

## Cornell Cooperative Extension Delaware County



## Delaware County Leads the Way with Sod Manure Injection & a New Injector!

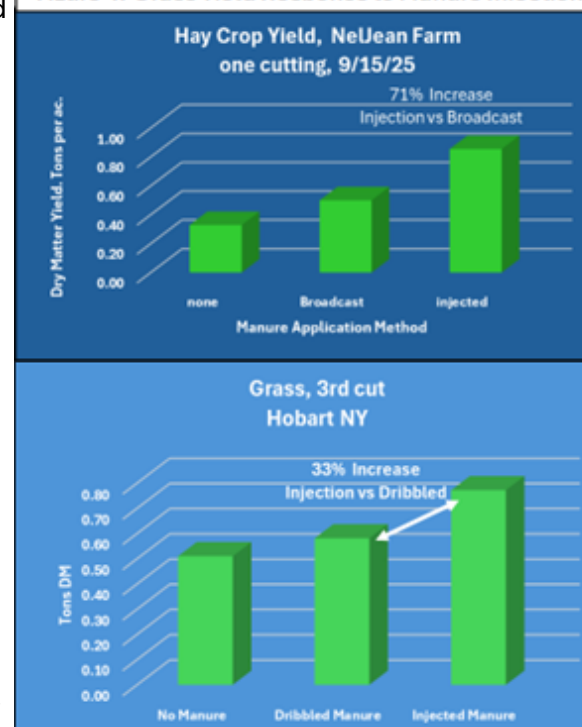
Written by Paul Cerosaletti, CCE Delaware County

Delaware County is leading NYS state in the injection of liquid manure on sod using precision ag equipment. In 2025 the Delaware County Enhancement Manure Management Project, through the efforts of Albano's Precision Application (APA) injected over 9 million gallons of liquid manure on over 1,400 acres in, proving that sod injection was possible, and beneficial.

Our research showed that even in the dry summer last year (after a wet spring), grass responds well to manure injection (Figure 1). We would expect an excellent response; injection into a growing crop will capture 100% of the ammonia nitrogen, providing nearly 3 times more available nitrogen (N) than broadcast manure. Additionally, in fields not receiving regular manure applications, additional phosphorus (P) and potassium (K), as well as sulphur will be beneficial. A 6,000 gallon per acre manure injection rate provides as much as 80 lbs. N, 55 lbs. phosphate, and 115 lbs. potash per acre. Manure provides a complete nutrient package, enhancing grass yield response, as well as forage quality!

With such great opportunity to realize crop production and environmental benefits of manure injection on sod, we sought to enhance the sod manure injection experience in 2026 to increase adoption. Working with APA, we identified a manure injection toolbar developed specifically for sod injection, the ZML Talon bar. This bar was designed to reduce lifting of sod, soil and

Figure 1. Grass Yield Response to Manure Injection



# Sod Manure Injection Cont.



**ZML Talon Grassland Injector** recently purchased by Albano's Precision Application. Disk gangs of three coulters pivot horizontally and vertically 25° to adapt to terrain and cornering.

stones. It accomplishes this with smooth coulters running straight (as opposed to at a fixed angle to the direction of travel), and the injection units are built to flex vertically as well as horizontally. A demonstration trial in May 2026 significantly convinced us this bar could accomplish the reduced sod disturbance farmers were looking for. Additionally, its narrow row spacing (10" vs 20") provides a more uniform manure distribution. APA recently acquired a 25' Talon tool bar and began using it on farms in late last month! This toolbar, coupled with an additional sod injection incentive payment, implemented beginning in 2026 will pave the way for increased sod injection adoption in Delaware County in 2026!



Manure Injection strips from ZML Talon Grassland Injector on winter triticale stubble.

## Agricultural Resiliency Against Tariffs Program

The Agricultural Resiliency Against Tariffs Program was announced in Governor Hochul's 2026 State of the State address to help offset rising costs and market loss that New York farmers faced in 2025 because of federal tariff policy. In the Fiscal Year 2026-2027 State Budget, \$30 million was appropriated to the program to provide direct payments to eligible agricultural producers. The minimum payment per eligible entity is \$1,000. The maximum payment is \$25,000.

