You are invited to our

Annual Meeting
Dinner & Open House

Thursday, Nov. 29, 2018
6:00 - 8:30 p.m.
Dinner & Program
at our new CCE-Steuben Office, 20 E Morris St., Bath, NY
$15 Suggested Donation

Featuring our final Centennial Lecture:

From Concord to Cabernet
(and everything in between):
Growing Grapes and Making Wine in the Finger Lakes

Presented by
Hans C Walter-Peterson
Viticulture Extension Specialist, Finger Lakes Grape Program

Hans Walter-Peterson’s work currently focuses on canopy and crop load management, vineyard floor management, soils & vine nutrition, vineyard practices that promote fruit quality and vineyard productivity, and generally helping the region’s grape growers to adapt to the curve balls that Mother Nature throws at them every year. Prior to arriving in the Finger Lakes in June 2007, he worked for CCE at the Fredonia Vineyard Laboratory in the Lake Erie region of western New York for six years. Hans is currently working on his Ph.D. in viticulture at Cornell University.

Cornell Cooperative Extension | Steuben County
20 E. Morris St., Bath, NY 607-664-2300

PutKnowledgeToWork.org

Cornell Cooperative Extension of Steuben County provides equal program and employment opportunities. Please notify the Cornell Cooperative Extension of Steuben County office at least a week in advance if you have any special needs.

Cornell Cooperative Extension
Steuben County
Managing Small Woodlot Parcels

Peter Smallidge, NYS Extension Forester and Director, Arnot Teaching and Research Forest, Department of Natural Resources, Cornell University Cooperative Extension, Ithaca, NY 14853.

In New York and most of the Eastern states, the greatest proportion of woodland owners have relatively small parcels. A “small” parcel size is not defined, but often considered to be less than 10 acres, or less than 50 acres. The USDA National Woodland Owner Survey (NWOS) offers a feature to make tables and charts about owner attributes and intentions (Google search “nwos table maker”). The NWOS data for NY indicates that 62% of owners have parcels less than 9 acres and 28% of owners have parcels that are 10 to 49 acres. The average parcel size is 18.3 acres. The 90% of owners with parcels less than 50 acres collectively control about 42% of the woodlands.

![Figure 1](image1.png)

**Figure 1.** The costs for logging depends in part on the type of equipment, but for any logger there are costs for moving equipment and setting up the harvest. On small parcels, the cost per acre is higher than on larger parcels.

Small is perhaps best defined, from the owner’s perspective, relative to what the owner wants to accomplish. From that perspective, a parcel might be too small, or not. Statewide however, 13% of owners with parcels less than 49 acres have had commercial harvests, 4% of those with parcels less than 10 acres have had a commercial harvest. These small-parcel owners want to be active on their land, but are challenged by the scale of operations. As parcel sizes decrease, the feasibility for commercial activity also decreases, but there are still options.

The challenges of extracting woodland products, especially sawlogs or firewood, relate to the costs to the logger or forester of operations versus the benefit or value obtained from those products. The fixed costs include, for example, those associated with moving equipment, building landings for log trucks, arranging for log trucks, and in some communities town or municipal permits.

(Figure 1) Another fixed cost is the opportunity cost of harvesting a small parcel with the time to coordinate and execute the harvest, rather than setting up on a larger parcel that will provide a greater volume and value. Variable costs, or those that differ among harvests, might be less or greater on small parcels. On small parcels the skidding distance will be less and
thus a reduced cost. However, there will be fewer options for landings, and a higher percentage of the harvest area adjacent to neighbors. Thus, as parcel sizes get smaller, the cost of operations on a per acre basis increases. For a business (logging is ultimate a business) to justify operating on a parcel, the value must be greater than the cost.

Woodland owners with small parcels may be placed in a compromised position given the need for value to exceed cost. Some owners will decide to take no action because the changes in their woodlands would be too substantial. Owners who need to have some management applied, such as for forest health or forest products, need to find strategies to have the work done, but without overly excessive harvesting that could nullify the owner's objectives.

There are two paths an owner might take. Any given owner might take one or the other at different times for different circumstances. For lack of better terms, these paths are “Do it Yourself” (DIY) and “commercial.”

Figure 2. DIY harvests will often make use of small equipment belonging to the owner or a family member. Owners need to use particular care because they usually lack the skill of a professional logger and their equipment has fewer safety features than commercial equipment.

