Welcome Betsey Howland! Farm Business Management Specialist SCNY Dairy & Field Crops Team

Betsey Howland has joined the SCNY Dairy and Field Crops team as a parttime Farm Business Management Specialist. Currently she is a Dairy Farm Business Specialist with the PRO-DAIRY Program at Cornell University and will continue part-time in that role as well.

Betsey administers the Dairy Profit Monitor, an online, monthly profit and benchmark program measuring net milk income over feed costs. In addition to the Dairy Profit Monitor, she works with 25-30 farms to complete their annual Dairy Farm Business Summary.

She co-facilitates five business focused Dairy Profit Discussion Groups and is involved in the planning of the Academy for Dairy Executives. She also assists with the New York State Junior Dairy Leader Program.

Betsey grew up on a small dairy farm in Tioga County. She received her Bachelor's Degree in Animal Science from Cornell University and was an agricultural loan officer with Farm Credit East before joining the PRO-DAIRY Team in 2011.

Onondaga County Farmers are now covered by The South Central NY Dairy & Field Crops Program

Welcome Onondaga County farmers to our Extension program! We look forward to getting acquainted and finding opportunities to work with you. We would like to take this opportunity to introduce the Team members and the work that we do.

As the dairy industry continues to undergo structural changes; tight margins, loss of infrastructure and milk markets as well as facing a higher bar for environmental expectations and new regulations we strive to bring a network of resources to the farming community and provide tools and strategies needed to effectively manage the changes agriculture faces.

Our strength is educating and advising on technical production issues and management. Apart from our experience we have access to a network of resources of which Cornell researchers provide a base. If you are confused about the maze of potential contacts at Cornell, we can refer you to the person who can best

July 2016

address your needs from alfalfa varieties to zearalenone testing.

Janice Degni is the Team Leader and Agronomist. Janice addresses integrated crop management, forage quality, crop needs, rotation and nutrient management planning, practices to minimize non-point source pollution from cropping and manure practices and crop troubleshooting. Janice has worked for 23 years as a field crop specialist with Cornell Cooperative Extension. She received her B.S. in agronomy and M.P.S. in plant protection from Cornell University.

Betsy Hicks addresses the broad range of Dairy Management production issues. Dairy enterprise issues focused on profitability and *Cont. page 2*

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We are pleased to provide you with this information as part of the Cooperative Extension Dairy and Field Crops Program serving Broome, Cortland, Chemung, 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: <u>http://scnydfc.cce.cornell.edu</u> and like us on Facebook: <u>https://www.facebook.com/</u><u>SCNYDairyandFieldCropsTeam</u>.

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We put knowledge to work in pursuit of economic vitality, ecological sustainability, and social well-being. We bring local experience and research-based solutions together, helping our families and our community thrive in a rapidly changing world.

Building Strong and Vibrant New York Communities

"Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities."

Cont. from cover

sustainability include herd performance, dairy nutrition, feeds and feeding, livestock environments and housing and milk quality. Additionally she addresses the issues with raising youngstock including genetic improvement, calf health and performance and rearing replacements. Betsy has 2 years of experience as an extension dairy educator 5 years of experience as a dairy nutrition consultant and has worked as a milk inspector. She has a B.T. and M.S. degrees in animal science specializing in livestock and dairy nutrition. her time with the Regio PRODAIRY Program. Fay Benson is our Sma well versed in organic transition. He has wor and advocates for estat He provides education We work to be a reliab

Betsey Howland is the Farm Business Management Specialist. She can provide guidance with budgets and financial decisions. She can advise on business arrangements, estate transfer and business succession planning and human resource management. Betsey shares her time with the Regional Team and the NYS PRODAIRY Program.

Fay Benson is our Small Dairy Support Specialist. Fay is well versed in organic production including steps for transition. He has worked with on-farm dairy processing and advocates for establishing a shared processing center. He provides education on grazing management.

We work to be a reliable resource for information, training and troubleshooting for our area dairies and agriservice personnel. Please give us a call if we can be of any assistance. **Our contact information is inside the newsletter cover**. We are looking forward to meeting and working with you. *****



Taylor Currie Summer Intern working on Small Dairy Support

Taylor grew up in Tully, NY on her family's dairy farm where they milk approximately 1,000 cows. She will be starting her Sophomore Year at SUNY Cobleskill this fall studying Agricultural Business. Taylor is actively involved in the Dairy Cattle Club and the Ag Business Club. She is on the 2016-2017 Dairy Cattle Judging Team and is proudly serving as the 2016-2017 Cortland County Dairy Princess. After she finishes SUNY Cobleskill, Taylor plans to continue her education through the Ag Education Program at Cornell University and Ithaca College.

While at CCE Cortland, Taylor will be working with Fay Benson, Small Dairy Extension Educator, on various projects this summer.

FORAGE MANAGEMENT - PERENNIAL FORAGE CUTTING HEIGHT

Joe Lawrence, Cornell PRO-DAIRY

In a recent farm visit, the farmer had just purchased a nice new discbine. On the day I was there, he and the equipment dealer were replacing the shoes on the cutter bar with thicker ones. This farm has predominately grass forages and the farmer recognized that this new machine was cutting much shorter than his former haybine, and he knew this was not good for the grass.

