Northern NY Agricultural Development Program
2025 Project Report

Field Crop Performance Network Development Pilot Project: Year 2

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Cooperating Producers:
- L&M Farm, Glenfield, NY, Lewis County (soybean)
- Silvery Falls Farm (Farney), Lowville, NY, Lewis County (corn, alfalfa)
- Willsboro Research Farm, Willsboro, NY, Essex County (soybean, corn, alfalfa)

Background:
Crop performance and forage nutritional value are impacted by the growing environment. Data from the NY/VT Corn Silage Hybrid Evaluation Program demonstrates this as greater differences in crop performance are observed across locations than the differences measured between several different varieties at a single location.

Year two (2025) of this proof-of-concept project builds off data generated in year one (2024) and has allowed the project to leverage other sources of support to grow and set it up for continued success.

Methods/Data Collection:
In 2025, corn, soybean and alfalfa plots were established at farms representing distinct growing locations: western Northern New York (NNY) and eastern NNY. Two farms in central Lewis County (western NNY) hosted the project, with L&M Farm hosting a soybean trial plot and Silvery Falls Farm hosting both corn and alfalfa trial plots. The Cornell Willsboro Research

Farm in eastern NNY hosted trials of corn, soybean, and alfalfa. The alfalfa fields tracked in 2025 were previously established in 2024.

Two hybrids of corn, two soybean varieties, and two alfalfa varieties (Table 1) were selected and utilized at both trial locations. This allowed for comparison of the same crop genetics across the two growing environment locations.

Table 1. Crop Varieties: Corn Hybrids, Field Crop Performance Network Development Pilot Project: Year 2, NNYADP, 2025.

Crop	Variety	Relative Maturity / Group #	Traits
Corn	A	93	Smartstax RIB
	B	98	Smartstax RIB
Alfalfa	A	-	RR
	B	-	RR, LH
Soybean	A	1.1	Enlist E3
	B	1.6	Enlist E3

RR = Roundup Ready, LH = Potato Leafhopper-Resistant

Background field information (soil type, soil fertility, crop rotation, etc.) was collected for each location (Table 2).

Table 2. Field Information for Trial Locations, Field Crop Performance Network Development Pilot Project: Year 2, NNYADP, 2025.

Location	Crop	Soil Type	Planting Date	Harvest Date
Lowville (Silvery Falls)	Corn	Galway	05/27	09/21, 9/28 (silage), 11/4 (grain)
Lowville (Silvery Falls)	Alfalfa	Nellis	Replant 08/23	-
Lowville (L&M Farm)	Soybean	Farmington	05/14	-
Willsboro	Corn	Stafford	05/28	09/28 (silage), 10/11 (grain)
Willsboro	Alfalfa	Stafford	-	09/24
Willsboro	Soybean	Stafford	05/28	10/17

Corn and soybean plots were established in the spring of 2025 as the weather permitted with the selected varieties planted in field scale blocks. Proper agronomic practices (planting, pest management, plant nutrition) were utilized to maintain crops throughout the season.

The goal of the project was to track alfalfa fields which had been established in 2024. This was accomplished at the Willsboro location; however, the alfalfa planted at the Lowville location experienced winterkill in the winter of 2024/2025 and was not suitable for sampling in the 2025 growing season. A new alfalfa plot was established in Lowville in 2025; however, summer weather patterns did not permit planting until late August and forage samples were unable to be collected in 2025.

Weather Data

Weather data was collected utilizing on-site observations and the Cornell Northeast Climate Center's gridded weather data (Figure 1, Table 3). Season-long, in-person scouting of the trial locations was performed to monitor crop stage, crop performance, and potential impacting events, such as pest outbreaks.

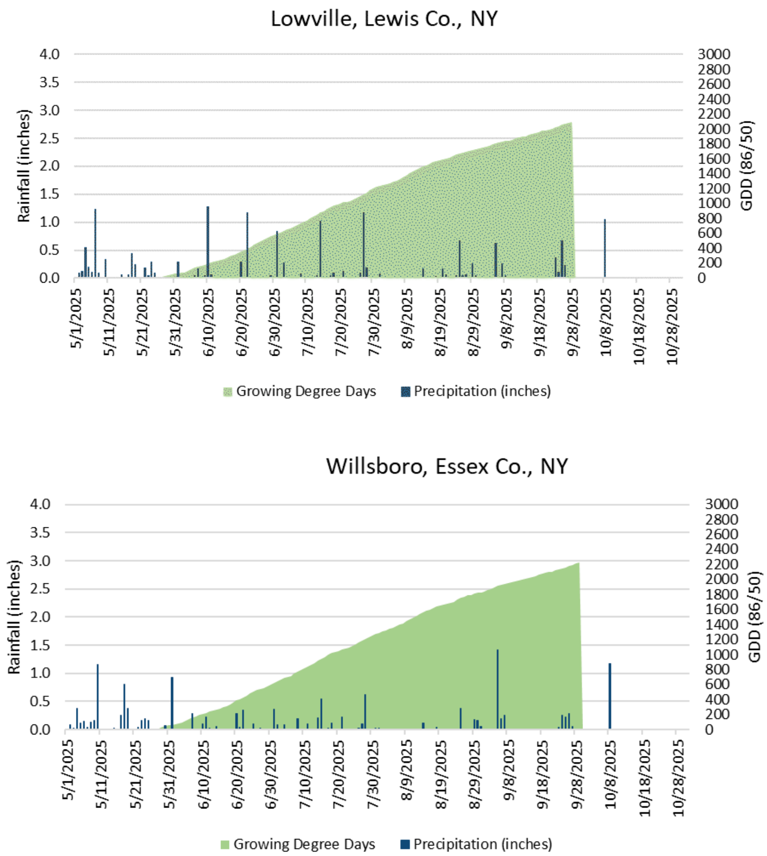

Figure 1. Precipitation and Growing Degree Days for Trial Locations, Field Crop Performance Network Development Pilot Project: Year 2, NNYADP, 2025.