Regardless of the path an owner pursues, a forester should be involved in the planning, design and oversight of the activities. Because of the smaller area and likely lower values as compared to larger parcels, foresters might be more inclined to charge a flat rate rather than percentage of the harvest value. Foresters will also know the loggers who work in an area and who might have a business strategy with lower costs than other loggers. Owners should start with a DEC (Department of Environmental Conservation) public service forester, but may ultimately need to select a private-sector forester from a list provided by the DEC.

The DIY option requires that the owner or the owner’s friends have the necessary equipment, skill with that equipment, time and motivation. These are real investments and easy to underestimate. However, many owners thrive on this type of activity, or have friends who do. This option effectively reduces the costs by excluding or reducing the need to transport equipment, pay salaries, and pay overhead. Owners should be aware that their investment of time has value because they could be doing something else that might be more important or more productive.

Time and motivation are important, but if their availability is overestimated the consequences may not have great consequence. However, overestimating the skill or appropriate equipment for the task could result in personal injury, death, or damage to the woods. Of particular note is the essential need to be able to use directional felling techniques when cutting trees. Also, having the right equipment to maneuver in the woods and extract the size and quantity of logs being harvested. Another reality is that the DIY small-scale logging is hard and slow work. The equipment can’t move large quantities of wood (Figure 2). It is typically impractical to move commercial volumes of wood with small-scale equipment.

The DIY path results in logs at the disposal of the woodland owner. The owner may be able to process the logs for firewood, hire a portable bandsaw to make boards for sale, or sell the logs roadside. Each of these processes includes additional effort for the owner, and as regards the sale of products may increase the owner’s tax liability.
Skill and the correct equipment are essential. At a minimum, anyone felling trees should have training, such as Game of Logging, to directionally fell trees. The details of the topography, soils, season, and size of trees will determine the minimum types of equipment that are needed. Video of small-scale logging are available at www.youtube.com/ForestConnect and in the discussion forum at www.CornellForestConnect.ning.com

A second strategy is for the owner to work with another landowner, ideally a neighbor, to increase the total value and volume, and also reduce the cost per acre (Figure 3). Each owner could have different objectives, and require harvests based on different silvicultural prescriptions and different harvest intensity. Although easily said, the feasibility is low for finding a neighbor who is ready to harvest at the same, and use the same forester and logger. A similar strategy would be for the owner to join a woodland cooperative, but cooperatives are rare.

The challenges to managing small parcels are daunting. In some cases the owners may decide that a harvest isn’t feasible. If the final goal is to manipulate the trees that are present to create better wildlife habitat, improve forest health, or improve tree growth for bigger trees there are non-harvest options that the owner could discuss with their forester. One such option might be the use of selective herbicides or mechanical girdling to kill some trees and allow adjacent trees better growth. In all cases, the owner needs to have a clear awareness of their objectives to avoid the potential pitfalls of the management strategies they pursue.

The commercial path requires that the owner find some way to change the cost-to-value ratio. This could be through either an increase in the value or volume of wood harvested, or reducing the cost per unit of wood harvested. Increasing value might be accomplished as increasing total value, total volume, or the value per unit.

One strategy to change the cost-to-value ratio is through a more intensive harvest on the property, or focusing on just the high-value trees. Either of these approaches could be counter to the owner’s objectives, is exploitive, and could degrade the condition of the woods. The forester needs to know the owner’s objectives and be instructed to not compromise those objectives.

Figure 3. Owners who have developed a good working relationship with their neighbor, through regular communication, may be able to align their individual objects to use the same forester and logger.
Feeding Pregnant & Lactating Does and Ewes
Cornell Cooperative Extension

We’ll look over feed tags and forage analysis and then work with some easily accessible computer software programs to calculate a feed diet using typical New York winter feeds for pregnant or lactating goats and sheep. (keith ellwood, Flickr/Creative Commons)

CANANDAIGUA, N.Y. — Tatiana Stanton, Cornell Small Ruminant Extension Specialist will start this workshop off going over some of the basics of goat and sheep nutrition but move quickly to the special needs of pregnant and lactating animals be they out on pasture or in the barn. We’ll look over feed tags and forage analysis and then work with some easily accessible computer software programs to calculate a feed diet using typical New York winter feeds for pregnant or lactating goats and sheep. Tatiana will have some paper worksheets for those with no access to computers to use to figure out if the diet you are feeding your animals is adequate. She will also provide written copies of some of the diets developed by Dr. Mike Thonney at Cornell for feeding pregnant and lactating does and ewes. Participants can take these diets to local mills to see if they can formulate similar diets.