This topic has been written about several times over the last decade, but warrants a refresher. Recommended cutting height is not a "one size fits all" scenario. Consider the crop species, field conditions, ash content of the harvested forage, time of year and age of the stand. As this scenario demonstrates, new machines may not be set up appropriately for your forage stands.

The prevalence of discbines over the last few decades allows a closer cut to the ground (if you choose) without as much risk of costly damage that often occurred with traditional sicklebar mowers. This makes it very tempting to lower the cutting height a few inches to get extra yield. Research from Miner Institute indicates that up to $\frac{1}{2}$ ton DM/season (three cuttings) can be gained by lower cutting height from 4 inches down to 2 inches, without a sacrifice of quality.

So if increased yield is the benefit, what are the issues? From a mowing standpoint, there is a risk of scalping an uneven field and increasing the ash content (amount of dirt and debris) in the forage. Tom Kilcer, Advanced Ag Systems refers to this as "minimum-till haylage."

Nutritionists indicate that the presence of ash in forages is becoming a chronic problem on many dairies. It has been reported that a 2 percent increase in ash (from 9 to 11 percent) can reduce milk by 1.9lbs/cow/day (Sniffen, Fencrest,LLC.). That is certainly significant.

In addition to the connection between cutting height and ash content, improperly set up rakes can add to this issues as well. While rakes need to be able to pick up all the hay, they are often set closer to the ground than needed.

Alfalfa

- Manage cutting height based on field conditions, time of year and considerations for ash content in forage
- Consider higher cutting height in fall to help capture and retain snow cover

Grass

- A minimum of 3-4 inches stubble is critical
- Grass stands are even more sensitive in the seeding year
- The loss in grass stand productivity from cutting too low far outweighs any yield boost you might get from harvesting a few extra inches in that one cutting

Mixed Stands

• In mixed stands cutting height could actually be used as a management tool for stand composition by choosing a cutting height that either favors grass or alfalfa

Crop species is a critical factor in determining an appropriate cutting height. Because alfalfa generates new shoots from the crown of the plant after each cutting, it can generally tolerate a very low cutting height. Conversely, a low cutting height on grass can be very detrimental. Grasses have to re-grow from the stubble left in the field. Therefore, if grasses are cut too short, the plant is robbed of the energy reserves it needs to re-grow.

In research conducted at Miner Institute, the effect of cutting height on orchardgrass and reeds canarygrass was measured in a greenhouse experiment. This work showed that first year reeds canarygrass was completely killed at a 2 inch cutting height. The orchardgrass did regrow, but at a much slower rate. The 2-inch orchardgrass required 38 days to reach a height of 16 inches. In contrast, at the 4 inch cutting height, both grasses responded quickly after cutting and measured 16 inches of regrowth in just 21 days.

Cropping Notes Janice Degni, Area Field Crops Specialist

Unreliable rain, received in scattered showers seems to be flowering during a period of 90⁰ temperatures, which can the trend of the summer. It's so dry that newspaper reporters are calling to ask about the drought and its impact on field crops while tv weather reporters welcome the rain even if it interferes with "weekend" plans.

Recorded rain for July 7-10 ranges from a 1/10" to greater than 1". Some areas were left high and dry and the crops are terribly stressed. The fields that did receive rain transformed overnight while the areas that missed the



showers are getting dire. The lack of rain coupled with 90[°] temperatures are stressing the crops to the limit.

To date the crop season has been full of mixed blessings. Planting season

went fairly smoothly with cold air and soil temperatures being the main difficulty. I kept waiting for the 'last' snow on Mother's Day, but it came even later on a Sunday evening in mid-May. This year color was off in all the early planted corn because it was cold. Now mid-season it has the best, deep green color that I have seen in years. It's an especially stark contrast to last year's anemic corn.

It seemed like one of the smoothest first cutting harvests in a long time. Many took advantage of a well-timed first cutting. The weather cooperated when the crop was ready for harvest. It was interesting to take the weekly measurements of alfalfa while closely watching the weekly growth. Because it was dry we measure about 2 sometimes 3 inches of growth on average each week. Last year we had a week where the alfalfa jumped 6" in 1 week. What a difference a growing season makes.

Most of the first cutting dry hay was completed by the end of June as opposed to August in 2015. We had several stretches of days with high temperatures and low humidity almost making hay baling a joy without the battle to get hay dry.

Small grains look terrific this year. Wheat and barley during flowering were not subjected to nonstop showers. Quality should be good with low DON rates. Oats look good across the countryside but straw yields look poor since they are very short. Unfortunately oats were

have a negative effect on test weight due to *blasted* flowers.

"The maximum, average daily temperature at which oats will grow is 86°F (30°C). Kernels formed at higher temperatures are light in weight. Early planting permits the oat plant to take full advantage of the cool, moist, spring weather-thus reaching an advanced stage of growth before damage by drought and heat can occur. Early planting also helps the plant escape severe attacks by diseases and insects. Late seeding and tillering tend to increase the amount of blast." (University of Illinois Extension. RPD No. 117)

Pests

In general we see the usual smattering of damage from low intensity pests like cutworm and stemborer in corn. Bird and wildlife damage seems to be the bigger problem this year; crows or blackbirds, turkeys, geese, woodchucks and deer can do significant thinning in a short time. Weeds have been slower to grow because of dry conditions but wherever they did get a toehold the stress on the crop is significant.