The weather trend in 2025 was a relatively wet beginning to the season followed by dry to drought conditions as the season progressed (Figure 2 and Table 3). While the monthly total rainfall for the month of May was not significantly out of line with average May rainfall totals for either location, the patterns of rainfall caused delays in field work and planting at both locations. Due to the rainfall patterns in May, 2025 corn planting dates (Table 2) were approximately three weeks later than the same locations in 2024.

Table 3. Monthly Precipitation and GDDs for Trial Locations, Field Crop Performance Network Development Pilot Project: Year 2, NNYADP, 2025.

	Precipitation in Inches		Growing Degree Days (86/50)	
Month	**Lowville**	**Willsboro**	**Lowville**	**Willsboro**
May	4.17	4.31	248	274
June	3.41	2.40	512	537
July	3.93	2.73	648	686
August	1.63	0.96	516	549
September	2.28	2.72	389	412
Total	15.4	13.1	2313	2320

Harvest of each crop occurred near the target growth stage with replicated sampling.

The soybean plot in Lewis County was damaged by the extreme weather during the growing season and was not harvestable.

Forage samples (corn silage and alfalfa) were submitted to Cumberland Valley Analytical Servies for forage quality testing.

For indications of the farm-grown forages' value in the dairy diet, the Cornell Net Carbohydrate and Protein (CNCPS) model was utilized to develop balanced lactating cow diets utilizing the evaluation of the forages harvested at each location.

Results:

The results from these plots demonstrate the impacts of growing environment on plant performance and forage quality parameters. See Tables 4 and 7 (Appendix A) for "Corn Silage Yield and Key Nutritional Parameters" data and "Alfalfa Yield and Key Nutritional Parameters" data respectively.

Corn Silage Performance

Consistent with documented trends, overall growing environment influenced how corn hybrids utilized the available growing degree days (GDDs). Willsboro experienced a higher rate of GDD accumulation (Table 5) resulting in 127 more GDDs in the same number of calendar days (planting to harvest) compared to the western NNY location. However, despite more GDDs in the same number of calendar days, average whole plant dry matter (DM) was three points lower at Willsboro (Table 5).

Table 5. Corn Silage Growing Environment Data for Trial Locations, Field Crop Performance Network Development Pilot Project, Year 2, NNYADP, 2025.

Location	Planting Date	Harvest Date	Rainfall, inches Plant to Harvest	GDD (86/50) Plant to Harvest	Calendar Days Plant to Harvest	Average Whole Plant Dry Matter, %
Lowville	May 27	Sept. 28	11.3	2098	124	37.1
Willsboro	May 28	Sept. 29	8.9	2225	124	34.1

It is also interesting to note the corn silage Starch Content relative to whole plant DM and yield (Table 4). Starch content is associated with ear to stover ratio and plant maturity (DM) at harvest. As corn kernels mature (dry down) starch content in the kernels (and overall silage yield) increases and given this relationship one might expect the corn silage at Lowville to have a higher starch content; however, this was not the case in this project for 2025. The lower yields and higher starch content at Willsboro indicate that ear to stover ratio played a larger role in these results. Smaller plants with well developed ears at Willsboro resulted in a more nutrient-dense whole-plant forage.

Fiber digestibility is influenced by rainfall, with a trend toward lower fiber digestibility with higher rainfall. The below average rainfall patterns at both locations led to relatively high fiber digestibility (Table 4).

The implications of these results will be discussed further in the section on forage nutritive value and predicted allowable milk production.

Corn Silage Harvest Timing
As demonstrated with the corn silage harvest height data facilitated by the pilot year of this project in 2024, Year 2 of the project continued to provide opportunities to respond to in-season scenarios and questions by farm collaborators.

In 2025, the Lowville location offered a chance to evaluate harvest timing as farm logistics necessitated plot sampling when the corn silage was still below target plant maturity. However, the dynamic changes that happen during harvest season meant the plot field was not harvested as early as planned thus allowing for resampling one week later (Table 6).

With a one-week delay in harvest, whole plant DM and starch content trended upwards while fiber digestibility and in-vitro starch digestibility (IVSD) trended downwards. As whole plant DM and starch content increase, it is expected that yield will also increase, this was observed in hybrid A but not hybrid B. While care was taken for randomized sampling, it is important to recognize that the small sample size provides estimates of yield and may be subject to sampling error resulting in the inconsistent yield trend between hybrid A and B.

Calculating potentially digestible starch and neutral detergent fiber (NDF) per acre can be a helpful method for understanding the interaction between nutrient content and digestibility. While not statistically significant the trends in potentially digestible nutrients highlight the influence of not just the content and digestibility of a nutrient in this calculation but also the crop yield (Table 6 [Appendix A] and Figure 2). For hybrid A, potentially digestible nutrients trended upwards with yield, where the potentially digestible nutrients in hybrid B trended slightly downwards as yield increased.

