME (Q)	Cry1Ab Cry1F mCry3A Cry34/35Ab1	x		x	x	x	x	x			x	FAW WBC CRW	x	x	5% in bag
SmartStax [a] Smartstax Refuge Advanced [b] SmartStax RIB Complete [b]	Cry1A.105 Cry2Ab2 Cry1F Cry3Bb1 Cry34/35Ab1	x	x	x	x	x	x	x			x	CEW WBC CRW	x	x	[a] 5% [b] 5% in bag
Trecepta [a] Trecepta RIB Complete [b]	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	FAW SWCB WBC CRW	x	x	20%
VT Double PRO [a] VT Double PRO RIB Complete [b]	Cry1A.105 Cry2Ab2		x	x	x	x	x	x				CEW	x		[a] 5% [b] 5% in bag
VT Triple PRO [c] VT Triple PRO RIB Complete [d]	Cry1A.105 Cry2Ab2 Cry3Bb1		x	x	x	x	x	x			x	CEW CRW	x		[c] 20% [d] 10% in bag
Yieldgard Corn Borer (YGCB)	Cry1Ab			x			x	x					x		20%
Yieldgard Rootworm (YGRW)	Cry3Bb1										x	CRW	x		20%
Yieldgard VT Triple	Cry1Ab Cry3Bb1			x			x	x			x	CRW	x		20%

**Check with local extension educators and seed dealers to determine the status of Bt resistance in your particular region.*

Source: Michigan State University http://msue.anr.msu.edu/news/handy_bt_trait_table