Feeding Pregnant and Lactating Does and Ewes
Tuesday, November 20, 2018
6:30 pm – 9:30 pm
Cornell Cooperative Extension
480 North Main Street
Canandaigua, NY 14424
Fee: $15.00/person

To register or for more information, call Cornell Cooperative Extension at 585-394-3977 x 427 or email nea8@cornell.edu with your name, address, and phone number.

Southern Tier Maple School

December 15th from 9:30am to noon at the Tyrone Fire Department; 3600 State Route 226; Tyrone New York 14887. Cornell Cooperative Extension’s State Maple Specialist, Steve Childs, will lead this annual refresher to help maple producers of all levels improve the productivity, efficiency and profitability of their operations. This workshop will also qualify for certification for the new “NYS Grown and Certified Maple”. Light refreshments provided. $5 donation at the door. For general information on maple syrup production, please visit: www.cornellmaple.com For additional questions, contact Brett Chedzoy of Schuyler CCE at 607-535-7161, or by email at: bjc226@cornell.edu
Changing Temperatures Helping Corn -- For Now
Harvard John A. Paulson School of Engineering and Applied Sciences

In a new paper, researchers found that a prolonged growing season due to increased temperatures, combined with the natural cooling effects of large fields of plants, have had a major contribution to improved corn production in the U.S. (U.S. Department of Agriculture, Public Domain)

CAMBRIDGE, Mass. — The past 70 years have been good for corn production in the midwestern United States, with yields increasing fivefold since the 1940s. Much of this improvement has been credited to advances in farming technology but researchers at Harvard University are asking if changes in climate and local temperature may be playing a bigger role than previously thought.

In a new paper, researchers found that a prolonged growing season due to increased temperatures, combined with the natural cooling effects of large fields of plants, have had a major contribution to improved corn production in the U.S.

“Our research shows that improvements in crop yield depend, in part, on improvements in climate,” said Peter Huybers, Professor of Earth and Planetary Sciences in the Department of Earth and Planetary Sciences (EPS) and of Environmental Science and Engineering at the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS). “In this case, changing temperatures have had a beneficial impact on agricultural production, but there is no guarantee that benefit will last as the climate continues to change. Understanding the detailed relationships between climate and crop yield is important as we move towards feeding a growing population on a changing planet.”

The research is published in the Proceedings of the National Academy of Sciences (PNAS).

The researchers modeled the relationship between temperature and crop yield from 1981 to 2017 across the so-called Corn Belt: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, Ohio, South Dakota, and Wisconsin. They found that as temperatures increased due to global climate change, planting days got earlier and earlier, shifting by about three days per decade.

“One of farmers’ biggest decisions is what they plant and when they plant it,” said Ethan Butler, first author of the paper and former graduate student in EPS. “We are seeing that farmers are planting earlier – not only because they have hardier seeds and better planting equipment — but also because it’s getting warmer sooner.” Butler is currently a Postdoctoral Research Associate in the Department of Forest Resources at the University of Minnesota.

Early planting means the corn has more time mature before the end of the growing season.

There is also a second, more surprising trend that has benefited corn yields. Whereas the vast majority of temperatures have warmed over the last century, the hottest days during the Midwestern growing season have actually cooled.

“Increasingly productive and densely-planted crops can evaporate more water from leaves and soils during hot days,” said Nathaniel Mueller, former postdoctoral research fellow at the Harvard University Center for the Environment and co-author of the paper. “Widespread increases in rates of evaporation apparently helps shield maize from extreme heat, cooling the surrounding area and helping to boost yields.”

Mueller is currently an Assistant Professor of Earth System Science at the University of California, Irvine.
The researchers estimate that more than one quarter of the increase in crop yield since 1981 can be attributed to the twin effects of a longer growing season and less exposure to high temperatures, suggesting that crop yield is more vulnerable to climate change than previously thought.

The researchers also show that the planting and harvest dates farmers currently use is significantly better adapted to the present climate than it would be to climates in earlier decades.

“Farmers are incredibly proactive and we’re seeing them take advantage of changes in temperature to improve their yield. The question is, how well can they continue to adapt in response to future changes in climate,” said Huybers.