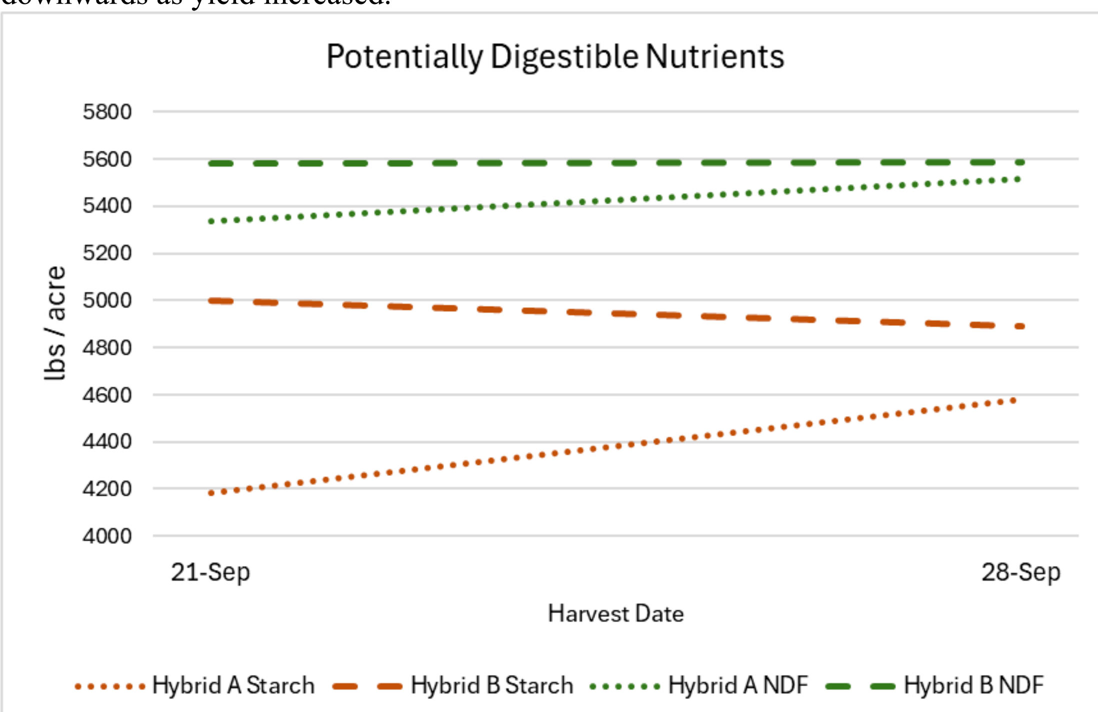

Figure 2. Change in Corn Silage Potentially Digestible Starch and NDF with One Week Delay in Harvest (Lowville Location), Field Crop Performance Network Development Pilot Project, Year 2, NNYADP, 2025.

It is important to recognize that the whole plant DM at both sampling times were not drastically outside the targeted range of approximately 35 percent (+/- 2 to 3%) plus the lack of significant differences between the sampling date speak to the ability to obtain satisfactory forage when harvesting within this range. When harvest occurs outside this range, the resulting forage nutritional value can be compromised.

Alfalfa Performance

The winter of 2024/2025 in Northern New York proved deadly to the Lowville plot. Damage was observed within the plot as well as in the host farms field surrounding the plot, indicating the damage was not due to alfalfa variety but more widespread. Efforts to re-establish the plot were delayed by growing season weather conditions resulting in no 2025 alfalfa data from this location.

The 2024 seeding of alfalfa at Willsboro successfully overwintered allowing for planned sampling in 2025. Data collection started with weekly height measurements (Figure 3) in the month of May in conjunction with Cornell Cooperative Extension alfalfa height monitoring and harvest timing programs.

First cutting harvest was based on spring height targets (J. Cherney, Cornell University). Utilizing alfalfa height to time first cutting provides a means of standardizing cutting-timing across locations, but is difficult to apply to standardize subsequent cuttings. For purposes of this project, second and third cutting samples were taken. The results of key nutritional parameters can be found in Table 7 (Appendix A); the impact of these results is discussed in the section on forage nutritive value and predicted milk production.

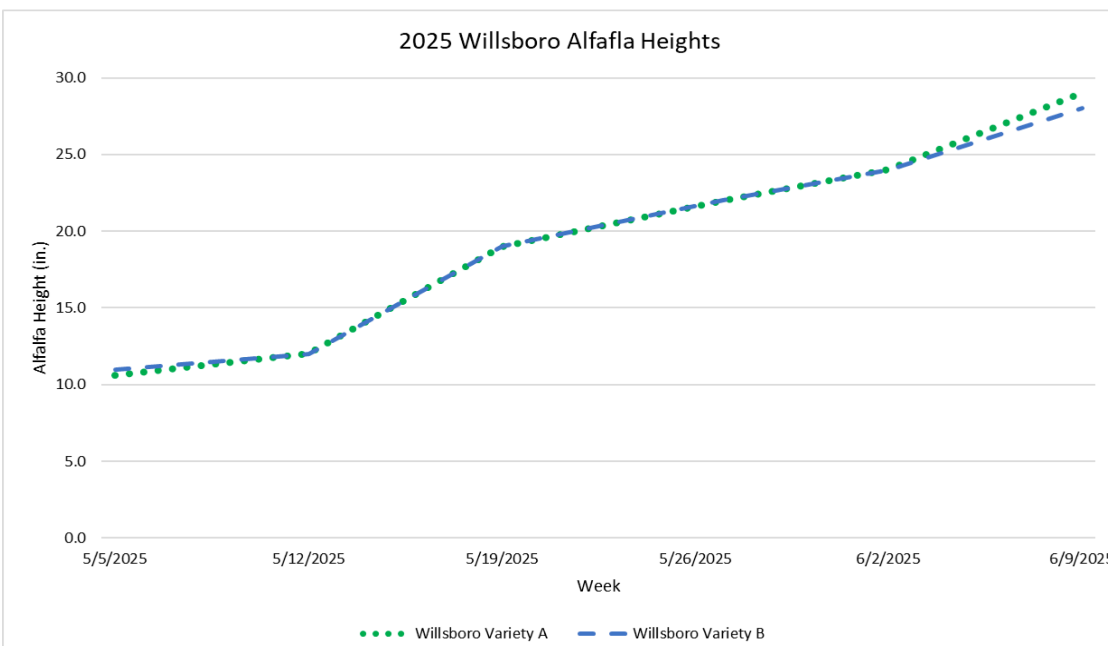

Figure 3. Weekly Alfalfa Height Measurements of Spring Growth, Willsboro, Field Crop Performance Network Development Pilot Project: Year 2. NNYADP, 2025.

Forage Nutritional Value by Location and Influences on Dairy Rations

The corn silage and alfalfa silage nutrient analysis from each location allowed the opportunity to build dairy diets with the trial-harvested forages to evaluate the influence of each forage on the diet’s forage ingredient usage and energy to milk conversion efficiency (pounds of milk per pound of dry matter intake, Table 9).