Farms must have been in business in 2025 and still currently in business, be a dairy, livestock, specialty crop or aquaculture farm, and have at least 2/3<sup>rd</sup>s of federal gross income from all sources in excess of \$30,000 derived from agricultural activities, as defined by NYS tax law. The farm income requirement must be certified and attested to by a qualified financial professional. **NOTE: row crops (corn, soybeans, barley, wheat, etc.) eligible under the USDA Farmer Bridge Assistance Program are INELIGIBLE under this program.**

For more information and to apply, see: <https://agriculture.ny.gov/agricultural-resiliency-against-tariffs-program>



# FRUIT & VEG CORNER

## Do's & Don'ts of Composting



*Revised by Lila Shafer. BT Horticulturist. Adapted from Do's and Don'ts of Composting: A Simple Guide for Beginners by Jacob Harper, University of Georgia-The Daily Dirt.*

Composting is a simple way to recycle food scraps and yard waste into a nutrient-rich soil amendment. A few basic practices can help ensure success.

- Do** balance "greens" (fruit and vegetable scraps, coffee grounds, grass clippings) with "browns" (dry leaves, cardboard, and wood chips). Aim for roughly two to three parts browns for every one part greens.
- Do** keep the pile moist and turn it regularly to provide oxygen for the microorganisms that drive decomposition.
- Don't** add meat, dairy products, oils, or other high-fat foods, which can attract pests and create odors. Large branches and woody materials should also be chopped into smaller pieces before composting.
- Do** be patient. Depending on conditions and management, compost can take several months to a year to mature. Finished compost should be dark, crumbly, and have an earthy smell.

With the right balance of materials, moisture, and airflow, composting can be an easy and rewarding addition to any garden or landscape.



## Interested in becoming a horticulture volunteer?



Love gardening?

Whether you're an experienced gardener or just getting started, our Horticulture Volunteer Program is a great way to learn new skills, connect with fellow gardeners, and give back to the community. Volunteers help support community gardens and the Demonstration Garden & 4-H Camp Garden Class Program with seasonal tasks such as planting, weeding, watering, and harvesting. No experience is necessary—just an interest in gardening and a willingness to learn. It's also a great way to explore the Master Gardener Volunteer Program!

For more information contact:  
 Lila Sofia Kuhn,  
 Horticulture & Natural Resource Community Educator  
 607-865-6531  
 email: ls2289@cornell.edu

# ◆ Updates:

JULY/AUG 2026

Summer has arrived, and we know it's the busiest time of year on the farm—and we're keeping pace right alongside you. One of the highlights of our summer has been the installation of our new Demonstration Garden, which will serve as a hub for education through youth programming, as the home base for our Master Gardener volunteers, and in support of our Farm to School initiatives, including culinary training for school food service professionals. In the years ahead, it will continue to grow as a model for school gardens and a seed trial site showcasing new varieties and production practices.



Our ag team also recently hosted a successful Breeding School, bringing producers together for hands-on learning and practical skills to support herd reproductive success. As summer progresses, we're preparing for a full slate of educational opportunities this fall. We look forward to seeing many of you at our 96th Annual Farm Tour as we celebrate another season of agriculture and the people who make it possible!

## CCE Delaware Agriculture Program Staff

- *Desiree Kever, JD Ag Issues Leader*
- *Paul Cerosaletti, MS, CCA Agricultural Program Team Leader*
- *Lila Shafer, BT Horticulture*
- *Autumn Madugno, Ag in the Classroom Educator*
- *Jessica Ladd, Ag/HE Administrative Assistant*

## NYC Watershed Agricultural Program Staff.

- *Dale Dewing, MS CCA Watershed Program Leader*
- *Meghan Potter, Precision Feed Management Team Leader*
- *Rich Toebe, PAS Watershed Livestock Educator*
- *April Wright Lucas, PAS CCA Precision Feed Management Specialist*
- *James Romack, MS Precision Feed Management Specialist*
- *Kim Holden, Sr. Administrative Assistant*



## Upcoming Programs

### NY Grown & Certified Research & Development Grant Workshop

Wednesday, July 29, 12-1 PM  
CCE Delaware Office/ZOOM  
34570 St. Highway 10, Hamden

Join us to learn about Non-Competitive, Rolling Grant program:

- Eligibility
- Eligible projects
- Application process

CCE & Economic Development staff will guide participants on the application process and answer questions.