**Utilizing Robots, Drones & AI To Feed The World**

**Mike Gore**, Plant Geneticist in the College of Agriculture and Life Sciences. (Credit: Lindsay France, Cornell University)

ITHACA, N.Y. — Digital innovations in agriculture, including robots, drones and artificial intelligence (AI), are part of a new arsenal of tools plant breeders are using to feed the world’s population.

Plant breeding has been going on for 10,000 years, said Mike Gore, professor of molecular breeding at Cornell University, but technology – unmanned aerial vehicles (UAVs), robots, AI and machine learning – is revolutionizing the practice.

Cornell researchers use robots on the ground and drones in the air to monitor the quality and growth of crops at the Musgrave Research Farm in Aurora. (Credit: Lindsay France, Cornell University)

The Cornell Initiative for Digital Agriculture (CIDA) leverages digital innovations in agriculture to improve the sustainability, profitability, resiliency and efficiency of the world’s food systems.

Among other crops, Gore’s lab focuses on corn – including corn grown in upstate New York – and the development of variations that are best suited to the short growing season and weather conditions. His lab employs camera-wielding UAVs – drones – and four-wheeled robots to perform real-time diagnostics of scores of corn varieties at the Musgrave Research Farm in Aurora, New York.

Gore’s team – in collaboration with the lab of Ed Buckler, adjunct professor of plant breeding and genetics – is developing AI for the autonomous vehicles that can count individual plants, measure plant height and check individual leaves for disease, among other tasks. And he can perform diagnostics on the plant at any point in its growth process.

“It's like knowing a baseball player’s batting average in July, as opposed to just at the end of the season,” he said. “We’re trying to identify the key plant developmental stage that you can do the phenotyping on, so that it could be predictive of yield at the end of the season.

“If you had that capability,” he said, “then you’d know what plants to cross-breed before the pollen’s even been shed.”

By using technology to detect key traits in midseason, Gore said, he can perhaps develop more precise breeding methods – and shorten the breeding timeline “from six to eight years, to maybe four or five” as the technologies are developed.
TerraSentia robot, which is being trained to perform remote diagnostics on individual corn plants, moves between rows of corn at Musgrave Research Farm in Aurora, New York. (Credit: Lindsay France, Cornell University)

He envisions a day when a robot or drone can not only facilitate rapid phenotyping, but also detect fungal diseases or weeds and immediately dispense a fungicide or herbicide in a precise dose, at just the right coordinate in the field. And while there will always be humans on a farm, Gore thinks a role-reversal could be in the offing.

“If we can train the robots, perhaps someday the robots will be training us to do very precise plant breeding,” he said. “We have more than 800 highly diverse hybrids in this field [at Musgrave]. Which one is the best for growing here, and why? Those are the questions we’re trying to answer. … We’re trying to closely model the biological reality of a plant. I would argue that, over time, robots can probably do it even better than human beings. That’s what we’re kind of on the cusp of right now.”

Developing a corn variety that’s best suited for upstate New York is one of many challenges Gore and researchers like him are tackling as the specter of feeding 10 billion people looms.

Feed Dealers Seminars

The Feed Dealer Seminars are specifically targeted for nutritionists, veterinarians, crop and management consultants, extension educators, and dairy producers with specific interest in nutrition-oriented topics. They are designed to blend the latest concepts in feeding and other management aspects of dairies with field level application. They have been conducted annually as a road show with multiple sites in New York for many years with an additional Vermont location held during the past several years in collaboration with the Northeast Agribusiness and Feed Alliance.

Locations:
Held at 6 sites in New York and 1 in Vermont

Speakers:
- Tom Overton, Ph.D., Professor of Dairy Management and Director, PRO-DAIRY program, Cornell University
- Dr. Kristan Reed, Ph.D., Assistant Professor of Dairy Cattle Nutrition and Northeast Agribusiness and Feed Alliance Partners Sesquicentennial Faculty Fellow