Utilizing the Cornell Net Carbohydrate and Protein System (CNCPS, NDF v6.5.6) a base diet was formulated for a multiparous, 1,600-lb cow producing 95 lbs of milk per day at 4.40% fat and 3.20% true protein content. The diet was first formulated using CNCPS feed library values for the corn silage and alfalfa silage, and was least-cost optimized using target ranges for key nutritional attributes (total dry matter intake, starch, NDF, crude protein, EE, metabolizable energy and protein supply, and metabolizable methionine supply).

The corn silage and alfalfa from the base diet were then removed and the corresponding farm-grown forages from each location substituted into the trial diet to evaluate how the use of the farm-grown forages impacted the predicted cow performance. For the Willsboro ration, 2025 corn silage and 2025 first cutting alfalfa were used. Due to the loss of the alfalfa plot in Lowville, the ration for this location used 2025 corn silage and 2024 alfalfa. While this limits the interpretation specific to the 2025 growing season, it is not uncommon for farms to be feeding forages for multiple growing seasons at any given time.

The impact of the trial-formulated diet based on allowable metabolizable protein (MP) and metabolizable energy (ME) in the milk was compared to the base diet. In 2024 the predicted milk yield increased in Lowville, but decreased in Willsboro due to the weather patterns and forage nutritional analysis (namely the fiber digestibility of the forage). In contrast, in 2025 the predicted allowable milk yield increased over the base diet at both locations (Table 8). It should be noted that simply replacing the forages in the base diet can create other imbalances in the diet. As a result, the changes in predicted allowable milk yield are helpful in understanding the impact of the forage nutrient value from each location on predicted milk production, but do not reflect the best possible diets that can formulated. **In a practical sense, this speaks to the importance of rebalancing the entire diet when there are changes in forages on farm.**

Table 8. Change in Predicted Milk Production with Trial Forages Versus Base Diet contrasting 2024 and 2025 forage quality, Field Crop Performance Network Development Pilot Project: Year 2, NNYADP.

<table>
<tr><th rowspan="5">Change in predicted milk production:
Forage change only, no adjustment to other diet ingredients</th><th>Year</th><th></th><th>Lowville</th><th>Willsboro</th></tr>
<tr><td rowspan="2">2025</td><td>MP allowable milk, lbs</td><td>+1.9</td><td>+0.6</td></tr>
<tr><td>ME allowable milk, lbs</td><td>+6.7</td><td>+4.2</td></tr>
<tr><td rowspan="2">2024</td><td>MP allowable milk, lbs</td><td>+2.5</td><td>-2.9</td></tr>
<tr><td>ME allowable milk, lbs</td><td>+3.9</td><td>-3.4</td></tr>
</table>

Key: MP: metabolizable protein; ME: metabolizable energy.

Next, the diets with forages from each location were least-cost optimized under the same set of constraints as the base diet. When the resulting cost-optimized diets were identical in cost, the secondary optimization objective was feed efficiency (lbs of milk produced per lb of dry matter intake). Though many different ration compositions can theoretically meet the same nutrient targets at similar cost, here we use least-cost optimization of a fixed set of ingredients under fixed constraints to help illustrate how forage quality affected diet composition, predicted animal performance, and feed costs. As predicting changes in milk component production resulting from dietary changes is difficult, results are expressed on a milk volume basis rather than as energy corrected milk. The results here represent one possible scenario, and many factors such as feed costs, diet composition, and other factors will influence the exact economic impacts of forage quality. As previously noted, the relatively high forage nutritive value resulting from the growing season at both locations led to diets with better outcomes than the base diet (Table 9).

Table 9. Comparison of Diets Least-Cost Optimized Based on Corn Silage and Alfalfa Silage Content Values for Trial Locations with Total Feed, Field Crop Performance Network Development Pilot Project: Year 2, NNYADP, 2025.

Ingredient		Pounds Dry Matter (lbs/cow/day)		
			Change to base diet	
		Base Diet	Willsboro	Lowville
Base Corn Silage		30.5	1.2	2.6
Base Alfalfa Silage		5.0	0.9	1.0
Corn Grain Ground Fine		7.9	-2.7	-2.4
Whey Acid		1.4	0.0	-0.3
Wheat Midds		3.2	-1.3	-2.8
Molasses Cane		0.3	-0.2	-0.2
Canola Meal Solvent		1.3	-1.3	1.3
Soybean Hulls Ground		0.0	1.7	0.1
Rumen Bypass Soy		2.9	1.8	1.5
Soybean Meal 47.5 Solvent		4.9	0.1	-0.6
Fat Supplement		0.6	-0.1	-0.1
Rumen Protected Methionine		0.0	0.0	0.0
Mineral Vitamin Mix		1.1	0.0	0.0
Sodium Bicarbonate		0.6	0.0	0.0
Salt White		0.1	0.0	0.0
Total DMI		59.8	0.0	0.0
Forage in Diet, % DM		59.4	+3.4	+5.9
Concentrate in Diet, % DM		40.6	-3.4	-5.9
Predicated Allowable Milk Production, lbs/cow/day	ME	93.9	+2.0	+4.6
	MP	95.6	+3.9	+8.1
	Energy Corrected[1]	104.75	+2.2	+5.2
Diet Cost and Efficiency				
Feed cost ($)/lb DM		0.12	0.00	0.00
Feed cost ($)/cwt milk		7.72	-0.15	-0.44
lb milk/lb DMI		1.57	+0.03	+0.08

[1] Calculated assuming no change in component % between diets, using equation of Tyrell and Reid.

<u>**Willsboro Ration Analysis**</u>**:**

- The greater starch content of the Willsboro corn silage enabled an additional 1.7 lb of inclusion, displacing corn grain and other energy feeds. An additional 0.9 lbs of alfalfa silage was also feasible. Additional protein was required to meet the additional energy supply; however, gains in milk production and savings by replacing corn grain with forage outpaced the added expense of the protein feeds. This illustrates the necessity of reformulation around your specific forage quality.

- The allowable milk value (95.9 lbs) was slightly higher than the base diet, but at a lower feed cost per cow per day, resulting in a 15-cent decrease in feed cost per 100 lbs of milk.
- Feed efficiency (pounds of milk per pound of dry matter intake) was slightly better than base diet.