Alfalfa Weevil

We rarely even worry about alfalfa weevil damage because we typically control the development of the larvae with early first cutting but this year weevil feeding showed more in second cutting than first. The development of the weevil larvae was delayed because of the cool spring temperatures.





Potato Leafhopper Damage (PLH)

PLH appears to be spotty. Since the crop's growth has been delayed from lack of rain its worth keeping an eye out for them. New seedings will be especially vulnerable to feeding damage. The threshold for PLH drops in half when the crop is stressed. When sampling with a sweep net you take a minimum of 10 sweeps at 3 different sites.

Average stem height	Leafhopper/sweep	
Less than 3 inches (new seedings)*	.2	
3-7" *	.5	
8-10"	1.0	
11-14"	2.0	
15" or above	If leafhoppers exceed 2.0 per sweep and if regrowth is within 1 week of harvest, no action needed. If not, use a short-residue insecticide	
*The two lowest treatment levels are specifically for use in new seedings, which warrant protection at lower leafhopper densities.		

Soybean Pests

Soybeans have started to flower. I haven't seen much defoliation feeding by insects like Japanese beetles and there is no sign of aphids yet but it definitely warrants checking because soybean aphids can arrive any time now and we never know if it's going to be a year with a heavy infestation. Corn emergence issues and strange colors in corn have probably been the bigger problem in corn this year. Corn planted in fields after 1st cutting really struggled because moisture was already depleted, no-till maybe even more than conventional because it was difficult to get the seed planted deep enough.

No-Till vs Tillage

A farmer recently told me, "no-till doesn't win the beauty contest". This rings true in part because development of no-till corn will be slower because it has to contend with colder soils. The no-till fields I've looked at this year are all over the board. Some are equal to tilled corn and in others the emerged population or the crop is struggling for lack of moisture. It is clear that timing is everything with no-till. You don't get a nice, even stand if you plant when it's too wet or too dry. I've looked at strip till, zone-till, turbo till and straight no-till and don't see a technique that stands out as the best.

No-till protects the soil from erosion and after several years of continuous no-till the soils can reach an equilibrium that allows increased water infiltration and in turn water holding capacity to support plant growth. No-till also saves time, money and fuel. One of the hurdles of the system, from my perspective, is the lack of consistency. The right planter and associated equipment properly adjusted is critical. In the end yields must be comparable, then we can live with a less than beautiful crop early in the season.



Nutritional Deficiencies

Occasionally we see nutritional deficiencies in the field. Sometimes they are short term, for example purple corn during an early season cold spell. Basically the crop can't metabolize enough nutrient, sugars build up in the plant and cause an excess of anthocyanin resulting in the purple coloring. If you have kept up on soil fertility with fertilizers and manure this is just a passing phase although sometimes it can be quite striking.





We can see deficiencies on ground that is low in fertility or low in pH or both. Sometimes we can be surprised on ground that we've been working and we rotate to a different crop. Beyond the big three, nitrogen, phosphorus and potassium. I see interveinal chlorosis fairly frequently, which can be an indicator of lack of sulfur. It also shows sometimes when the plant is growing rapidly and uptake of nutrients doesn't keep up. Drought conditions can be



problematic. "Sulfur serves

many functions in plants. It is used in the formation of amino acids, proteins, and oils. It is necessary for chlorophyll formation, promotes

nodulation in legumes, helps develop and activate certain enzymes and vitamins, and is a structural component of two of the 21 amino acids that form protein." (Sulfur - The 4th Major Nutrient | Nutrient Stewardship).

When topdressing havcrop some farmer's use a blend of urea and ammonium sulfate to get sulfur to the crop.

Organic farmers can use gypsum, a rock powder 1/2 calcium and ¹/₂ sulfur. Dairy manure has about 2 pounds of sulfur per ton so regular applications will help maintain the soil supply. Sulfur carries a negative charges so once it is mineralized from organic matter it can be lost through leaching. If you see the striping symptoms on your corn, consider adding a micro pack to your corn starter.

Impact of Drought on Yield

Early season crops can withstand a fair amount of stress with minor impact to yield. Stress at the time of pollination and grain fill can dramatically impact yield. Now in midseason we are in the middle ground. Some of the drought stress will be reversible some less so. R.S. Nielsen, Agronomy Department, Purdue University explains, "Ear size determination begins by the time a corn plant has reached knee-high and finished 10-14 days prior to silk emergence.

Like so many other processes in the corn plant, kernel row number determination on an ear proceeds in an acropetal fashion (from base to tip). Kernel row number determination of the uppermost ear begins shortly after the ear shoot is initiated (V5 to V6) and is thought to be complete as early as V8.

Row number is determined strongly by plant genetics and less so by environment. This means that row number for any given hybrid will be quite similar from year to year, regardless of growing conditions. Some exceptions to this include the effects of injury from the post-emergence application of certain sulfonylurea herbicides or nearly complete defoliation by hail damage prior to growth stage V8.

The potential number of kernels per row is complete by at least V15 and maybe as early as V12 (Strachan, 2004). Kernel number (ear length) is strongly affected by environmental stresses. This means that potential ear length will vary dramatically from year to year as growing conditions vary. Severe stress can greatly reduce potential kernel number per row.