Topics:
- Maximizing milk fat on the dairy
- RuMUNations on nitrogen efficiency (aka, Strategies for assessing and improving nitrogen efficiency through the entire lactation)
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday, Dec. 10</td>
<td>6:00 - 9:00 PM</td>
<td>Chamber of Commerce, 37 Church St., Cortland, NY</td>
<td>Betsy Hicks (607) 391-2673</td>
</tr>
<tr>
<td>Tuesday, Dec. 11</td>
<td>8:00 - 11:00 AM</td>
<td>Quality Inn (formerly Holiday Inn), Oneonta, NY</td>
<td>Paul Cerosaletti or April Lucas (607) 865-7090</td>
</tr>
<tr>
<td>Tuesday, Dec. 11</td>
<td>1:00 - 4:00 PM</td>
<td>Cornell Cooperative Extension, Ballston Spa, NY</td>
<td>Dave Balbian (518) 312-3592</td>
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<td>Wednesday, Dec. 12</td>
<td>10:30 AM - 2:30 PM</td>
<td>Langevin House Vermont Technical College Randolph, VT</td>
<td>Sue VanAmburgh (518) 783-1322</td>
</tr>
<tr>
<td>Wednesday, Dec. 12</td>
<td>6:30 - 9:00 PM</td>
<td>Miner Institute Chazy, NY</td>
<td>Wanda Emerich (518) 846-7121, ext 117</td>
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<tr>
<td>Thursday, Dec. 13</td>
<td>12:00 - 3:00 PM</td>
<td>Ramada Inn Watertown, NY</td>
<td>Tatum Langworthy (315) 788-8450</td>
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<tr>
<td>Friday, Dec. 14</td>
<td>11:00 AM - 2:00 PM</td>
<td>Cornell Cooperative Extension Batavia, NY</td>
<td>Linda Risewick (585) 343-3040 ext 138</td>
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Forage Management

October 2018

2018 Corn Silage Overview
Joe Lawrence, Allison Kerwin and Tom Overton

For many areas of the state corn silage harvest got off to an early and good start, but wrapping up the harvest has been challenged by wet conditions in many areas.

As 2018 corn silage sits in storage, hopefully fermenting for the next few months before being fed out, it is helpful to understand how this crop might feed compared to 2017. Using the New York and Vermont Corn Silage Hybrid Evaluation program as an indicator of corn silage performance gives us some idea of average performance. Data for the detailed hybrid-specific report of the trials is still being processed but we do have enough information to look at overall performance trends.

Keep in mind this is an average of certain locations in the region and your conditions may vary. On your own farm it is helpful to take samples of your forage at harvest and prior to feed-out to understand the opportunities and challenges as you begin to feed this year’s crop. We also need to remember that while fresh samples can be a helpful indicator, some characteristics of the forage will change during fermentation, particularly starch digestibility.

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

<table>
<thead>
<tr>
<th>Rainfall, inches</th>
<th>Alburgh, VT</th>
<th>Alton, NY</th>
<th>Willberco, NY</th>
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<tr>
<td>May</td>
<td>2.13</td>
<td>3.94</td>
<td>2.05</td>
</tr>
<tr>
<td>June</td>
<td>2.58</td>
<td>4.89</td>
<td>1.61</td>
</tr>
<tr>
<td>July</td>
<td>2.63</td>
<td>4.53</td>
<td>2.36</td>
</tr>
<tr>
<td>August</td>
<td>3.33</td>
<td>4.36</td>
<td>3.03</td>
</tr>
<tr>
<td>September</td>
<td>3.86</td>
<td>4.02</td>
<td>2.79</td>
</tr>
</tbody>
</table>

| May         | 10.67      | 17.72    | 9.05         |
| August      | 14.53      | 21.74    | 11.94        |

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

<table>
<thead>
<tr>
<th>Rainfall, inches</th>
<th>Alburgh, VT</th>
<th>Aurora, NY</th>
<th>Plattsburgh, NY</th>
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<tbody>
<tr>
<td>May</td>
<td>2.13</td>
<td>3.94</td>
<td>2.05</td>
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<td>2.58</td>
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<tr>
<td>August</td>
<td>3.33</td>
<td>4.36</td>
<td>3.03</td>
</tr>
<tr>
<td>September</td>
<td>3.86</td>
<td>4.02</td>
<td>2.79</td>
</tr>
</tbody>
</table>

| May | 10.67 | 17.72 | 14.74 |
| August | 14.53 | 21.74 | 17.91 |

*Avg. - Represents averages of years: 2005-2018

Growing Degree Days (GDD), 86/50

<table>
<thead>
<tr>
<th>Alburgh, VT</th>
<th>Alton, NY</th>
<th>Willberco, NY</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>349</td>
<td>316</td>
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<tr>
<td>June</td>
<td>426</td>
<td>471</td>
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<tr>
<td>July</td>
<td>674</td>
<td>621</td>
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<tr>
<td>August</td>
<td>646</td>
<td>572</td>
</tr>
<tr>
<td>September</td>
<td>431</td>
<td>388</td>
</tr>
</tbody>
</table>

| May | 2525 | 2525 | 2525 |
| August | 2450 | 2450 | 2450 |
While some areas of the state had adequate to excess precipitation throughout the season, for much of the state the growing season was defined by below average precipitation, and above average heat (Tables 1a and 1b).