Lowville Ration Analysis:

- The moderate NDF and starch and lower uNDF content of the Lowville corn silage enabled an additional 3 lbs of inclusion compared to the base diet. The high quality of the Lowville alfalfa silage also enabled an ~1 lb addition of alfalfa. Addition of forage permitted removal of corn grain and molasses, though additional canola and rumen-protected soy were required to maximize feed efficiency by balancing metabolizable energy and protein.
- Allowable milk value (98.5 lbs) was highest for Lowville, combined with the lowest feed costs via the greatest addition of forage, resulting in a 44-cent decrease in feed cost per 100 lbs of milk.
- Feed efficiency was improved over both the base and Willsboro diets.

Soybean and Corn Grain Performance

The growing season had an impact of soybean performance at both locations. At the Lewis County location weather resulted in crop failure.

A common observation in soybean production is that moisture availability (rainfall) during podfill (typically during the month of August) has a significant impact on yields. The Willsboro location experienced below-average rainfall in June through September (Table 3) with less than one inch recorded in the month of August. The impact of this rainfall was evident in the resulting yields (Table 10) and provides an interesting contrast to 2024 (Table 10) where there was excessive rainfall in August with 6.1 inches recorded at the Willsboro location. While moisture was certainly not limiting in 2024, excessive moisture may have also had a negative effect on yield.

The corn grain is interesting to study in context of the corn silage data. While the grain at Willsboro was harvested at a higher moisture content, when corrected for moisture the yields were still higher than the Lowville location (Table 11). This is in contrast to the silage yields at the two locations; however, when considering the higher silage starch content at Willsboro relative to the silage dry matter and yield indicating a larger ear and smaller plant size (ear-to-stover ratio) the silage data helps explain the higher grain yields at Willsboro.

Table 10. Soybean Performance Data, Field Crop Performance Network Development Pilot Project, NNYADP, 2024-2025.

Location	Year	Planting Date	Harvest Date	Variety / Group #	Moisture at Harvest, %	Yield Estimate (bu/a, 13.5%)
Willsboro	2025	May 28	Oct. 17	A / 1.1	12.8	26.5
				B / 1.6	13.1	37.0
	2024	May 7	Oct. 23	A / 1.1	12.5	43.2
				B / 1.6	12.1	47.7

**Soybean harvest did not occur at Lewis County location due poor crop failure resulting from the weather.*

Table 11. 2025 Corn Grain Performance Data, Field Crop Performance Network Development Pilot Project, NNYADP, 2025.

Location	Planting Date	Harvest Date	Relative Maturity	Moisture at Harvest, %	Yield Estimate (bu/a, 15%)
Lowville	May 28	Nov. 4	93	20.7	166.6
			98	20.8	200.6
Willsboro	May 29	Oct. 11	93	38.3	257.6
			98	39.2	273.2

Conclusions/Outcomes/Impacts:

Through two growing seasons this proof-of-concept project facilitated the creation of a template to deliver data to contrast the impact of growing environment on crop performance and the practical implications of that impact on forage quality and composition, dairy diet formulation, and associated costs for dairy farmers utilizing forages.

The results of this pilot project have achieved significant milestones:

- establishing a framework for a new method for better understanding when the value of forage to a dairy diet is constrained by the growing environment or by management of the forage. This understanding can help determine whether it is most impactful to allocate resources to 1) improving forage management strategies (e.g., when a farm's forage quality does not align with forage results/benchmarks from similar growing conditions) or to 2) adjusting dairy diet management (e.g., when the growing environment is shown to be the constraint in forage value);
- establishing a framework for developing a comprehensive system for evaluating crop performance in terms of growing environment factors, such as rainfall, along with forage quality, forage impact on dairy ration formulation (and when adjustments are needed), impact on farm-grown and purchased feed costs, and ultimately farm economics; and
- creating a framework that could be expanded to dovetail with existing and ongoing NNYADP–funded research that would incorporate such factors as corn silage variety trial histories, soil health, tile drainage, nutrient balancing, manure value and other agronomy practices and factors into evaluations when growing environment differences indicate the need for attention.

Outreach:

2024 and 2025 project results were presented at:

- 2024 Willsboro Farm Field Day
- Penn State Corn Silage Trial Collaborators Meeting
- South Central NY Cornell Cooperative Extension (CCE) Winter Crop meetings
- Northwest NY CCE On-Farm Research Meeting
- Delaware County CCE Meeting
- Miner Institute Cornell Dairy Nutrition Short Course
- Seed Consultants Silage Program
- Standard Nutrition Forage Meeting
- Reisdorf Forage Meeting
- Cornell Plant Breeding Methods Laboratory
- SUNY Morrisville Forage Class Laboratory
- 2025 Cornell Cooperative Extension Inservice
- 2026 Tri-County NNY Crop Congresses (Canton, Carthage), and

- as part of the New York and Vermont Corn Silage Hybrid Evaluation Program Report, November 2025 (see Appendix B for excerpt).

Additionally, project results will continue to be shared during the upcoming educational program season and extension publications.

Next Steps:

Thanks to the support of the Northern New York Agricultural Development Program over the last two growing seasons the project has been able to gain additional support (including a 2025 NY Corn Growers Association grant) that will facilitate continuation of the program into the 2026 growing season and beyond.

This pilot project's data has proven to be a valuable synergy with the NY/VT Corn Silage Hybrid Evaluation program (as demonstrated in the 2025 report) and the project has demonstrated an efficient use of resources to expand data collection to more growing environments.While financial support will still be necessary over time to maintain the project, the support to date and mometum gained sets it up well to continue.

The focus in 2026 will be on the forage aspect of the project (corn silage and alfalfa) as the work with these crops and the use of CNCPS has garnered the most interest. The grain portion of the project has proven more challenging and has garnered less interest. While the project does not want to walk away from this aspect of the project altogether, we will be working with stakeholders to determine the usefulness of including these crops and work to adjust the approach to meet stakeholder needs.

