

# Cornell Cooperative Extension

South Central NY Dairy and Field Crops Program

Broome \* Chemung \* Cortland \* Onondaga \* Tioga \* Tompkins

DAIRY &  
FIELD CROPS  
DIGEST

Jan . Feb 2021

## \*Virtual\* Winter Crop Meeting Series

### Thursdays

January 14 - February 4

1:00—2:00 pm

*Cost:*

**\$10—Single Session**

**\$20—All 4 Sessions**

*Register Online:*

[https://scnydfc.cce.cornell.edu/  
event.php?id=1443](https://scnydfc.cce.cornell.edu/event.php?id=1443)

*For assistance:*

**Contact Donette @  
607.391.2662 or  
[dg576@cornell.edu](mailto:dg576@cornell.edu)**

*Questions?*

**Contact Janice @  
(607) 391-2672 or  
[jgd3@cornell.edu](mailto:jgd3@cornell.edu)**

### Speaker Topics:

**January 14th**

#### **Crop Stress—Tips for Management**

The consequences of different crop stressors & mgt strategies will be discussed

*-Allen Goodwin, Pioneer Field*

*Agronomist—Eastern NY/NE Managing*

**January 21st—\*1 DEC Credit Available\***

#### **Soybean Cyst Nematode (SCN) & Best Practices for Management**

Extent of detection rates in NYS, importance of testing, and best management practices to minimize yield impact of SCN will be presented.

*-Jaime Cummings, Field Crops Coordinator , NYS IPM*



#### **January 28th      Corn Silage Hybrid Trials 2020 Update and Management Tips**

The results of the 2020 trials will be presented with emphasis on the season's growing conditions influenced both crop yield and forage quality.

*-Joe Lawrence, Dairy Forage Systems, PRODAIRY*

#### **February 4th      Management Factors that Contribute to High Yield in Corn Production**

Research results will be presented from exploring the combined effect of common management practices like seeding and fertilization rates and timings are compared under standard management and intensive management .

*-Martin Battaglia, PhD., Postdoctoral Associate, Cornell Spear Nutrient Management*



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The South Central New York Dairy and Field Crops Program is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in 6 Counties.

*South Central NY Dairy & Field Crops Digest*



Every year has its ups and downs, challenges and brighter moments but this year was unique as we all faced a pandemic for the first time. The pandemic brought new challenges that we learned to navigate to help keep our families and ourselves safe and functional. We have certainly missed our normal interactions with you! We appreciate your efforts to adapt and adjust to using new electronic technologies to connect with us and take part in our educational offerings. Virtual conferences have both positive and negative aspects. We all miss the social interaction and suffer from 'Zoom fatigue' but video conferences do save travel time and have allowed new participants to attend meetings. We are looking forward to seeing and working with you in the New Year!

As 2020 winds down your SCNY Dairy and Field Crops Team sends best wishes for the holiday season and good health, good cheer and success in the New Year!

*Your South Central Dairy & Field Crops Team*

Mary Kate Betsy Fay Janice Melanie Donette

We are pleased to provide you with this information as part of the Cooperative Extension Dairy and Field Crops Program serving Broome, Cortland, Chemung, Onondaga, Tioga and Tompkins Counties. **Anytime we may be of assistance to you, please do not hesitate to call or visit our office.** Visit our website: <http://scnydfc.cce.cornell.edu> and like us on Facebook: <https://www.facebook.com/SCNYDairyandFieldCropsTeam>.

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# QuickBooks Online for Farmers and Growers

*An upcoming training with Mary Kate MacKenzie, Farm Business Specialist*

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QuickBooks Online for Farmers is an interactive 5-week online course runs from January 18 - February 19, 2021. The series will be taught by Mary Kate MacKenzie, Farm Business Management Specialist with the CCE South Central NY Dairy & Field Crops Team.

Course content includes readings, pre-recorded “how-to” videos, and five live webinars. Live webinars take place each week from 1-2:30pm on Fridays, from January 22nd to February 19th. Webinar recordings will be available in the online course for students who cannot attend the live sessions. Course fee is \$95 and includes 12 month access to all online course materials.

This introductory level training is a good fit for producers who have never used QuickBooks before and are ready to implement a new record keeping system in their business. It is also valuable for self-taught QuickBooks users who are looking to enhance the efficiency and functionality of their current record keeping system.

By combining the theory and practice of farm business accounting in a single course, this training program will empower you to set up and maintain a record keeping system that is accurate, efficient, and useful. The course begins with an overview of basic farm accounting principles, which provides a framework for understanding different accounting terms and transaction types. Beginning in the second module, you will apply accounting principles to

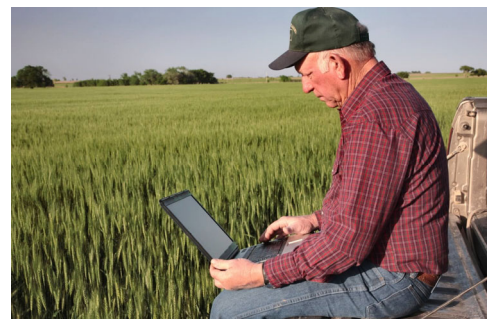
create and manage a financial record keeping system for your farm. We will use QuickBooks Online to conduct this training, so you will gain in-depth

technical experience with that software platform. However, the skills you will gain in this course are highly transferable to other versions of QuickBooks and other accounting systems.

Upon completing this course, you will be able to:

- Choose the right accounting system for your farm
- Set up QuickBooks Online with a customized chart of accounts for your business
- Classify and record different types of farm business transactions
- Synchronize QuickBooks Online with farm bank accounts and credit cards to import transactions
- Reconcile accounts on a monthly basis to ensure accuracy
- Generate and analyze financial reports to evaluate business performance
- Generate financial statements for tax accounting

If you have questions or want to register, contact Mary Kate MacKenzie by email at [mkw87@cornell.edu](mailto:mkw87@cornell.edu).

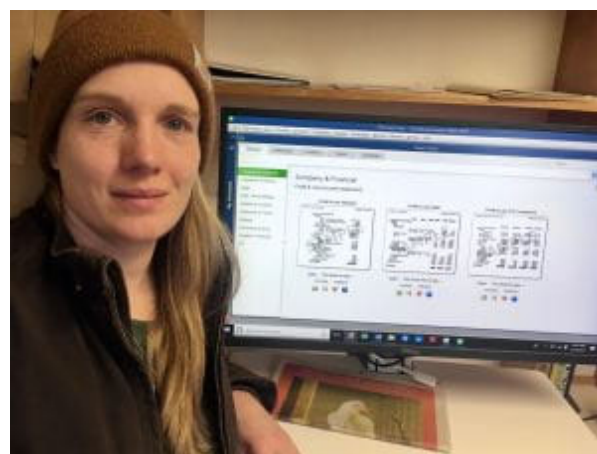


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## South Central Team Member Recognized with National Communications Award.