A defining difference between trial locations was the timing and amount of rainfall from late July to early September. While all locations realized some level of improvement in growing conditions with more frequent rainfall in late July and August, its timing and impact on the crop varied. In general, rain arrived at all locations in time to facilitate normal pollination of the crop but ear development varied by location.

The above average Growing Degree Days (GDD) accumulation throughout the season and particularly as the crop neared maturity resulted in fast dry down to target whole plant moisture contents for silage harvest. A noticeable characteristic at harvest in many corn fields, including trial fields, was a healthy green plant with a dry ear. The quick dry down and extended harvest period also means that some silage is going into storage at a higher dry matter content, which will impact fermentation, and these forages will need to be watched closely.

If we compare the 2017 and 2018 crop, the 2018 crop was able to reach maturity prior to a frost. This combined with lower plant yield, due to dry conditions through the early season, would suggest better total starch values than 2017. However, the effect on starch was site-specific as at some locations ear development was also affected by dry condition. So while the crop was able to mature, the number and size of kernels meant that total starch was not as high as one would hope at all locations (Table 2).

A very important indicator of forage quality is fiber digestibility. The undigested neutral detergent fiber (uNDF) offers an indicator of just how much forage the cow will be able to consume. Previous work has shown that dry conditions tend to improve uNDF, while excess rainfall (as we saw in 2017) hurts digestibility. Precipitation in August has been shown to have a particularly negative impact on digestibility. So while late season rainfall certainly helped ear (and overall plant) development it may have had a negative impact on fiber digestibility. See the average 240hr uNDF levels in Table 2.

Table 2: Whole Plot Mean For Key Corn Silage Performance Indicators

<table>
<thead>
<tr>
<th>Relative Maturity Group</th>
<th>Growing Season</th>
<th>Location</th>
<th>Yield</th>
<th>Dry Matter</th>
<th>Starch</th>
<th>Crude Protein</th>
<th>Lignin</th>
<th>uNDF</th>
<th>30 hr NDF</th>
<th>240 hr NDF</th>
<th>240 hr uNDF</th>
<th>240 hr uNDF</th>
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<td>80-95 day RM</td>
<td>2018</td>
<td>Albion, NY</td>
<td>19.2</td>
<td>36.2</td>
<td>39.2</td>
<td>8.3</td>
<td>2.4</td>
<td>34.2</td>
<td>56.1</td>
<td>29.0</td>
<td>10.0</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Willsboro, NY</td>
<td>18.5</td>
<td>35.0</td>
<td>34.9</td>
<td>8.2</td>
<td>2.5</td>
<td>35.7</td>
<td>62.0</td>
<td>27.0</td>
<td>9.7</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Alburgh, VT</td>
<td>18.3</td>
<td>33.3</td>
<td>31.0</td>
<td>7.8</td>
<td>3.1</td>
<td>39.0</td>
<td>56.2</td>
<td>30.0</td>
<td>11.8</td>
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<tr>
<td></td>
<td>2017</td>
<td>Albion, NY</td>
<td>25.2</td>
<td>30.8</td>
<td>32.3</td>
<td>8.3</td>
<td>2.9</td>
<td>37.2</td>
<td>59.1</td>
<td>27.0</td>
<td>10.1</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Willsboro, NY</td>
<td>19.2</td>
<td>31.3</td>
<td>38.1</td>
<td>7.7</td>
<td>3.1</td>
<td>39.5</td>
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<td>30.5</td>
<td>12.1</td>
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<tr>
<td></td>
<td></td>
<td>Alburgh, VT</td>
<td>27.5</td>
<td>31.8</td>
<td>34.4</td>
<td>7.5</td>
<td>3.3</td>
<td>38.9</td>
<td>53.2</td>
<td>34.3</td>
<td>13.4</td>
<td></td>
</tr>
<tr>
<td>96-110 day RM</td>
<td>2018</td>
<td>Aurora, NY</td>
<td>21.7</td>
<td>38.2</td>
<td>38.8</td>
<td>7.3</td>
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Another way to look at these key parameters and compare to previous years is by looking at how the samples spread across a range of values for these parameters. Figures 1a and 1b show the differences in uNDF and starch for 2017 and 2018 with results combined from all locations (Albion, Willsboro, Aurora, Madrid and Alburgh). With uNDF240 (Figure 1a) we see a notable shift towards lower values (higher digestibility). For starch (Figure 1b) there is a slight shift in the positive direction but the position and shape of the curve is much closer to 2017.
For the Madrid and Aurora locations we now have three consecutive years of data. As we think back to 2016, we had below-average, but seemingly adequate, rainfall in Madrid with more pronounced drought stress conditions in Aurora resulting in poorer yields but higher digestibility.