Register:

[https://reg.cce.cornell.edu/NYGrownCertified-2\\_212](https://reg.cce.cornell.edu/NYGrownCertified-2_212)



### Ag Resiliency Againsts Tariffs Program Workshop

Date: Monday, August 3, 1:30 PM  
CCE Delaware Office  
34570 St. Highway 10, Hamden

Join us to learn about the Program, recently appropriated \$30 million to provide payments directly to agricultural producers. Learn about:

- Eligibility
- Application process

CCE staff will guide participants on accurately applying & submitting applications and answer questions.

Register:

[https://reg.cce.cornell.edu/AgResiliency-2\\_212](https://reg.cce.cornell.edu/AgResiliency-2_212)



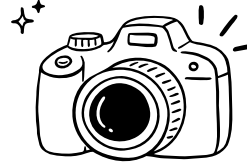
**Have farm photos? We want to tell the story of Del Co Agriculture!**

CCEDC is looking for farm photos and the stories of all types of farms to feature as we tell the story of this county's rich history of agriculture while educating the public on what ag means to our communities!

Photos can include farm animals, barns, crops, tractors, and more—anything that helps showcase the beauty and fun of life on the farm. We would love to hear the history of your farm, how it has changed over generations or your hopes for the future, your biggest challenges and what you find most rewarding!

Help us create beautiful, authentic, and engaging storytelling of agriculture and share your farm with the community! Come have fun with us! Prizes will be awarded to the top 3 submissions.

Submit photos via >>>>> [https://cornell.ca1.qualtrics.com/jfe/form/SV\\_bynn9w5zbCFR9JA](https://cornell.ca1.qualtrics.com/jfe/form/SV_bynn9w5zbCFR9JA)



**Farm Fresh to Shelf Ready**

**Date: Wednesday, September 2, 6pm**  
**CCE Delaware Office, 34570 State Highway 10, Hamden**  
 Cost \$15 for materials



Thinking about trying something new to boost your farm sales? Turn your harvest into opportunity!

This introductory workshop will guide farmers and home canners through the essentials of producing and selling value-added food products legally and successfully. Learn the basics of food safety, processing methods, packaging, and labeling regulations, along with what markets require and how to price for profit.

Participants will receive tools, take-home and digital resources to help them plan their next steps. Whether you're dreaming of your own jam line or exploring new ways to grow your farm's income, this session will give you a clear roadmap to get started.

Register at: <https://tinyurl.com/FF2SR>



**Breaking Ground Beginning Your Farming Journey**

**Date: 9/12/26 8:30 AM-4:00 PM**  
**4-H Camp Shankitunk 2420 Arbor Hill Rd Delhi, NY**



Own agricultural land? Looking to make it WORK for you? From tax assessments to soil potential, explore different types of agricultural production and learn what it takes to run your farm like a business and grow profitability.

**\$55.00/person**  
**\$70.00/Farm (includes 2 ppl, additional person \$20.00)**

Breakout sessions schedule available to view at:

<https://ccedelaware.org/events/2026/09/12/breaking-ground-beginning-your-farming-journey-2026>

Register at: <https://tinyurl.com/CCEDCBG>



**2026 Ag Program Sponsors**

Platinum Sponsor:

- Albano's Precision Application
- Albano's Custom Harvesting

Gold Sponsor:

- Delaware Co. Farm Bureau
- Lutz Feed Company

Silver Sponsor:

- Robertsons Seed
- Stamford Farmers Cooperative
- Del-Rose Farm
- The Hanselman's

*This support of our programming is very much appreciated by us & the farms we serve.*

An Extended Thank You to our Ag program supporters and program grant donors

- O'Connor Foundation
- DelCo EcoDev
- NY Beef Industry Council
- Delaware County Rural Healthcare Alliance

**Stay Connected:**

- [ccedelaware.org](http://ccedelaware.org)
- Follow us on Facebook: Cornell Cooperative Extension of Delaware County: Agriculture
- Email: [delaware@cornell.edu](mailto:delaware@cornell.edu)
- Phone 607.865.6531

# PFM Corner

## Fine Tuning Heifer Nutrition After Weaning

Written by the PFM team

Watershed Agricultural Council  
nycwatershed.org



The transition from milk fed dairy calves to grain and forage eating heifers is an influential time in heifers' lives. There are numerous concepts to think about when looking to improve transition calf management. To best monitor heifer raising programs, having metrics to compare is a must to make positive changes. Obtaining heifer weights, mature body weight and first lactation milk production are KEY to monitoring heifer raising programs.