Severe stress from about V5 to V12 that severely limits photosynthesis can directly interfere with ear size determination and result in fewer kernel rows (less likely) or fewer kernels per row (more likely). While such early stress can be important, recognize that severe stress that occurs shortly before to shortly after pollination has a far greater potential to reduce yield per day of stress." (Source: Ear Size Determination in Corn) ●



Dairy Acceleration Program

Plan for profitable and environmentally responsible growth

The Dairy Acceleration Program is an initiative of Governor Cuomo in partnership with the NYS Department of Agriculture and Markets and the NYS Department of Environmental Conservation designed to enhance profitability of New York dairy farms while maintaining a commitment to environmentally responsible dairy farming.

Funds may be used for preparing the farm records for business planning through benchmarking the current financial status of the dairy, the creation of strategic business plans focused on increasing the viability of the dairy, design of new or remodeled facilities, development or update of Comprehensive Nutrient Management Plans (CNMP) and the design of eligible best management practices (BMPs) identified in the farm CNMP. Farms must have lactating dairy cattle and be shipping milk. Heifer boarding operations may apply for CNMP and design of BMP funds.

Project Eligibility

Planning for long term viability

- 1. Preparation of financial records for business planning through benchmarking.
- 2. Business planning with financial analysis.
- 3. Farmstead development planning.
- 4. Design of new or remodeled facilities associated with growth of dairy.
- 5. Plans for capital improvements for increasing milk per cow.
 - Environmental Planning
- CNMP (Certified Nutrient Management Plan) updates by an AEM Certified Planner for farms with less than 300 mature cows or dairy heifer operations..
- 2. New CNMP's by an AEM Certified Planner for farms with less than 300 mature cows.
- Design by an engineer of best management practices (BMPs) identified in the farm CNMP

Program Funding

- The Dairy Acceleration Program funds 80% of the cost of the plans (up to established limits) with 20% of the cost of the plans paid by the participating farmer directly to the provider of the service, including any in excess of awarded funds. Awarded funds are disbursed through Cornell University upon receipt of invoice and completed project delivery form. The program ends when funds are depleted or no longer available. Projects are expected to move forward in a consistent manner or farms risk forfeiting the award.
- Business & Environmental Planning Projects**
 - Up to \$5,000 for business planning or a combination of business planning, facility planning and/or farmstead development planning.
 - 2. Up to \$2,500 for previously awarded farms to continue working with their farm business consultant in a subsequent

FACT SHEET LANDOWNER CONSIDERATIONS FOR SOLAR LAND LEASES



New York's solar market is growing fast–575% in the last four years alone–so demand for sites to install large-scale solar electric systems is high. Across New York State, solar developers are contacting farmers and landowners to secure long-term land leases for siting solar arrays. The amount of land desirable for a lease generally ranges from 10 to 30 acres, depending upon the size of the solar array.

Before considering such a lease or contract, you should know installing solar panels on farmland may trigger a "conversion penalty" and may increase the taxable value of the overall property. To fully understand the impact of these factors, landowners are urged to consult with an attorney and their municipal assessor before signing any documents.

What is shared solar?

NY-Sun, Governor Andrew M. Cuomo's initiative to add more than 3GW of installed solar capacity in New York State by 2023, encourages and supports the installation of solar arrays to generate clean and renewable energy statewide. Tens

of thousands of New Yorkers have already put solar panels on their homes. Many buildings, however, are not suited for solar panels due to shading, roof condition, or other factors. New Yorkers now have the opportunity to subscribe to larger "shared solar" systems. Shared Solar provides opportunities for renters, homeowners, businesses, and municipalities to subscribe to a portion of shared solar energy projects. The siting of these systems is creating an even greater interest in the leasing of farmland.

Is solar right for your land?

The size of a solar installation is measured by its capacity to produce energy. A 1-megawatt (MW) installation will generate approximately 1,174,000 kilowatt hours (kWh is how electricity usage is measured on your utility bill) each year. A 1-MW system will generally require about six acres of land for 3,000 to 4,000 individual solar panels, and will cost \$2 million to \$3 million to build. Systems built on open land will connect directly to the electric grid and will have their own utility meter. Solar panels are typically warrantied for 25 years, but a system can last longer than that if panels are replaced over time.

What are the per acre lease rates?

Rates can vary. If you are approached by a developer or have interest in leasing your land, research the going rate for land leases in your area. Contact multiple solar developers to gauge interest in your land. Certain site characteristics are especially attractive for solar development, such as cleared land that is south-facing with road access and in close proximity to the substation. Do research online about solar lease rates in other areas and consider working with a real estate professional.

Prior to signing a lease with a solar developer, landowners should examine possible tax consequences and issues associated with the construction of roads, fencing, and electrical poles. Landowners should consider asking an attorney to carefully examine the land lease terms.

Do you receive an agricultural assessment on your property?

Under the Agriculture and Markets Law, if a landowner receives an agricultural assessment and converts the land to a nonagricultural use, the landowner may be subject to a monetary payment for converting the land. A conversion of land is "an outward or affirmative act changing the use of agriculturallands" (AML §301(8)).

Municipal assessors are responsible for tracking conversions when they occur. Landowners are also required to notify the assessor within 90 days whenever a parcel receiving an agricultural assessment is converted to a nonagricultural use. A fine of up to \$500 can be levied against a landowner who fails to report the conversion.

Who is responsible for paying a conversion penalty?

The landowner on record is responsible for paying the conversion penalty. Your assessor can work with you to determine what the conversion penalty may cost. Make sure you know where the solar array will be placed on your property so that a comparative analysis of benefited acres versus total converted acres, by mineral, organic, and farm woodland soil groups can be determined.