At Aurora we see that uNDF240 in 2018 (Figure 2a) is similar but slightly worse than 2016 while starch tends to look better than either of the previous two years (Figure 2c). It is worth noting the stage of maturity, as reflected by higher average whole plant dry matter in 2018 (Table 2), which will also influence starch values. Fortunately, even with the stress of 2018, yields were improved relative to 2016 (Table 2).

At Madrid the overall digestibility (Figure 2b) looks improved compared to 2016, while the trend looks quite similar for starch (Figure 2d), and average yields were nearly identical (Table 2).

With a different group of hybrids each year, the same set of hybrids were planted at Madrid and Aurora the last three years. While both locations have received sufficient nutrient inputs to meet crop demands, and there are
other variables such as weather and soil type, it is worth noting the yield performance at Madrid (Table 2). One difference we do have well documented is manure history, with consistent manure applications at Madrid, and very little to no history of manure additions at Aurora. While this is observational, it is reasonable to suggest the consistent performance at Madrid across three very extreme growing seasons can in part be attributed to the manure history and the corresponding soil health related benefits.

Each year brings its own challenges and opportunities. Given the variation in growing conditions across the region, it is critical to test your own forages, but overall it appears the 2018 crop has better feeding attributes than we dealt with in 2017. With some corn silage harvested on the dry side, consideration should be given to monitoring fermentation and making plans to feed out less stable forages during the cooler months.
Cheese: Milk narratives vary when comparing the Midwest and the coastal regions. On the coasts, milk availability has grown in recent weeks and cheese production is generally stable to heavier. In the Midwest, a number of cheese contacts suggest production is lighter and milk offers remain sparse. Demand has slipped across the nation. Although in some cases interest is steady, contacts suggest cheese markets are creating a wait-and-see, buyer friendly market. Production is mixed, but most producers suggest that stocks are starting to build across the regions. Some producers are using the slower demand season in order to build holiday inventories.

Butter: Throughout the country, bulk/print butter demands from wholesalers, retailers and food service are trending up ahead of the upcoming year-end holiday baking needs. Although cream pulls from other cream based dairy product manufacturers, such as sour cream and cream cheese, are strong, butter churning remains active. However, because of this, cream volumes are becoming tight for churners in several spot markets across the nation, boosting cream premiums in some cases.

Fluid Milk: Milk production trends vary across the states. In the East, farm-level milk is picking up in parts of Florida, but not as much where the hurricane landed. Milk production declines are reported in the Mid-Atlantic, but flat to higher in the Northeast and Southeast portions of the region. Although milk volumes are somewhat heavier in parts of the Midwest, some processors report regional tightness as inquiries for extra milk loads surge. In the western proximity, California is seeing flat milk output along with the Pacific Northwest that also reported lower production as cool wet conditions characterize the season in some areas.

Dry Products: This week, nonfat dry milk prices (NDM) are steady in the East and Central regions, but mixed in the Western part of the country. NDM markets are mostly operating at equilibrium where supply meets demand. Light trading remains steady. Dry buttermilk prices continue to show firmness on tight supplies. Production is steady to improving. Dry whole milk shifted higher in price. Trading is light. Production competes against other dry products. Whey prices are mostly stable with some increased production as a few cheese plants see upticks in work schedules. The market for whey protein concentrate 34% market is unchanged. Production is being reduced in favor of higher protein concentrations. Lactose markets are steady this week, with active interest for Q4 supplies. Stocks are fairly committed through end of year. Casein markets are steady.
With the upcoming thanksgiving and Christmas season cheese and butter buyers normally build stocks to meet the strong seasonal demand. As a result butter and cheese prices increase. But, this does not appear to be happening. Stocks held by butter and cheese manufacturers have tightened some but are more than adequate to fulfill demands by butter and cheese buyers. July 31st stocks compared to a year ago were 3.5% higher for butter and 3.3% higher for total natural cheese. Nonfat dry milk and dry whey stocks are well below a year ago, down 21.3% and 21.7% respectively.