Mary Kate (Wheeler) MacKenzie was recognized by the National Association of County Agricultural Agents (NACAA) with a national communications award for her feature story on recordkeeping, originally published by Cornell Small Farms Quarterly in January, 2020.

“Rate Your Record-Keeping System” was printed earlier this year in the Dairy and Field Crop Digest. To access Mary Kate’s original story, feel free to visit our blog post at <https://blogs.cornell.edu/scnydairyandfieldcrops/2019/12/16/rate-your-record-keeping-system/>





# Considerations When Leasing Agricultural Lands to Solar Developer

*By Mike Nuckols, Local Foods and Horticulture Program Manager; CCE—Jefferson County*

In July of 2019, Governor Cuomo signed The Climate Leadership and Community Protection Act, which sets a goal for New York State to reduce net carbon emissions to zero by 2050. This legislation and related federal programs have created strong incentives for development of both small and large-scale solar projects.

Until recently, solar development has largely been absent from the North Country; however, interest is rapidly expanding. In general, developers of solar projects seek level sites free of trees near major (three-phase) transmission hubs, to include power substations, and near roads. These site requirements often coincide with agricultural lands. The size of these projects can range from a few acres for small community projects that deliver under 5 megawatts to dozens of acres for projects exceeding 20 megawatts (and higher).

Financially, solar leasing can be a sudden and substantial windfall for landowners. That said, farmers need to approach such deals with caution. Consider the following when evaluating a lease agreement:

**Do your research to ensure a fair deal.** Consider that multiple companies are investing in solar projects throughout the state. The first company that approaches you may not always give you the best lease offer. Is their offer reasonable and fair compared to similar projects in the area or region? Are you being pressured to sign a contract without time for adequate review? Is payment tied to electrical rates and/or production expectations or is it a fixed annual lease? Lease rates can vary considerably depending on the location (near a three-phase transmission hub), local power demand and rates, state and federal incentives, installation costs, site accessibility, and the amount of land available nearby.



**Ask the developer if they are willing to locate the solar installation onto portions of your land with the least impact to your farm.** Selection of solar locations are often based upon access to the power grid and roads with little consideration for the intrinsic current and future value of the farmland underneath. Ideally, solar systems should be placed on soils of lesser agricultural value, retaining acreage with the best soils and geology for strictly agricultural purposes. If you needed to expand production, would you have enough of the right kind of land available to do so? Or, would you be left with the rocky soil unsuitable for production? Furthermore, do you have right-of-entry through the project to reach other land on your property? If the project is not built or if it is significantly delayed, can you continue to use the land in the meantime?

**Address compatible agricultural uses within the leased parcel.** Continued use of the land for other agricultural purposes is another consideration. Research at Cornell

University has shown that sheep can be successfully incorporated into fenced solar installations as a way to reduce the amount of mowing required. Does the contract allow you to place sheep within the leased area? Does the contract allow the solar company to hire other farmers or companies to mow or graze the property? How will they access the site? Can the alleys between solar arrays be cut for hay? How high can the grass get before it becomes a detriment to solar production? If there are trees near the property, or if an adjacent pasture is allowed to revert to forest, does the developer have a right to cut those trees? How deep will electrical lines be buried? Recent demonstration projects have shown that vegetables can be grown under solar panels if they are mounted high (eight-feet). Would the developer accommodate that type of installation? Can

*(Continued on page 5)*

the land under the panels be cultivated for crops that tolerate light shade? Will herbicides be used to control vegetation? Can manure be spread on the parcel? Compatible and incompatible agricultural land uses should be detailed in contract documents.

**Consider the tax implications carefully.** Installation of solar on a property may potentially have significant tax implications. Land classified as agricultural may be reclassified as industrial or commercial with higher tax rates. Removal of agricultural exemptions could result in retroactive penalties. Solar panels may be considered taxable improvements. Landowners might consider language in leasing contracts to address such tax increases. They might also consult with town tax assessors prior to signing agreements.

**Comply with zoning and related ordinances.** County, town, and village zoning laws might prohibit solar installation to prevent nuisances to adjacent property owners. Is solar allowed on your land? Furthermore, will the Town allow the construction of access roads and associated infrastructure? Farmers might include language in contracts that requires the developer to complete all required studies, such as environmental impact statements, to adhere to all zoning requirements, and to obtain all relevant and necessary permits.

**Consideration must also be given to existing covenants, conservation easements, or similar deed restrictions.**

**Comply with stormwater and erosion control requirements.** Control of stormwater runoff and erosion during construction, especially on sites exceeding one acre, is required by environmental regulations.

Furthermore, changes in drainage due to grading and soil compaction are possible; the effects of such changes may not appear for several years. Will the developer meet all stormwater permitting requirements during construction

of the solar array? Will they install all required erosion control practices? If erosion occurs, who is responsible for repairing the damage? The method of installation will greatly impact the amount of soil disturbance to be expected. The installation of large concrete pads will result in significantly more impacts than a contractor using screw piers or piles, whose footprint is comparatively small.

Furthermore, who owns any soils that are excavated while leveling ground or installing concrete pads? Can the contractor remove them from the site? Will they bring soils in from other locations, which may potentially be contaminated with industrial chemicals or contain invasive weed seeds?

**Closely review end-of-lease terms.** In general, lease agreements will be for the life of the solar panels, typically twenty to thirty years. At the end of the lease agreement, will the contractor be required to remove the installation, to include access roads, should they not renew the lease? Furthermore, if that contractor goes bankrupt, what assurances are given that the site will be restored? Is the contractor willing to post a bond for decommissioning and site restoration? If concrete pads are poured, will they be abandoned in place? If earthwork is required to level the site, will natural topsoils be replaced? Some companies include right-of-first refusal at the end of the contract period. Such a clause could prevent farmers from leasing to other companies for higher rates. Is that acceptable to you?

**Make sure your bank approves.** If you have a mortgage, your lender might need to approve or endorse the lease agreement.

**Address insurance and liability concerns.** Should an accident occur on the property, what happens? Will the solar company provide insurance? Or, will you have to increase your liability insurance to cover potential losses.