Are solar panels considered real property and taxable?

Yes. A solar energy system is "real property" once it has been permanently affixed to land or a structure [Real Property Tax Law (RPTL) § 102(12)(b); 8 Op. Counsel SBEA No. 3]. The definition of "real property" also includes a "power generating apparatus" [RPTL §102(12)(f)]. As such, it is taxable unless it qualifies for an exemption (RPTL § 300).

Will the siting and construction of a solar array on my property affect other taxes?

Possibly. The assessor must determine the contributory value of the solar array to the value of your property. If the value of the converted acreage devoted to the solar array increases, it may affect your taxes. An increase in taxable value may affect your county, town, village, and school taxes as well as other taxes that may be levied, such as highway, fire, ambulance, library, lighting district, drainage district, and other taxes and levies. It may also affect special district taxes for municipal water and sewer districts if the land is no longer predominantly used for agricultural purposes.

Isn't there an exemption from the payment of school, county, town, and village taxes for solar arrays?

Possibly. There is an exemption statute in State Law that applies specifically to solar energy systems: Section 487 of the RPTL. Section 487, which also covers wind power systems and farm waste energy systems, provides a 15-year exemption from real property taxation for the increase in value resulting from the installation of a qualifying system. However, the statute allows municipalities and school districts to opt-out of this exemption. To find out if your county, town, village, and/or school district has opted out, talk to your local tax assessor.

Further information may be found on the following web sites:

<u>tax.ny.gov/research/property/legal/localop/487opt.htm</u> to read Frequently Asked Questions concerning the solar energy system exemption and statute.

New York State Taxation and Finance web page: <u>tax.ny.gov/</u> pdf/publications/orpts/legal/raq2.pdf? ga=1.190

577835.1031257166.1423842465 (Note: to obtain updated information talk to your assessor.)

If my lease exceeds the 15-year exemption, what happens to my tax bill?

Leases beyond 15 years will likely have an effect on your tax liabilities going forward. Absent the exemption, the local government may seek to value the solar array at full value.

This assessment would again depend upon the contributory value of the solar array on your property at year 16. This question should be discussed with your local tax assessor.

What are other potential impacts that I should be aware of?

Solar arrays must be connected to the electrical grid, which may require the installation of power poles. Landowners should make sure that pole placement and the height of the wire will not interfere with their ability to farm the land. The same can be said concerning the siting of access roads. Make sure the access road is constructed so that it does not shed water onto your fields and that the finished grade does not interfere with normal drainage patterns. Also, ask about the material used to finish the surface of the access road. Will the size of the stone interfere with the operation of your equipment if some of it ends up in your field? See if the access road can be used by you and your farm equipment to access your property. Design the road so that it also serves both your needs and that of the solar company. Be sure to discuss these aspects of the construction of the solar project with the developer before you sign the lease.

Who is responsible for dismantling the solar array once the lease expires or is not renewed?

In the contract, make sure that there are provisions that determine who is responsible for dismantling the facility if the company is no longer in business or if the solar array ages out and is no longer viable, ensuring the property is returned to its pre-leased condition.

What if I do not like the area of my property that the solar company has selected for their lease?

If you are interested in the possibility of a lease to a solar company, talk to them about the siting of the solar arrays on your property. Does it have to be placed on your best farmland (such as on Soil Groups 1-4)? Can the solar arrays be placed on land that is not suited for agricultural production, such as support land, sloping pasture, or underutilized areas of the farm? Can the land beneath the solar arrays be planted with crops or grazed by nonclimbing animals? There are a number of possibilities that should be explored. Think about how the siting of a solar array on your property can benefit your farm operation and ask questions.

Does the town where I live have local laws that regulate the siting of solar facilities?

Possibly. Some municipalities have provisions in their zoning code to address the siting of solar arrays within the community. Other municipalities have placed a temporary freeze on the siting and installation of such facilities until they have decided on the best method to review and/or regulate the use within the town or village. Some municipalities are also in the process of drafting amendments to their zoning code to address this issue. Resources for local governments can be found at the NY-Sun PV Trainers Network website: <u>training.ny-sun.ny.gov</u>.

What can I do and how can I influence the local process?

Become or stay involved. If you do not participate in the local process, your point of view cannot be heard. Also, speak with your assessor to determine what impact the siting of a solar array may have on your farm or property and the bottom line (taxes versus lease payments). •

Hay and The 2016 New York State Fair Julie Hansen, Jerry Cherney, Janet Fallon, Sally Flis and Nancy Weber

Following a wet summer in 2015, 25 bales were entered in the 2015 State Fair Hay Contest. Hay was entered from farms in Alton, Cazenovia, Central Square, Fulton, LaFayette, Richfield Springs, and Tully. Entries were in one of nine Conventional Hay Classes or one of seven Organic Hay Classes. The same classes are available for entry at the 2016 NY State Fair.

Reserve Champion Hay in the organic classes. Thanks to all who entered hay bales in this contest and congratulations to the winners. We would like to thank the Dairy One Forage Lab for analyzing the hay samples and John Sinkovitz for assisting the judges and organizing the hay.