In the 2026 growing season, we expect to collect data from 8-10 locations where alfalfa is established and corn will be planted. Our goal is to reach approximately 12 locations to better represent all of the major dairy regions of NY. To accomplish this, additional alfalfa plots will be established as alfalfa plots facilitate year-over-year use of a location for both corn and hay.

Acknowledgments: The Northern New York Agricultural Development Program provided financial support for this project and has a record of supporting innovative projects that have proven successful not only to the NNY regional agriculture industry but for the farming community statewide. Special "Thank You"s g to Mike Davis at the Willsboro Research Farm, Mike Nemeth of L&M Farm, and Dallen and Cody Farney of Silvery Falls Farm for hosting field locations and supporting field operations.

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Appendix A: Key Forage Nutritional Metrics

Table 4. Corn Silage Yield and Key Nutritional Parameters for Trial Locations.

Table 6: Corn Silage Harvest Date Comparison for Lowville Location.

Table 7. Alfalfa Yield and Key Nutritional Parameters for Trial Locations.

APPENDIX B: Supplemental Report Contrasting All 2025 Trial Locations

Appendix A: Key Forage Nutritional Metrics

Table 4. Corn Silage Yield and Key Nutritional Parameters for Trial Locations, Field Crop Performance Network Development Pilot Project: Year 2, NNYADP, 2025.

Location	Harvest Date	Hybrid Relative Maturity	Dry Matter, %	Yield Estimate tons/acre, 35% DM	aNDFom, %	Crude Protein, %	NDFd 30 hr, % NDFom	uNDF240om, % DM	Starch Content, %	InVitro Starch Digestibility 7 hr, 4 mm
Lowville	Sept. 28	A / 93	38.3	29.1	37.4	6.8	54.8	10.3	40.1	56.1
		B / 98	35.8	29.5	37.7	6.9	54.6	10.7	39.9	59.3
p-value (hybrid)			*0.2801*	*0.8041*	*0.8820*	*0.8761*	*0.8941*	*0.8476*	*0.9519*	*0.7200*
Willsboro	Sept. 29	A / 93	33.7	23.8	35.1	7.8	54.4	11.3	43.1	62.4
		B / 98	34.5	24.4	35.8	7.5	57.5	10.4	42.8	62.1
p-value (hybrid)			*0.6621*	*0.7590*	*0.6688*	*0.2417*	*0.0932*	*0.2257*	*0.9185*	*0.9576*

Table 6: Corn Silage Harvest Date Comparison for Lowville Location, Field Crop Performance Network Development Project: Year 2, NNYADP, 2025.

Location	Hybrid Relative Maturity	Harvest Date	Dry Matter, %	Yield Estimate tons/acre, 35% DM	aNDFom, %	Crude Protein, %	NDFd 30 hr, %NDFom	uNDF 240om, % DM	Starch Content, %	In-vitro Starch Digestibility 7 hr, 4 mm	Potentially Digestible Nutrients, lbs/acre	
											Starch	NDF
Lowville	A / 93	Sept. 21	33.9	26.8	38.4	7.1	55.1	9.9	37.5	59.4	4,195	5,305
		Sept. 28	38.3	29.1	37.4	6.8	54.8	10.3	40.1	56.1	4,554	5,525
Lowville	B / 98	Sept. 21	32.4	29.8	36.6	7.5	57.3	9.9	37.5	63.9	5,000	5,582
		Sept. 28	35.8	29.5	37.7	6.9	54.6	10.7	39.9	59.3	4,888	5,558
p-value (harvest date)			*0.0154*	*0.4052*	*0.9677*	*0.1616*	*0.1744*	*0.5126*	*0.0925*	*0.3441*	*0.7672*	*0.6187*

Table 7. Alfalfa Yield and Key Nutritional Parameters for Trial Locations, Field Crop Performance Network Development Pilot Project: Year 2, NNYADP, 2025.

Location	Harvest Date	Cutting	Variety	aNDFom, %	Crude Protein, %	NDFd 30 hr, % NDFom	uNDF240om, % DM
Willsboro	June 11	1st	A	44.2	17.7	39.2	23.7
			B	44.9	16.6	37.7	24.5
Willsboro	July 22	2nd	A	43.3	15.9	35.3	26.2
			B	42.2	16.8	36.1	25.2
Willsboro	Sept. 11	3rd	A	33.0	20.6	43.6	17.3
			B	34.9	19.3	41.9	18.9
p-value (cutting)				*<0.0001*	*<0.0001*	*<0.0001*	*<0.0001*
p-value (cutting x variety interaction)				*0.1375*	*0.0115*	*0.155*	*0.0682*

Northern NY Agricultural Development Program
Field Crop Performance Network Development Pilot Project
2025 Project Report
APPENDIX B

Appendix B: Supplemental Report Contrasting All 2025 Trial Locations
Separate funding was utilized to implement trials at additional locations elsewhere in New York State.

Excerpt from: NEW YORK and VERMONT CORN SILAGE HYBRID EVALUATION PROGRAM FIELD CROP PERFORMANCE NETWORK, Part II, November 2025

With the goal of further studying differences in crop performance across growing environments, a network of field crop plots utilizing two corn hybrids was implemented across the region. Coupling this data with the NY VT Corn Silage Hybrid Evaluation Program expands the opportunity for growers to understand the impact of growing environment on corn silage performance and compare conditions at their farm location with plot data from locations experiencing similar growing conditions.

MATERIALS AND METHODS
The same two hybrids, 93- and 98-day relative maturity, were supplied to host farms and managed with best agronomic practices throughout the season. Each hybrid was planted in a field-size strip, a minimum of 8 rows wide. Seed was distributed to 10 farm locations; however, given weather challenges only seven plots were fully implemented and included in this report. Field data is presented in Table 2.1.