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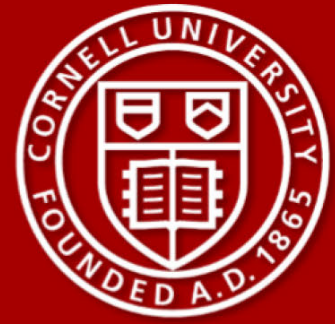
For more information or to make an appointment



**Cornell Cooperative Extension**

# **Critical Calf Care:**

## **Urgent Decision Making for Dairy Calf Health**



CCE Regional Ag Teams are excited to offer this NEW calf care series! Join us **VIRTUALLY** for a 7 week series on critical calf care topics! This series will be offered every Tuesday starting January 5, 2021 at 12:30pm EST.

Our last session on February 16, 2021 will be a LIVE panel discussion with Dr. Fernando Soberon (Standard Nutrition Consultants), Dr. Rodrigo Molano Torres (Valacta), Dr. Laura Rath-Brown (Midstate Veterinary Services), Dr. Jen Walker (Danone North America), and a local NY dairy producer.



### **Registration:**

**<https://tinyurl.com/calfcare>**

**Thanks to our generous sponsors, this program is offered at NO COST!**

For registration help/ questions please contact:  
Alycia Drwencke, [amd453@cornell.edu](mailto:amd453@cornell.edu)  
585-343-3040 ext 138

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**January 5, 2021 –  
Recognizing & Diagnosing  
Disease**

**January 12, 2021 – Dystocia  
& Difficult Calvings**

**January 19, 2021 –  
Record Keeping &  
Economics of Disease**

**January 26, 2021 –  
Hydration Status &  
Electrolytes**

**February 2, 2021 – Scours &  
Nutrition**

**February 9, 2021 – "911 –  
My Calf Needs Help!"**

**February 16, 2021 – LIVE  
Panel Discussion**

*\* All sessions  
offered online  
(via Zoom) at 12:30pm EST\**



## Podcast from CCE Dairy Educators & PRO-DAIRY, "Troubleshooting Herd Health Issues on Your Dairy"

This podcast is a series about troubleshooting herd health issues on dairy farms. It features PRO-DAIRY and CCE Dairy Specialists who over the course of fourteen episodes will discuss specific areas to look at when experiencing issues in different life stages of the dairy cow. Episodes focus on preweaned calves, transition through weaning, heifer phase, calving pen issues, metabolic disorders of the transition cow, specific fresh cow issues, lactating cow issues reproduction, production, facilities, hoof health and during the dry period. Some episodes feature guest speakers and case studies, and will be released starting November 30<sup>th</sup>. Look for a new episode each week on the PRO-DAIRY website (<https://prodairy.cals.cornell.edu/events/podcasts/>) where you can find each episode along with additional resources and speaker contact information. You can also listen via SoundCloud on the CCE Dairy Educators channel, and check back for future podcast series. For more information, contact PRO-DAIRY's Kathy Barrett ([kfb3@cornell.edu](mailto:kfb3@cornell.edu)) or your CCE Regional Dairy Specialist, Betsy Hicks ([bjh246@cornell.edu](mailto:bjh246@cornell.edu)).



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coping with COVID-19 stress | referrals to additional resources





# It's Always the Nutritionist's Fault!

By Casey Havekes, Betsy Hicks, Margaret Quaassdorff, CCE Regional Dairy Specialists

The role your nutritionist plays in the success of your dairy goes beyond the diet they put together. Ensuring good communication, having a basic understanding of your diet, and knowing what additives are incorporated and why they are added, can improve performance on your dairy. It is equally important to recognize that herd management also plays a critical role in success as nutrition alone will only take your herd so far. Because of this, CCE Dairy Specialists hosted a webinar titled, *"It's Always the Nutritionist's Fault! Understanding diets and improving communication on your dairy"*. In case you missed the live webinar, below is a recap of the main points. You can also click [here](#) to watch the recording!



## Understanding Diets

It can be overwhelming when first presented with a diet summary. The nutrient acronyms, dry matter versus as-fed numbers, and the

amount of information packed on the sheet can get the best of many dairy producers. Breaking down a diet summary into its main parts is the first step to understanding what the nutritionist has formulated to be put in front of your cows.

On the diet summary, one of the main areas to be spelled out is the description of the cow that the diet is formulated for. Breed, weight, body condition score, days in milk, milk production and milk components are all important factors that go into determining the requirements for that cow's diet. If some of these descriptors are incorrect, having a discussion with your nutritionist to better depict that cow can help you both to dial in to her requirements, which impact the nutrients the nutritionist will want to target.

After requirements are established, the diet summary should list those nutrient parameters, as well as as-fed and dry matter weights for forages and concentrates used in the diet. The main nutrient parameters that dairy producers can look at may vary between nutritionists and software used, but in general the list can include total Dry Matter of the diet (DM%), percent forage in the diet (% Forage), Crude protein (%CP), Rumen Degradable Protein (%RDP), Starch, Sugar, Digestible Fiber (%NDFDom), Fat (%fat or %EE), and mineral and vitamin levels. *It is not important for the producer to know how to formulate a diet. Instead, it is important for the producer to understand how the main nutrient numbers may change when there is a diet change, or when comparing two diets for price or performance.* Often in lactating diets, changes to the diet should keep certain nutrient parameters static through the diet change, if at all possible. These might include keeping percent fat in the diet the same, rumen degradable protein unchanged, or the addition of

starch, sugar and digestible fiber the same even though those three nutrients themselves may differ from the previous diet. Each nutritionist may have a different thought process for moving through a diet change. Talking to him or her about their methods will help you both understand what is most important for each diet in your herd.

Overall, because nutritionists formulate on *nutrients* and not necessarily *ingredients*, the total diet nutrient balances for Metabolizable Energy (ME) and Metabolizable Protein (MP) can also be examined. A well balanced diet will show ME and MP levels about level and not over- or under-meeting requirements. Imbalanced levels of ME and MP mean a diet is either limiting response or wasting money. It is important to note that some companies may not tell you the exact ingredient formulation of their grain mix. However, they *should* be able to give you a diet summary and tell you main diet nutrient numbers, targeted requirements and dry matter intake, as well as any additives that are in the mix.

Lastly, the diet summary should have a portion that describes the cost of the diet alongside the total pounds of dry matter intake. Questions a producer should ask include: Does diet Dry Matter Intake (DMI) match actual Dry Matter Intake average of the group of cows? Does this diet cost include the cost of forages? If so, what are costs included at? Without knowing these numbers, it's almost impossible to accurately compare two diets side-by-side. If the numbers describing intake are *incorrect*, it's an opportunity to further work with your nutritionist to again dial in to a diet that describes what your cows are eating. If they are *correct*, you can work towards understanding your total Income Over Feed Costs (IOFC), a number that can be used to help compare the performance of two diets or when making a diet change.