Hay Class	First Cut	Later Cuts
Alfalfa	Class 1	Class 3
Alfalfa Acid Treated	Class 2	Class 4
Alfalfa Grass Mix	Class 5	Class 6
Grass	Class 7	Class 8
Other	Class 9	
Organic Alfalfa	Class 101	Class 103
Organic Alfalfa Grass Mix	Class 105	Class 106
Organic Grass	Class 107	Class 108
Organic Other	Class 109	

Hay is judged based on the physical characteristics (50 points: molding/odor, foreign material, maturity, leaf retention, color) and on forage lab analysis by the Dairy One Forage Lab, (50 points: dry matter, crude protein, fiber, fiber digestibility). Physical score averaged 40 points and the Chemical score averaged 39 (Figure 1). The grand and reserve champion bales for conventional and organic had a physical score average of 46 and a chemical score average of 41 (Figure 1).

In the conventional classes the Champion Hay was from John B. Adams of Alton, NY and the Reserve Champion Hay was from Dan Twentyman of Tully, NY. Dan Twentyman also exhibited the Champion and contest. Hope

Do you want to see how your hay stacks up? Entering the hay contest as a farmer, is a chance to show off all of your hard work to manage and put up high quality forages. Likewise, if you're employed in agri-service and know of a farmer who puts up excellent forage year after year, encourage them to enter the Hay contest. *ENTRY DEADLINE:* 4:30 p.m. on July 29, 2016. The *Exhibitor Fee is* \$10.00 and includes an analysis from the Dairy One Forage Lab. For entry forms and information visit: <u>http://nysfair.ny.gov/competitions/ how-to-enter/</u>

Corn silage and haylage can also be entered in the contest. Hope to see your feed at the NY State Fair! •

Here are a few things to keep in mind:

- 1. The hay crop must have been planted prior to 2016.
- An entry shall consist of <u>one whole small bale of hay tied or a minimum of 25# maximum of 50# from a</u> <u>large bale in a plastic lined box</u>. Hay will become property of the F air and <u>will not</u> be returned at completion of the Fair.
- 3. Hay entries with moisture content above 25% will be disqualified.
- 4. In judging the hay entries, a scorecard will be used to evaluate <u>physical features</u> which include: lack of mold/odor, freedom of foreign material, maturity, leaf retention, and color. Another 50 points will be based on forage quality analyses which will be determined by DairyOne Forage Lab. The forage quality analyses will include dry matter (DM), neutral detergent fiber (NDF), crude protein (CP) and digestible neutral detergent fiber (NDFd).



cuttings, 4=alfalfa later cuttings acid treated, 5=first cut alfalfa grass mixture, 6=later cut alfalfa grass mixture, 7=first cut grass, 8=later cut grass, 9=other, 107=Organic first cut grass, 108=Organic late cut grass, 109 = Organic Other.

2016 Corn Silage Hybrid Performance Trials in New York State

We are glad to announce that the College of Agriculture and Life Sciences at Cornell University will be re-instituting the New York Corn Silage Hybrid Trials in 2016. Joe Lawrence, Forage Specialist with Pro-Dairy will head this effort in collaboration with Professors Tom Overton (Dairy Science) and Margaret Smith (Plant Breeding).

These trials will compare and evaluate performance of silage hybrids under NY climatic conditions and on NY soils. We believe this information will be helpful for farmers when selecting their hybrid(s) for the next growing season.

Silage hybrids to be evaluated include varieties from 90 to 105 day relative maturity at two sites and planted in 5-day maturity groups (90-95, 95-100, 101 -105-day). The site locations are the Aurora

Research Farm in Cayuga Co. and the John Greenwood Farm in St. Lawrence County. Silage Quality analyses will be reported. CNCPS 6.5 predictions will be used to evaluate differences in intake potential and subsequent energy and protein allowable milk yield based upon the nutrient and digestibility characteristics of each hybrid.

Companies and number of entered hybrids this year include: Hubner (6), Dairyland (2), Doebler's (2), Dyna-Gro (2), Channel/Monsanto (4), Seedway (4), Masters Choice (6), and Mycogen (2).

Preliminary results will be sent out by early November to participating companies, NEDPA members, Cornell's field crop extension educators, and other professionals. The final report will be sent out and posted on the web in late November. **G**

Spot Check on Your Replacement Program Betsy Hicks, Area Dairy Specialist

The goal of any successful replacement program is to raise the highest quality animal that will have little trouble entering the lactating herd and be profitable within the lactating herd, and to raise that animal usually in the shortest amount of time possible. The last part of that sentence, however, can get to be an issue on some herds, with dairymen holding on to older non-pregnant heifers with the hopes that one more breeding with achieve that pregnancy. On average, the costs to raise a heifer are over \$2000 per animal, and much of the cost has to do with age at first calving.



If you think these numbers are too high, consider that even these numbers are approaching 4 years old, as Jason Karszes with Pro-Dairy studies these numbers every 5 years. When the study was put out, even the 80th percentile identify issues sooner. of herds raised heifers at a price of \$1876 per animal completing the system. Without a doubt, most every farm out there can find something within their program to improve in order to achieve their replacement goals more effectively. Because of this, focus on the life stages of replacement heifers sheds light on where your program could benefit from a little tweaking.

Day One

At birth, review the calving area – is it clean and dry with ample bedding? Calving into a dirty pen gives bacteria a head start to take over that calf's immune system. Dipping navels as soon as possible is so important to protect the calf from that mode of infection. Are additional treatments/boluses/injections required?