Harvest timing was dictated by host farm harvest schedules. Prior to field harvest by the host farm, three subsamples, each representing 1/1000th of an acre, were hand harvested. Samples were cut at an 8 inch (± 1 inch) cutting height and weighed to obtain an estimate of yield. An approximate 500 g sample was taken per plot replicate, resulting in 3 samples per hybrid per location. Samples were sealed in gallon-sized freezer bags and frozen. Samples were submitted to Cumberland Valley Analytical Services (Waynesboro, PA) where near-infrared spectroscopy (NIR) procedures were used to determine crude protein (CP), starch, lignin, linoleic acid (C18:2), ash corrected neutral detergent fiber (aNDFom), and neutral detergent fiber digestibility (NDFD; 12, 30, 120, 240 h).

RESULTS AND DISCUSSION
Field locations spanned from Erie County in western NY to Essex County in northeastern NY and Grand Isle County in northwestern Vermont (Table 2.1). While the general trend was above average precipitation early in the growing season followed by dry to drought conditions later in the season, the total amounts and timing of precipitation played a significant role in overall crop performance (yield and nutritional value). The trends, and in some cases lack of trends, highlight the interactions of weather patterns, soil characteristics and cropping system/rotation with crop performance.

Crop performance and weather data can be found in Tables 2.1 and 2.2, and Figure 2.1.

Cayuga County, NY

This location reported the lowest crop yield despite precipitation totals similar to four other locations. With just over 10 inches of precipitation for the season, the crop suffered significantly from the timing of this precipitation and soil health characteristics at the site. Wet conditions delayed planting until June 4th at which time soil conditions were acceptable for planting. Within 24 hours of planting, the location received intense precipitation which saturated the soil, a condition which persisted through the critical germination period. Coupled with soil drainage challenges, this resulted in significant emergence issues. Once the field began to dry out, conditions quickly turned to a moisture deficit which persisted through pollination and ear development, resulting in stunted plants and uneven ear development.

Delaware County, NY

This location was planted much earlier than other locations (May 1st) and reported the highest precipitation totals; however, crop yield remained below average. In contrast to most locations where planting was delayed until after most of the significant precipitation occurred, this location experienced significant precipitation post planting. Very well drained soil limited the potential stress from this early season precipitation. However, despite near normal monthly precipitation in July and August, the pattern of this rain and lack of soil moisture holding capacity caused drought-induced stress at key growth stages. A high average whole plant DM relative to the GDD accumulation is associated with drought conditions at harvest accelerating dry down.

Erie County, NY

Planting was delayed until June 3rd due to May precipitation. As with several of the study locations, precipitation was much lower following planting. Across most locations, Hybrid A and B showed similar performance; however, this location was the exception. Observations at harvest showed stunted ears on hybrid A which shows up as larger differences in crop yield and starch content between hybrids A and B. Reviewing field data, this variation between hybrid A and B may be associated in field topography and changes in soil type. Lower average whole plant DM aligns with low GDD accumulation due to harvest schedule restrictions.

Essex County, NY

With under nine inches of precipitation, this location recorded the lowest total rainfall from planting to harvest. Despite the dry conditions, crop performance was average or above relative to other locations in the network. Soil health characteristics providing adequate drainage and good water holding capacity along with the timing of precipitation events likely factored into the overall performance.

Lewis County, NY

This location reported the highest crop yield across the network despite below average precipitation. Soil health characteristics providing adequate drainage and good water holding capacity along with the timing of precipitation events likely factored into the overall performance.

Madison County, NY

Like the Erie County location, the difference in crop performance between hybrids A and B does not strictly represent differences in hybrid. Within field variability and slightly lower emerged populations in hybrid B are noted variables in reported yields, which were likely factors in the recorded differences.

Grand Isle County, VT

Early season conditions were marginal but a few dry days combined with well-drained soil allowed for timely planting. The weather turned dry in late July, and the plot experienced mild drought stress during critical pollination and ear development stages which persisted through the remainder of the season. As with the Erie County location, lower average whole plant DM is associated with lower GDD accumulation.

CONCLUSIONS

The Field Crop Performance Network provides insight into growing environment impacts on crop performance. Utilizing data from network locations that experienced a similar growing environment to an individual farms location allows growers to determine if results for their own corn silage performance were enhanced or constrained by the farm's growing environment and conditions or by forage management practices.

Table 2.1: Network location field and weather information for 2025 growing season.

County	Town, State	Soil Type	Planting Date	Average Tassel Date	Harvest Date	Calendar Days	Seasonal Precipitation	Seasonal GDD (86/50)	Average Whole Plant DM
Cayuga	Aurora, NY	Lima	4-Jun	1-Aug	30-Sep	118	10.1	2,144	44.2
Delaware	Unadilla, NY	Chenango	1-May	18-Jul	8-Sep	130	24.4	1,890	37.0
Erie	North Collins, NY	Minoa	3-Jun	31-Jul	15-Sep	104	10.2	1,989	31.1
Essex	Willsboro, NY	Stafford	28-May	3-Aug	29-Sep	124	8.9	2,225	34.1
Lewis	Lowville, NY	Galway	27-May	1-Aug	28-Sep	124	11.3	2,098	37.1
Madison	Morrisville, NY	Palmyra	20-May	29-Jul	1-Oct	134	17.8	2,072	38.1
Grand Isle	Alburgh, VT	Benson	13-May	26-Jul	9-Sep	119	14.9	1,977	31.6