## Additives in the Diet

Feed additives function to correct a ration imbalance, magnify a productive or health response, as well as help mitigate underperforming management. Feed additives can play a variety of roles when incorporated into the diet including energy balance, calcium balance, immune function, rumen enhancement, reproduction efficiency, foot health, protein efficiency, and mycotoxin inhibition. Deciding which feed additives are worth incorporating into the diet is typically a decision guided by your nutritionist.

Regardless, it is important to understand what makes each additive a good choice. We can use "The Four 'R' Concept" from Mike Hutjens, Professor Emeritus at the University of Illinois, to help evaluate each additive. The first "R" is *response*; where you can identify the

(Continued on page 9)



expected performance changes when the additive is included. Is it supposed to increase milk yield or components? Does it have a positive effect on dry matter intake, or more efficient rumen function or growth rates? What about overall animal health? The next "R" is *return*. The additive should have a clear and high benefit-to-cost ratio (>2:1). Some common additives with high benefit-to-cost ratios are anionic salts and similar products (10:1) that are used in DCAD diets to prevent milk fever; biotin (5:1) that promotes hoof integrity; monensin or rumensin (5:1) which improves feed efficiency; yeast culture and yeast (4:1) which has multiple rumen and immune benefits; and rumen protected choline (2:1) to minimize fatty liver in transition cows. In addition, are there other paybacks that are not easily monetized, but have a large proven positive effect (better herd health)? Speaking of proven effects, the third "R" stands for *research*. For best results only choose feed additives that have unbiased scientific research studies that back up their claims. Your nutritionist should be able to help you find information on this. The final "R" is *results from your farms records*. Do you see improvements in herd health, pregnancies, fresh cow performance, growth rates, or production performance? If not, check your records and start keeping track of the numbers so that you can make the best decision.

In addition to Hutjens', I would also add my own "R", *right timing*. Think about if an additive makes sense given the amount of cows it is going to, which groups it will benefit, and the time of year. Some additives, like those that aid in starch digestion may be best reserved for times when corn silage is freshly fermented. Certain mineral additives may show the most benefit when heat stress is challenging your cows. Overall, gather info about the product, and ask your nutritionist if you can have the research studies behind it. Work on a partial budget to see what you would have to do for the additive to make sense in the diet, identify the parameters you need to measure to know that it is working...and keep track.

### **Management & Nutrition**

There is a popular saying in the dairy nutrition industry and it goes "there are 4 types of diets on the farm: the one the nutritionist formulates, the one that is mixed, the one that is delivered, and the one that the cows actually eat". Of course, there will be day-to-day variation in which the diet that is prepared, mixed, and fed deviates from the prepared batch sheet that your nutritionist sent you – and that is okay! If, however, the prepared diet deviates largely from your formulated diet some consideration is warranted. Particularly, it is important to ask yourself why you are deviating so much. Perhaps you are out of a certain feed ingredient, or you switched grass cuttings or bunks. Maybe you noticed a change in dry matter, or you noticed a change in the cow's manure, or that butterfat is down. Whatever the reason may be, and however simple the reason may be, it is important that your nutritionist is aware of the

change so that they can make record of it and make any necessary changes.

Additionally, there are several management points that should be regularly communicated with your nutritionist. Some of these include: mixing issues, grain flow issues, odd cow behaviors, abnormal refusal rates (very high or no refusals), undesired feeding behaviors (sorting), cow/pen numbers, manure consistency, and metabolic issues. It is important to remember that your nutritionist wants to make the best and most affordable ration for you and your cows, but nutrition can only take the herd so far and there is a very large role that management plays in the herd's success.

### **Relationship between Nutritionist & Producer**

The relationship between the producer and the nutritionist can make or break the herds productivity. One strategy to maximize success of this working relationship is to make sure that both parties are on the same page, and to make sure that goals are measurable and achievable. Undoubtedly, it can be frustrating to ask for or suggest a change, only to revisit the topic a couple of weeks or months down the road and find that nothing has changed. If you find this is a regular occurrence, it may be worthwhile for you to evaluate the reason behind it. Perhaps your goals and your nutritionist's goals aren't lining up, or the goal is unrealistic. Having these conversations, albeit uncomfortable, are crucial for maximizing success. One tip when setting goals is to set a timeline, and track progress. Improvements take time, and may require management and nutrition changes, so be sure to be patient and allow your timeline to reflect this. The second thing you should do is monitor progress. Keep reports of significant management and nutrition related changes so that you can go back several months down the road and pick up any trends in cow performance.

Another important piece of the puzzle is to create solutions together. A video created by Daniel Scothorn recently highlighted the fact that as a producer, you are the one around your cows every day thus your perception of any issues or challenges is extremely valuable. If you are experiencing production or metabolic issues that you feel may be related to nutrition, it is important that you communicate not only that you are seeing an issue, but also *what* you are seeing (i.e. sorting, loose manure, loss of body condition etc.). Just remember, your nutritionist is not there every single day and even when they are there, they very likely aren't seeing everything you see day-to-day. Investing in your own part of your herd's nutrition is a critical component of success – both the cow's success, and the success of your relationship with your nutritionist!

In summary, if you want to take your herd performance to the next level, start by ensuring your goals align with those of your nutritionist. This includes seeking out a better understanding of your diet, and the role of any included additives. Lastly, herd management and the way the diet is fed will have a direct impact on performance, which highlights the importance of your role in your farm's success.



# Updates on DEC Pesticide Law and Current Status

*By: Janice Degni, Extension Field Crop Specialist*

On April 7, DEC suspended the provisions of the pesticide law known as 6 NYCRR Part 325 regulations (Remember the yellow booklets from training class?) . “The Department took that action to alleviate hardships certified pesticide applicators and registered pesticide businesses and agencies were experiencing due to the COVID-19 emergency. The enforcement discretion expired on **November 23, 2020**.

Upon expiration of this enforcement discretion, all provisions of 6 NYCRR Part 325 will be in effect and any violation thereto will be subject to enforcement action by the Department. Beginning November 24, 2020 certified pesticide applicators will be required to have a valid, current certification identification (ID) card in their possession in order to make any commercial or private applications of pesticides and registered pesticide businesses and agencies will be required to have a current registration to operate as a pesticide business or agency.

Under the regulations, a certified pesticide applicator has until 90 days past their recertification date to complete recertification without additional recertification credits being assessed. Therefore, the Department will continue to waive assessing 6 additional recertification (“penalty”) credits for 90 days past the expiration of the enforcement discretion or until February 23, 2021. Please be aware, during the 90-day period, you may not apply pesticides without a valid certification ID card in your possession. Penalty credits will be required for recertification from February 24, 2021 until two years after the date of the certified pesticide applicator’s original recertification date.