Remember – she is born with no immunity! The only immunity she gets is from colostrum. Is she getting 4 quarts within 4 hours of birth, and another 2 quarts 8-12 hours later? A 2005 study showed that supplying calves with 4 quarts versus 2 quarts yielded not only greater average daily gains as calves, but greater survival and milk yield through 2nd lactation.

Was she a product of a difficult calving? Calves that are born from a dam that experienced dystocia are under stress just the same as the mother is. A study in 2007 showed that calves from dystocia have greater odds of experiencing

respiratory disease, digestive disease and mortality than calves from normal births. Devising a system to track calves from difficult births may be a smart move to help

Pre-Weaned Calves

In terms of lifetime productivity, early life growth trumps starter intake every time. The thought used to be that increasing starter intake will develop her rumen earlier, making it easier to transition her off of her expensive liquid diet, thus decreasing costs. Research now shows that calves allowed to drink milk in ample quantities will outperform calves that have been limited on milk and forced to make up intake on starter. In fact, limiting calves on nutrients during the milk phase will increase morbidity and mortality as well as decrease feed efficiency and future milk production. Remember, scours are different from manure from a mostly all liquid diet!

What about feeding hay to calves? Again, we never want to limit the amount of nutrients that she consumes. Offering ample milk is always the first step, and offering ample starter will always be second. Hay can be offered and in some studies, has been shown to positively affect how the animal consumes dry matter from hay sources after weaning. This hay must be high quality, palatable, and free of mold, etc.

Transitioning off a Liquid Diet

They key to remember when we're weaning calves is "one change at a time". When we wean, we're not going to move her. When we move her, we're not going to

vaccinate her. When we introduce her to a group pen, we're not going to change her diet.

If you find that growth rates stall during a transition – minor tweaks to your procedures may be needed to get her back on track. If you find that incidence of respiratory disease is occurring upon weaning, you need to take a look because there are definite opportunities to improve. In terms of nutrient partitioning, if she's lacking groceries, the first thing she won't do is grow. The second thing to suffer is her immune system. If she's sick, she's not growing and you need to take a look as to why.

Social Interactions & Learning How to be a Heifer

Putting calves in small groups first will always benefit her, and attention to the size of the animals in subsequent groups should also be important.

In terms of her social maturity, introducing her to too many new things at a time can also throw her off. Calves under 6 months of age may not figure out freestalls readily. It may be better to grow a group of calves on bedded packs until after that 6 month age.

Nutritionally, introducing calves to fermented feeds too early should also be monitored. Some experts believe that introducing calves to corn silage and haylage before 6 months old is too soon. Others have success feeding the

high cow TMR after they move out of the first group pen after weaning, with the addition of topdress starter. Either way, we need to make sure she is introduced to fermented feeds in such a way that her intakes won't be limited and she has no decrease in growth rate.



Breeding

Heifers should reach puberty at 45% of mature weight. Mature weight is different for every herd, and is measured by an average cow in the lactating herd in her 3^{rd} or 4^{th} lactation at 80-200 days in milk. Heifers should be bred at 55-60% of mature weight.

Weights for breeding size should be back calculated from

the mature weights in the herd, taking into account the desired age at first calving. For example, if the mature weight of cows in the herd are 1400 pounds and the desired age at first calving is 22 months, heifers should be bred at 13 months and need to weigh between 770 and 840 pounds. Growth rates to achieve these weights need to be supported by sound nutrition – heifers will need to gain \sim 1.9 lb/day in order to reach these goals pre-breeding.

Calving

Post-calving, first calf heifers should weigh 82-85% of mature weights. In order to achieve these numbers, growth rates from breeding on need to be \sim 1.3 lb/day.

In terms of socialization, if we're going to mix her with mature cows before calving, we need to make sure that there is plenty of space for that dry cow group. Undercrowding is key for the transition pen – often keeping to 85% of stalls or headlocks is a goal to keep under, with at least 120 square feet per animal in the pen.

What about waterers? Most pre-fresh pens have less than 2" of space per cow, the benchmark for dry cows. Even if there is 2" per cow, is there more than one waterer in the group? A boss cow may guard that and keep others away.

How about cooling? A recent study showed that during times of heat stress, the prefresh group is the first to gain by adding fans and other cooling strategies, but are often near the end of the list when we invest money in fans. Calves from pre-fresh cows that are cooled perform better as cows when compared to calves that come from pre-fresh cows that had no relief to heat stress.

Dr. VanAmburgh's Snapshot Evaluation of the Potential Quality of the Replacement

- 1st calf heifers "treated" as a calf/heifer <30%
- DOA's in first calf heifers
 1st calf average peak >80% of mature
 1st calf lactation total yield >80% of mature
 1st calf culls <60 days in milk <5%
 1st calf Mature Equivalents >Matures
 1st calf "treated" in lactation <15%
- Retention to 2nd lactation >85%

2016 Twilight Dairy Meetings

Registration Information

- Call Jen Atkinson at 607.391.2662 or email at jma358@cornell.edu.
- For questions, contact Betsy Hicks at 607.391.2673 or bjh246@cornell.edu
- Light refreshments will be served both days.
- Please RSVP to save your spot!