Table 2.2: Whole plot mean for key corn silage performance indicators, 2025

County	Hybrid	Relative Maturity	Plant Population	Yield, 35% DM	Dry Matter	Starch Content	Crude Protein	aNDFom	30 hr NDFD	120 hr NDFD	240 hr uNDFom
				tons/acre	%	% DM	% DM	% DM	% NDFom	%NDFom	% DM
Cayuga, NY	A	93	33,000	12.8	44.4	31.7	7.5	44.0	62.3	69.9	12.0
	B	98	33,000	14.2	44.0	31.3	7.0	45.1	59.9	68.1	13.1
Delaware, NY	A	93	31,000	18.9	37.6	36.9	6.4	40.6	54.9	68.6	11.6
	B	98	31,000	19.1	36.4	36.7	6.2	40.4	52.2	67.5	12.0
Erie, NY	A	93	31,000	16.8	31.2	31.4	9.5	39.4	60.6	69.3	10.9
	B	98	31,000	24.2	31.0	35.7	8.7	34.8	60.3	72.9	8.4
Essex, NY	A	93	35,100	23.8	33.7	43.1	7.8	35.1	54.4	64.7	11.3
	B	98	33,300	24.4	34.5	42.8	7.5	35.8	57.5	67.9	10.4
Lewis, NY	A	93	33,750	29.1	38.3	40.1	6.8	37.4	54.8	69.6	10.3
	B	98	33,500	29.5	35.8	39.9	6.9	37.7	54.6	68.9	10.7
Madison, NY	A	93	33,250	25.2	39.6	38.6	6.6	37.0	58.1	66.9	11.2
	B	98	31,750	21.1	36.5	35.9	6.0	39.8	60.5	69.6	10.9
Grand Isle, VT	A	93	28,500	22.4	32.7	36.6	7.9	38.4	57.9	67.6	11.3
	B	98	29,600	23.8	30.5	35.4	7.3	37.5	52.9	62.8	12.8

Figure 2.1. Accumulation of growing degree days (GDD) from planting through harvest and individual precipitation events from May 1st through harvest at Alburgh, VT.

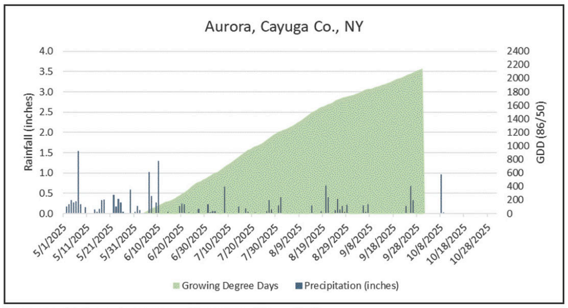

Figure 2.1a: Aurora, Cayuga Co., NY

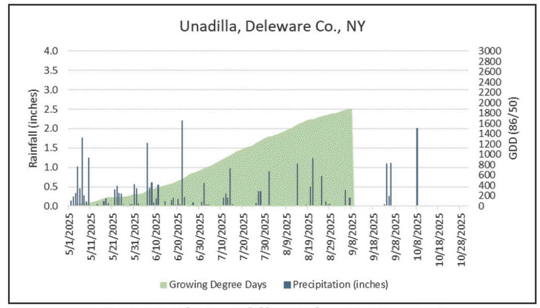

Figure 2.1b: Unadilla, Delaware Co., NY

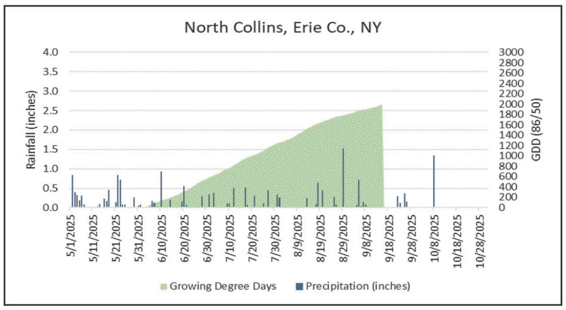

Figure 2.1c: North Collins, Erie Co., NY

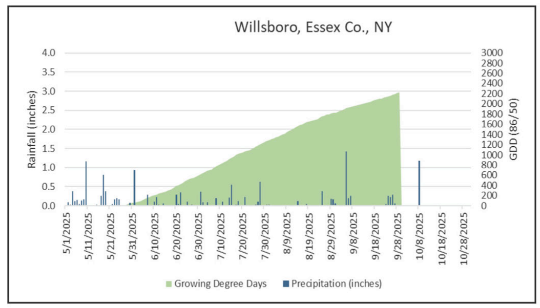

Figure 2.1d: Willsboro, Essex Co., NY

Figure 2.1. Accumulation of growing degree days (GDD) from planting through harvest and individual precipitation events from May 1st through harvest at Alburgh, VT (*cont.*).

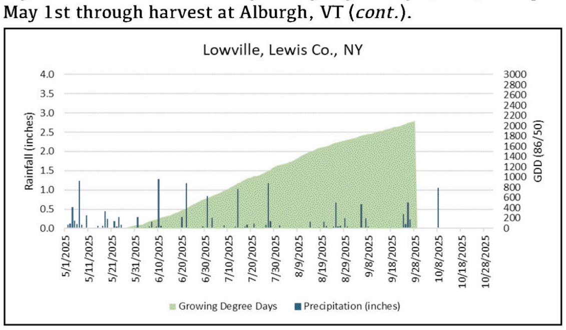

Figure 2.1e: Lowville, Lewis Co., NY

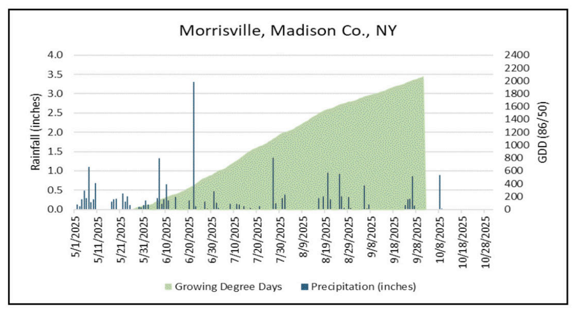

Figure 2.1f: Morrisville, Madison Co., NY

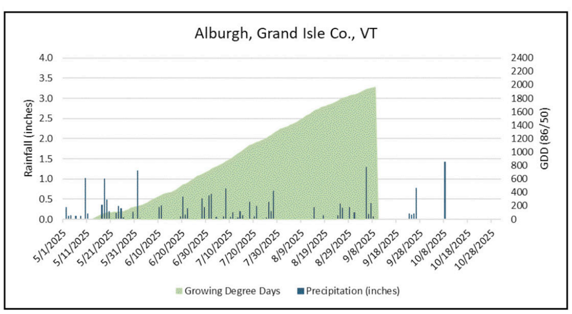

Figure 2.1g: Alburgh, Grand Isle Co., VT