Any questions regarding the expiration of the enforcement discretion should be addressed to the Pesticide Reporting & Certification Section at [pestmgt@dec.ny.gov](mailto:pestmgt@dec.ny.gov) or by telephone at (518) 402-8748.” – official memo from NYS DEC



## Do you need DEC Pesticide Recertification Credits?

There are 2 workshops scheduled for this winter with 1 credit per session. The workshops are 1 hour and you earn a credit for every 60 minutes of training. The workshops are Jan 21 and Feb 9. See the Winter Crop Meeting and Practical Soil Health Series announcements for details and visit our webpage calendar for additional workshops.

There are also on-line options for earning your credits. The cost for the classes falls between \$15-\$25/credit. You can find the courses at: Cornell Courses- <http://pmeppcourses.cce.cornell.edu/> and Pesticide Education Courses: [Online Pest Control CEU Courses | Pested.com](http://OnlinePestControlCEUCourses.com). Pested courses are lower cost. A private applicator renews every 5 years and needs 10 credits to renew. A minimum of 25% or 2.5 credits must be specific to your category and they must be earned in more than 1 year. If you will not have enough credits to renew registering for a recertification exam is an alternative option for license renewal. You need to take the exam before your expiration date. Exams will be offered at the DEC office in Cortland located at 1285 Fisher Ave. Pre-

registration instructions, forms and dates can be found at: <https://www.dec.ny.gov/nyspad/?0>.

Contact Jackie at 607-753-3095 ext. 232 or 1-800-388-8244 ext. 232. to preregister. (Feb 10 is the first exam date in 2021.)

I plan to organize a Pesticide Applicator Training (PAT) for this winter. It will be offered virtually so if you have not participated in a video conference and would like to participate contact me to see if your computer is capable and if the format will be accessible for you.

This goes for any of our training this winter. We will help you get familiar with zoom so that you can attend our meetings from the comfort of your home or office. Please contact me if you are interested in the PAT which is designed as preparation for the test for an applicator’s license.





For example, if the panels were blown into a roadway or adjacent property during a windstorm, who is responsible? If you damage panels during routine farm operations, who repairs them?

**Consult an attorney.** Solar leasing contracts can be complex. The issues presented in this paper represent only a fraction of solar leasing concerns. Given the long-term ramifications, we strongly recommend that you have lease agreements reviewed by an attorney to avoid unexpected surprises such as transfer of mineral rights or mandated renewal after the performance period expires. Due diligence is required to avoid exaggerated claims of financial windfall or outright scams.

Solar leasing has the potential to significantly help farmers balance their budgets with minimal impact to farm operations and should be carefully considered. For more detailed information on solar leasing, consult the following publications:

**Guide to Land Leases for Solar, Solar Energy Industries Association.** <https://www.seia.org/sites/default/files/resources/SEIA%20Guide%20to%20Land%20Leases%20for%20Solar%20July%2027%202016.pdf>

**Landowner Considerations for Solar Leases, New York State Energy Research and Development and New York State Department of Agriculture and Markets**

[https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/17044/Solar Lease Landowner Considerations May2016.pdf?1470164409](https://s3.amazonaws.com/assets.cce.cornell.edu/attachments/17044/Solar%20Lease%20Landowner%20Considerations%20May2016.pdf?1470164409)

**List of Community Solar Projects and Associated Developers**

<https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Solar-for-Your-Home/Community-Solar/Community-Solar-Map>

**Leasing your Farmland for Wind and Solar Energy Development: A Beginner's Guide for Farmers; New York Farm Bureau, December 2016.**

[http://www.nyfb.org/application/files/2014/9780/6349/file\\_v349d211hx.pdf](http://www.nyfb.org/application/files/2014/9780/6349/file_v349d211hx.pdf)

## Still Taking Surveys of Dairy x Beef Use on Dairies in New York

Are you a dairy producer in New York State? The usage of beef on dairy genetics has steadily grown over the last few years, and we are working towards understanding the trends and markets of this strategy. Has your farm used beef sires as a part of your breeding strategy?

Even if you have not used beef sires in your dairy herd, you are encouraged to take the following survey to fully quantify the usage of beef sires. If you have not used beef sires, the survey should only take a minute to complete. We ask you to take this survey, put together by CCE Regional Dairy Specialists. This survey can be accessed using the QR code below, or at the following link:

[https://cornell.ca1.qualtrics.com/jfe/form/SV\\_4HHU14xa0XN4xg1](https://cornell.ca1.qualtrics.com/jfe/form/SV_4HHU14xa0XN4xg1)

The survey should take approximately 15 minutes to complete. You can start it now and access it again later for completion, if needed. Your participation in this survey will help CCE to compile data on usage of beef sires on dairy farms in New York State Assemble common practices & gather financial parameters for marketing dairy x beef calves in New York State and provide information on the current dairy x beef market.

The survey will be open for several months, starting mid-October. For questions, please contact Betsy Hicks ([bjh246@cornell.edu](mailto:bjh246@cornell.edu)), Regional Dairy Specialists with Cornell Cooperative Extension.

*We sincerely appreciate your participation and we look forward to sharing our results with the dairy industry!*



## Online Feeder School

### Did you miss the Feeder School?

To access the PDFs: <https://cornell.box.com/v/OnlineFeederSchool>. To access the recordings, use the link below which will take you to the PRODARY events webpage. Scroll down to access the recording. <https://cals.cornell.edu/pro-dairy/events-programs/regional-programs>.

### Program Details:

The Online Feeder School is a 2-part educational program for farmers, employees, and agriservice professionals who work as or with the feeder – the person responsible for mixing TMR, maintaining bunk silos, and communicating with other farm staff. It will cover monitoring dry matter, feed bunk management, bunk face management, and troubleshooting mixer wagons. CCE Regional Dairy Specialists from around NYS have collaborated to develop this program.

### Speakers: Dr. Bill Stone (Diamond V), CCE Regional Dairy Specialists, PRO-DAIRY

The Online Feeder School features Dr. Bill Stone of Diamond V, who has helped a multitude of farms troubleshoot issues with feeding their dairy herds. He adds his expertise in troubleshooting mixer wagons and will be live to answer questions during discussion. CCE Regional Dairy Specialists and members of Cornell PRO-DAIRY round out the lineup of speakers for the 2-part program.