Stronghaven Farm, LLC

Date: Tuesday, July 19, 2016

Time: 6:30 - 8:00pm

Place: 2601 State Route 17C , Barton, NY 13734

Cost: \$10/Farm

Tour and discussion of new calf facility

Glezen Farms, LLC

Date: Tuesday, August 2, 2016

Time: 7:00 - 8:30pm

Place: 1024 Caldwell Hill Rd., Lisle, NY 13797

Cost: \$10/Farm

Tour of new free stall and discussion on cow

comfort

Pasture Walk & Farm Visit At PASTURELAND ORGANIC DAIRY 8062 2nd West Road, Manlius, NY



Tuesday, August 16, 2016 - 11:30am-2:30pm

Pete and his son Jeremy will lead us on a tour of the pastures and farmstead. They have practiced intensive grazing since 1987. This year they topdressed pastures and hayfields with gypsum and chicken manure and see a huge benefit.

In 2005, Pete began his transition to organic and began shipping organic milk in May of 2007. The farm is nearly grain self-sufficient. They currently milk 300, grown internally from 60 head in 1987. With the help of Dairy One testing and records, the farm maintains a low somatic cell count and received the Silver Cow Award for keeping SCC under 150,000 for a year. Pete was an early adopter of solar panels to supply the farm and home's electrical needs. The low maintenance panels run along a barn roof. There will be lots of things to see and hear about on this farm from the cropping program and pasture management, calf care and new barn, breed selection, record keeping to aide decision making and home built facilities with a flat barn parlor that has a throughput of 100 cows/hr.

y NY farm viability

Please rsvp for planning lunch to Jen at 391-2662 or jma358@cornell.edu Please call Janice (391-2672) with any questions.



How Cover Crops & No-Till Support Soil Health

Date: Tuesday, August 23, 2016 Time: 11:00am - 1:30pm Place: Sweyolakan Farm 380 Bostwick Road Ithaca, NY



Aiming to conserve his soil, Jamie Baker has been adding *cover crops* and *no-till* into his cropping system. He will share his trials and successes over the last 3 years. Getting the right equipment, properly adjusted has been an important step to his success.

We will explore: Soil Function - Soil Biology - Soil Health

We will share results and interpretations from the Cornell Soil Health Test.

Featuring FIELD DEMONSTRATIONS with the Tools from the NYS SOIL HEALTH TRAILER.

We will: Measure *soil compaction* with a penetrometer, Measure *aggregate stability* with the rainfall simulator & Measure *available food* for microbes with the *Active Carbon* test

The Cornell Soil Health Test—What does it measure and what actions can we take to relieve constraints? **Aaron Ristow, Cornell Soil Health Lab will lead a discussion to highlight** management strategies for improving soil health based on measured constraints.

Please rsvp for planning lunch to Jen at 391-2662 or jma358@cornell.edu

Please call Janice (391-2672) with any questions.

Cont. from page 7		year to refine and/or implement their business plan.	existing manure storage. 8. Up to \$1,000 for a soils investigation and/	
	3.	Up to \$1,000 to prepare farm financial	or topographic survey associated with the	
		records and benchmark farm financial	design of an eligible BMP.	
		status.		
	4.	Up to \$6,000 for a new CNMP (or existing	*Start up dairies eligible for funding under other programs such as FSA are not eligible for DAP Dairy	
	C fi 5. U	CNMP more than three years old) plus the	heifer boarding operations may apply for CNMP and	
		first year of service.	design of BMP funds.	
		Up to \$4,500 for a CNMP update plus the	** Provided through the Environmental Protection Fund.	
		first year of service.	*** Construction costs for a BMP are not eligible for	
	6.	Up to \$5,000 for the design of a single	funding and farms receiving funding via AgNPS or	
		BMP recommended in the farm CNMP or	EQIP for the design of an eligible BMP are not elig for DAP design funds.	
		up to \$10,000 for the design of a		
		combination of BMP's.	The program is coordinated through Council University DDO	
	7.	Up to \$2,500 for the certification of an	DAIRY and in collaboration with Cornell University PRO- Extension	



Cornell University Cooperative Extension South Central New York Dairy & Field Crops Team

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Change Service Requested

CALENDAR OF EVENTS Jul 31 Sundaes on the Farm, Dave Kings, Spencer, NY Aug 2 Twilight Dairy Meeting Glezen Farm, LLC, 1024 Caldwell Hill Rd., Lisle, NY 7-8:30pm Aug 4-6 Grasstravaganza, Alfred State SUNY College of Technology, Alfred, NY For more information or to register, contact Karen Meade at 607-587-4714, meadekm@alfredstate.edu or www.alfredstate.ed/grasstravaganza Aug 4-6 **Empire Farm Days** Aug 6 **Tompkins Farm Trail** Pasture Walk: Pastureland Organic Dairy, 8062 2nd West Rd., Manlius, NY Aug 16 11:30am-2:30pm See Page 14 for more information Aug 23 Crop Practices that Support Soil Health, Sweyolakan Farm, 380 Bostwick Rd., Ithaca, NY 11am-1:30pm See Page 15 for more information Aug 25-Sept 4 NYS Fair **Early Sept** Corn Chopping Harvest Day, 2 Locations TBD Oct 18-20 **Cornell Nutrition Conference Oct 24 Onondaga Farm Trail Oct 26** Feeding Calves for the Season Webinar Nov 9+10 Calf Curriculum w/ Farm Tours, Location TBD 16 + 17