Dairy exports have been a positive factor for milk prices. Despite retaliatory tariffs imposed by Mexico and China dairy exports continue to run above a year ago. A 64% increase in exports of nonfat dry milk/skim milk powder to Mexico was a major factor for higher August exports. In total nonfat dry milk/skim milk powder exports were 26% higher. But, August cheese exports were 7% lower due to a decline of 21% to Mexico and 40% to China. Total whey exports were still 2% higher despite a 26% decline to China. Butterfat exports were 56% higher. On a total milk solids basis August exports were equivalent to 16.8% of milk production compared to 15% a year ago.

September milk production was estimated to be 1.3% higher than a year ago. Milk cow numbers have declined for four consecutive months, are now 32,000 lower than a year ago and down 41,000 since January. But, improved milk per cow being 1.6% higher resulted in the increase in milk production.

Unless cheese prices rally November and December Class III prices will stay below $16. Currently Class III futures are in the mid-$15’s. For the year the Class III price may average around $14.95 compared to $16.16 in 2017. The November and December Class IV price could stay near $15 and average about $14.25 for the year compared to $15.16 in 2017. There is considerable uncertainty for milk prices in 2019. Butter and cheese sales should show continued growth. The level of milk production will be a major factor. USDA is forecasting a 1.5% increase in milk production. With this level of milk production milk prices in 2019 will average higher than 2018. The level of dairy exports will be a major factor as to how much higher.

USDA is forecasting 2019 exports to be 6.7% lower on a milk-fat basis and 2.2% lower on a skim solids basis. For the first four months of 2018 the Class III price averaged just $14.02. Class III prices for the first four months in 2019 should be at least in the mid-$15’s and show continued improvement in the months ahead being in the $16’s the last half of the year. The Class IV price only averaged $13.13 for the first four month of 2018. For 2019 prices should be in the high $14’s to low $15’s and increase to the higher $15’s for the second half of the year. Wet weather last spring and this fall in the Northeast and Midwest may have lower forage quality that could reduce the level of milk per cow this winter. USDA is forecasting a slight increase in cow numbers which may not happen. So the increase in milk production could turn out less than the predicted 1.5% increase which would push milk prices higher. No doubt price forecasts will change from month to month as milk production and dairy exports become known.
Seeking conservation minded individual with interests in permaculture to rent 3-4 acre, gentle grade, southern exposure field for agricultural production in Steuben County, NY. Acceptable practices include organic vegetable production, small scale poultry, and organic greenhouse or high tunnel production. Other considerations will be determined by owner. Improved, uncultivated ground will require proper preparation for success. Currently no housing available on the property, but can be discussed with owner in the future. Contact CCE Steuben at 607-664-2574 for further information.

Attention Christmas Tree Farmers I have 40-60 acres to lease at a reasonable rate. The property is located in Steuben County between Bath and Hornell. Contact Merwyn Crane at 1-315-591-8104.

Attention Cattle Farmers: I have pasture/farmland for rent, 40-50 acres, reasonable rate. Located in Steuben County on State Rt. 63. Contact Marian Crawford at 585-728-5303.

$1 Million Available for New Farmers in New York

Empire State Development (ESD) and the New York State Department of Agriculture and Markets have announced $1 million in funding is available to assist early-stage farmers through the New York State New Farmers Grant Fund.

The program, now in its fifth year, promotes growth and development in the state’s agriculture industry. To date, $3.27 million has been awarded to nearly 90 farms throughout New York State to expand their operations and improve their profitability.

The $1 million New Farmers Grant Fund will provide grants of up to $50,000 to assist with up to 50 percent of eligible project costs. To qualify, all farm business owners must be within the first ten years of having an ownership interest in any farm business, and the farm must have a minimum of $10,000 in income from sales of products grown or raised on the farm. Eligible project costs include the purchase of machinery, equipment, supplies, and the construction or improvement of agricultural structures.

The deadline for submission is January 25, 2019.