# Managing Corn Rootworm in NY to Delay Bt Resistance

## (& save seed costs) *Elson Shields, Entomology, Cornell Univ., Ithaca*

Across the US and within NY, corn rootworm (CRW) is developing resistance to the Bt-RW traits in our GE corn varieties, causing increased root damage and decreasing yields. Yield losses from CRW root feeding can surpass 10% without any above ground symptoms, making this type of loss difficult to detect. In addition, corn grown for silage is more sensitive to yield losses from CRW feeding than corn grown for grain. As CRW resistance increases to Bt-RW, the damage becomes more apparent and easier to detect, but losses have been occurring in the field in prior years, going undetected. Increased damage has been reported in NY for all of the Bt-RW traits regardless of company.

**Important points about CRW biology:** There are two important points about CRW biology which need to be remembered when managing this pest and reducing its potential for developing resistance to any of our management tools. 1) In NY, all eggs are laid in existing corn fields during August, and 2) if the newly hatch CRW larvae in the spring do not find a corn root, they die. Since CRW eggs are laid in existing corn fields in August of prior year, crop rotation is our best resistance management tool. Since the majority of the corn grown in NY is in rotation with alfalfa for our dairy farms, NY trails the rest of the nation in the development of CRW resistance to Bt-RW.

**For our dairy farmers,** that grow corn in rotation with alfalfa, corn is typically grown in a field for 3-5 years. The longer corn is grown continuously in a field, the higher risk the field has for economically damaging CRW root feeding and yield losses. After rotating out of a non-corn crop, first year corn does not need any CRW management (or expensive Bt-RW trait costs). A non-Bt-RW corn variety should be planted with a seed corn maggot/wireworm effective seed treatment. This choice in year 1 saves \$15-\$20 per acre in seed costs. In year 2, the risk of CRW loss increases to 25-30% in NY. To offset this risk, a farmer has several options. Many farmers will assume the risk and plant a non-Bt-RW corn variety without any additional protection such as a soil insecticide. A second option in year 2 is to use either a 50% rate of soil insecticide (if insecticide boxes are available), high rate of neonic seed treatment or an insecticide added to the liquid popup fertilizer. The CRW pressure in year 2 is not high enough to recommend the use of

Bt-RW in most cases and the option of an insecticide is often a less expensive route to reduce production costs. The deployment of different modes of toxicity in year 2 from Bt-RW significantly reduces the selection for Bt-RW resistance by CRW. In continuous corn years 3-5, the risk of economic loss from CRW is high enough to merit the use of Bt-RW corn varieties. A second option in years 3-5 of continuous corn is



the use of a full rate of soil insecticide, if insecticide boxes are available. Adding insecticide to the popup fertilizer during years 3-5 is not recommended due to unreliable efficacy with

the higher CRW populations and increased risk for economic damage.

### **Strategy 2 for our dairy farmers: Incorporating biocontrol nematodes into their rotation and crop production.**

By using the biocontrol nematode technology developed to combat alfalfa snout beetle in NNY, our dairy farmers can reduce their corn seed costs by eliminating the purchase of the Bt-RW traits in their corn varieties. A single inoculation of each field with native persistent NY biocontrol nematodes provides protection from corn rootworm larval feeding by attacking these insects before they damage the corn roots. NY research data indicates a single soil inoculation (\$50-\$60/acre) establishes these NY adapted biocontrol nematodes in the soil profile for many years, where they attack a wide range of pest soil insects across a wide variety of crops. During the corn years, these biocontrol nematodes attack rootworm larvae and during the alfalfa years, attack wireworms, white grubs, clover root curculio feeding on the alfalfa and grass in the field.

If the biocontrol nematodes are inoculated into the field during the alfalfa portion of the crop rotation, the farmer can use corn varieties without Bt-RW for the entire corn rotation. Biocontrol nematodes take until the second growing season after application to become fully established in the soil profile

*(Continued on page 13)*



and when applied to the alfalfa crop, become fully established before corn is planted. If the field is inoculated with biocontrol nematodes during the first year of the corn rotation, the corn variety planted in year 1 can be without the Bt-RW trait because rootworm is never a problem in 1<sup>st</sup> year corn in NY. By the second year, the biocontrol nematodes are fully established and corn varieties can be planted without Bt-RW for the remaining years of the corn portion of the rotation.

However, if the corn field is inoculated with biocontrol nematodes during the 2<sup>nd</sup>-4<sup>th</sup> year when rootworm damage risk is higher, the corn variety planted during the year of inoculation needs to have the Bt-RW trait to provide some additional protection while the biocontrol nematodes become fully established in the field. If the cost of establishing biocontrol nematodes in a field is a one-time cost of \$50-60/acre and the Bt-RW trait adds \$20/acre/year to the seed costs, the breakeven point for the nematode application is year 3 when the Bt-RW trait is not purchased or used. In the years beyond 3-years after application, the seed cost savings will continue to be the cost of the Bt-RW which is an unnecessary expense.

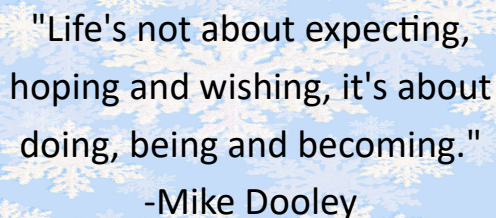
**For our cash grain farmers,** an annual rotation of corn and a non-host crop like soybeans completely eliminates the need for any CRW management tools. During the corn years, non Bt-RW corn varieties can be safely planted without risk of losses from CRW. The elimination of the Bt-RW trait in the corn planted reduces the seed cost \$15-\$20 per acre and the use of a Bt-RW trait is completely unnecessary. However, a seed treatment for seed corn maggot to protect plant emergence is recommended due to our typically wet cold soils. The enhanced adoption of cover crops to protect our soil from erosion and any history of animal manure application significantly increases the risk of plant stand losses from seed corn maggot.

**Long-term continuous corn fields:** The culture of corn continuously in the same field for multiple years using only Bt-RW to control CRW places tremendous selection pressure for the insect to develop resistance to the Bt-RW toxins. This widespread practice across the corn belt has resulted in the documented CRW resistance to all Bt-RW traits and the insect is causing economic losses for farmers adopting these continuous corn practices. Closer to home, Bt-RW failures have been reported in Central NY corn fields, multiple corn

growing areas of Ontario, Canada and to the south in Pennsylvania. With no new technology against CRW available for the next few years, these growers have a real challenge on their hands to minimize losses from this adaptable insect, if these farmers continue with long-term continuous corn production without breaking the CRW cycle with crop rotation. Farmers with fields producing corn continuously for multiple years need to seriously consider working a crop rotation into their farming practices. There are well documented agronomic yield advantages/responses from crop rotation over continuous corn, even without considering the reduction in CRW root feeding damage.

However, if farmers insist on growing continuous corn in field without interruption, there are several issues to consider. The continued use of Bt-RW accelerates CRW resistance and the single field failure becomes the source of highly resistant beetles moving into neighboring fields, causing significant yield losses even in neighboring fields where farmers are utilizing crop rotation to minimize CRW-Bt-RW resistance development and yield losses. The farmer growing continuous corn and producing highly resistant beetles becomes “a neighborhood social problem” for his neighbors. Some farmers add a soil insecticide over the top of the Bt-RW trait, think this is a solution to the resistance issue. While the corn stands better with less damage at the plant base, selection for CRW Bt-RW resistance continues to accelerate within the root system in areas outside of the soil insecticide treated zone.

The addition of biocontrol nematodes to the continuous corn culture is a way of introducing an independent mortality factor to help the Bt-RW trait control rootworm larval populations. However in these high CRW pressure systems, biocontrol nematodes should not be used alone. CRW has developed resistance to every other management strategy used to manage its damage, biocontrol nematodes used alone will also select for CRW resistance. If farmers are interested in incorporating biocontrol nematodes into their continuous corn production, farmers should continue to use varieties with the Bt-RW trait to continue to kill the susceptible CRW larvae or match the use of biocontrol nematodes with a full rate of soil insecticide.



"Life's not about expecting, hoping and wishing, it's about doing, being and becoming."  
-Mike Dooley

# The Dairy Marketplace: Reflections on 2020 & Factors to Watch in 2021

By Nicole Olynk Widmar, December 3, 2020

<https://ag.purdue.edu/commercialag/home/wp-content/uploads/2020/12/PAER-2020-23.pdf>

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Dairy markets, like many agricultural markets, have experienced significant volatility due to the COVID-19 pandemic, in addition to more 'benign' supply and demand factors. Typically, in November we are in the midst of watching holiday baking take off, and along with it, U.S. butter usage and home consumption. More broadly end of year market summaries typically cover factors such as cow numbers, milk production per cow, and seasonal versus atypical consumption and/or buying patterns. However, in 2020 the cascading series of events beginning with the U.S. societal impacts of COVID-19 in March and April of 2020 dominate most food market discussions.

## Fundamental Dairy Industry Metrics

Forecasted total milk production for 2020 has been moving upward, with some expectations of more cows in the fourth quarter combined with higher milk per head. Presently USDA, ERS has 2020 total milk production forecasted at 222.5 billion pounds, which is a 0.2 billion pound increase over their October forecast. Increased milk production itself would place downward pressure on prices, but taken with recent demand signals, there is some room for cautious optimism. U.S. dairy prices are competitive presently on the global market; we're expecting higher exports of cheese, butterfat, and dry skim milk products. While U.S. butter prices have been the focus of attention for multiple years, they have lowered considerably and presently even U.S. butter prices are competitive on the World market.

Per the November 2020 Livestock, Dairy, and Poultry Outlook from USDA, ERS the 2020 all-milk forecast has been raised by \$0.25 to \$18.25 per cwt; embedded in that expectation is the fourth quarter significant increase by \$0.85 to \$19.75 per cwt. The overall 2020 milk price doesn't look bad, but the path to getting here has been anything but stable. Figure 1 displays the U.S. All Milk Price on a monthly basis, with the severity of the impacts of the rapid market adjustments in mid to late March being evident in the rapid falling of prices into April and bottoming out in May, before rebounding rapidly during

the summer months.

## COVID-19 Adjustments: Reflections and Lingering Questions

The sudden transition to 'stay at home' in mid-March 2020 led to significant changes in shopping for food at home versus away from home, which impacted every food sector in the nation and most around the World. For dairy markets, however, there was the confounding issue of movement of children home from schools. Fluid milk in schools is a significant market; one can visually see consumption of fluid milk and a variety of dairy products move in synch with the school year. Fluid milk consumption declines reported currently are attributed at least in part to lowered school attendance during the pandemic.

Basically overnight the demand for milk in schools fell (to near zero) leaving raw milk without a home for processing, and fueling national media stories on milk dumping. While there was public outrage evident and the actual scale of milk dumping was drastically higher than usual, missing from much of the reporting was the relative localization of massive increases in dumping to the Northeast (and then Southeast, in that order).<sup>1</sup> Adding to the sting of dumped milk and (at the time) milk prices dropping rapidly, were the images of empty supermarket dairy displays as shoppers sought but could not find fluid milk. Undoubtedly dairy producers and the dairy industry faced some dark times in March-May 2020, as did many industries and societies grappling with COVID-19.

Certainly, nobody wants to see milk dumped; there is an emotional response to seeing what we recognize as a wholesome, complete, food, often in the context of infants and children, wasted. However, what was largely missing from media coverage was the resilience shown by the milk supply and processing chain in the recovery/adjustments that followed. Considering the scale and speed of the adjustments necessary, the industry response was

*(Continued on page 15)*



impressive. The duration when milk processing was unavailable for raw product was reasonably short-lived as the U.S. dairy industry worked to redirect product for processing, which includes a 'heavy lift' in terms of logistics of a perishable product requiring refrigeration combined with processing capacity and packaging availability. There was a brief period of time during which retail supermarkets struggled to keep fluid milk stocked on shelves as U.S. households moved home and stocked up on staple products. The transition to supplying more fluid milk for home consumption and less to restaurant and food service (including schools) was rapid and the supply chain showed resiliency, although admittedly not without some short-term adjustment pain.

Dairy consumption at home is simply different than in restaurants or food-service establishments for most U.S. consumers. Consumption of butter and cheeses are of particular interest in the food at home versus away from home discussion. Bread baskets with butter, cream and butter based sauces, and inclusion of items like cheeses and sour cream in dishes all tend to be more common in restaurant dishes or other 'splurge' type meals than every day at-home meals. In a special report on eating out expenditures during COVID-19 by USDA, ERS it was reported that, "In April and May 2020, food-away-from-home spending was down 50.8 and 37.2 percent, respectively, when compared to the same months one year ago." Certainly the shift away from restaurant meals has changed how U.S. consumers eat. Butter stocks remain reasonably high presently, placing downward pressure on butter prices. Pizza is one of the biggest uses of mozzarella cheese in the U.S. marketplace, which is an interesting food category during the pandemic as it remained reasonably in-demand as a take-out item, even as households continue to stay at home and many continue to avoid in-person dining, even when it is available. Contrary to trends for a variety of cheese products, American-type cheeses have experienced an increase in demand during the COVID-19 era. Increased demand for American-type cheeses is fueled by at-home

cooking and consumption, largely believed to be in conjunction with preparation of common comfort food items, such as macaroni and cheese.

### Looking Forward to 2021

USDA, ERS has released forecasted milk per cow for 2021 up 20 pounds (to 24,090 per cow) alongside a 10,000 head increase (to bring the national herd to 9.380 million head). While milk production is expected to be up in 2021, the many unknowns facing grain markets lead to questions about feed costs. Expectations of higher feed costs would place downward pressure on milk production growth, although there remains significant uncertainty surrounding costs of production and/or size of 2020 crops available for feed. As of the November 2020 Livestock, Dairy, and Poultry Outlook from USDA, ERS the 2021 all-milk price forecast for 2021 had been raised to \$17.70 per cwt, which was a \$0.10 increase over the forecast a month earlier. All milk forecasts are the product of a variety of factors including Class I, II, III, IV milk prices, forecasted demand for dairy products domestically, dairy product in cold storage/stockpiles, and trade expectations.

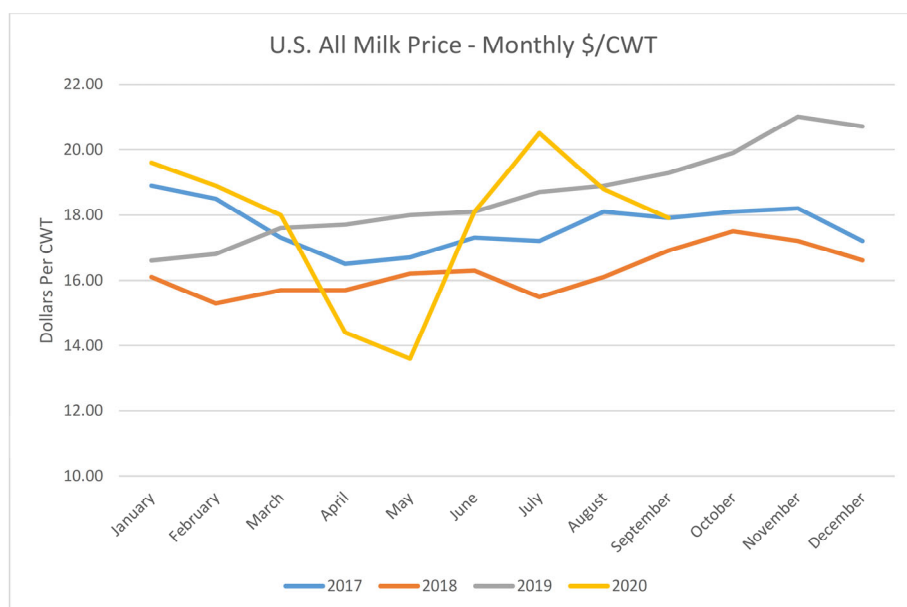


Figure 1. All Milk Price (Monthly; 2017 - 2020).





# Cornell Cooperative Extension

## South Central NY Dairy and Field Crops Program

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## Upcoming Events Calendar

January 5—February 16 Tuesdays at 12:30 pm	<b>Critical Calf Care: Urgent Decision Making for Dairy Calf Health</b> ; FREE virtual event series <i>Recognizing &amp; Diagnosing Disease, Dystocia &amp; Difficult Calvings, Record Keeping &amp; Economics of Disease, Hydration Status &amp; Electrolytes, Scours &amp; Nutrition, "911— My Calf Needs Help!" LIVE Panel Discussion</i> To register or FMI: <a href="https://scnydfc.cce.cornell.edu/event.php?id=1424">https://scnydfc.cce.cornell.edu/event.php?id=1424</a>
January 11 Becker Forum January 12 - 15 Expo <a href="#">DEC Credits Available</a>	<b>2021 Empire State Producers Virtual Expo</b> FMI: <a href="http://nysvga.org/expo/information/">http://nysvga.org/expo/information/</a> or contact Jessica at (585) 993-0775 Expo Schedule: <a href="http://nysvga.org/wp-content/uploads/2021-Detailed-Empire-Expo-Program-12-15.pdf">http://nysvga.org/wp-content/uploads/2021-Detailed-Empire-Expo-Program-12-15.pdf</a>
January 12, February 9, March 9 12:00 pm	<b>2021 NYCO (NY Certified Organic) Virtual Meetings</b> Register in advance for this meeting: <a href="https://cornell.zoom.us/meeting/register/tJcqO2prj0jH9cAv1J-yuoQilpX5i7IEVZQ">https://cornell.zoom.us/meeting/register/tJcqO2prj0jH9cAv1J-yuoQilpX5i7IEVZQ</a> FMI: Fay Benson <a href="mailto:afb3@cornell.edu">afb3@cornell.edu</a>
January 14, 21, 28, February 4 Thursdays from 1:00 - 2:00 pm EDT DEC Credits Available	<b>2021 Virtual Winter Crop Meeting Series</b> ; \$10/session or \$20/all sessions <i>Crop Stress—Tips for Management; Soybean Cyst Nematode Management; Corn Silage Hybrid Trials 2020 Update; Management Factors that Contribute to High Yield in Corn</i> To register or FMI: <a href="https://scnydfc.cce.cornell.edu/event.php?id=1443">https://scnydfc.cce.cornell.edu/event.php?id=1443</a>
January 28 - February 18 Thursdays from 12:00—2:00 pm EDT	<b>2021 Virtual Operations Managers Conference Series</b> ; \$100/per person FMI: <a href="https://cals.cornell.edu/pro-dairy/events-programs/conferences-seminars/operations-managers-conference">https://cals.cornell.edu/pro-dairy/events-programs/conferences-seminars/operations-managers-conference</a> or Heather Darrow, PRO-DAIRY Conference Coordinator, (607) 255-4478 / <a href="mailto:hh96@cornell.edu">hh96@cornell.edu</a> To register: <a href="https://web.cvent.com/event/0b04466f-412e-4455-b0fa-0e2962f9e313/regProcessStep1">https://web.cvent.com/event/0b04466f-412e-4455-b0fa-0e2962f9e313/regProcessStep1</a>
February 9 - March 2 Tuesdays beginning at 12:30 pm EDT DEC Credits Available	<b>2021 Practical Soil Health Meeting A Virtual Series of 4 Meetings</b> ; Cost— \$10 for compaction session <i>Cover Crop Management &amp; Termination; Compaction Damage &amp; Its Modification; Making the Most of Your No-Till Planter Experience Without Breaking the Bank; Soil Health Practices in Dairy Systems—A Farmers Panel</i> To register: <a href="https://scnydfc.cce.cornell.edu/events.php">https://scnydfc.cce.cornell.edu/events.php</a>