This article focuses on three nutrition and feeding concepts for heifers:

1. Calf grain/ starter and hay feeding management
2. Mammary gland development
3. Protein and energy composition of heifer diets



### Feeding Strategies:

When thinking about feeding the transition calf, there are quite a few feeding strategy options. The Marcondes Lab Miner Institute in Chazy, NY has conducted several studies on these strategies. Common options include feeding: free choice grain by itself, free choice grain and hay together, a limited amount of grain together with free choice hay, and a total mixed ration (TMR). While it doesn't really matter which strategy you choose, the key to success is to NOT limit feed intake during the transition phase of weaning dairy calves. Feeding a strict amount of grain can be a good strategy, provided grain intake is around 4–5 lbs/day and calves have access to high-quality hay. The key is to pair moderate grain levels with good-quality forage and to avoid restricting grain too severely.

### Mammary Gland Development:

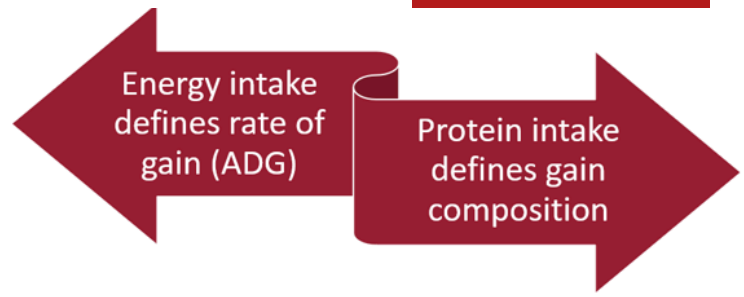
Heifers are the future of your herd. One of the things discovered by the research trials at Miner Institute is that mammary development depends on gain composition and NOT just growth rate. All dairy producers seek to maximize the average daily gain (ADG) of their heifers. However, mammary gland development is optimized by feeding diets which are high in BOTH metabolizable protein (MP) and metabolizable energy (ME) because this combination minimizes fat deposition in the udder in favor of maximizing the development of secretory tissue (Albino et al., JDR, 2015, 82:113-120).

Excessive fat deposition in the mammary gland has been observed when the MP ratio falls below approximately 40 g of MP/Mcal of ME. Therefore, a diet with balanced MP and ME will allow for structural frame growth in the form of muscle and bone with adequate, but not excessive fat deposition.

Be aware of body weight gain recommendations for pregnant heifers, where the focus shifts to the average daily gain (ADG) after conception. Many producers do a good job growing heifers until pregnancy is confirmed, but growth after conception is often inadequate. As a result, heifers may achieve the target breeding weight and still fail to reach the appropriate body weight at calving. It is also important to remember these recommendations refer to the heifer's body weight as a percentage of mature body weight AFTER calving. Those recommendations do not include the weight of the fetus and associated pregnancy tissues, which is a common mistake when calculating the required ADG during gestation.

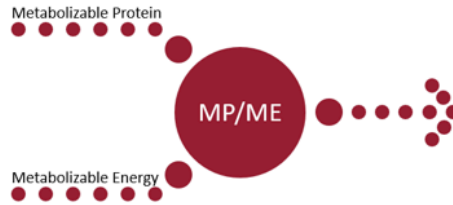
Protein and Energy for Heifer Diets:

Diets containing greater than 22% crude protein will likely exceed the heifer's requirements with little or no benefit while significantly increasing feed costs. Higher dietary starch levels in the diet have the potential to improve heifer growth without negatively influencing health or mammary development.



Conclusion:

As heifers are the future milk producers of dairy herds, heifer nutrition is an extremely important, yet is often an overlooked piece in the puzzle of dairy farm management. To succeed, producers are encouraged to focus on improving the nutrient density of their heifer diets to optimize mammary development simultaneously with maximizing heifer growth rates. To accomplish this, three key concepts which can improve heifer nutrition on your farm today are:



1. Feed the transition calf free choice grain
2. Focus on improving nutrient density of high-quality heifer diets with balanced MP and ME
3. Monitor protein and starch levels of heifer diets.

# FARM SAFETY OUTLOOK

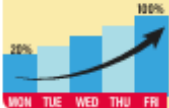


## Prevent Heat Illness at Work

**Outdoor** and **indoor** heat exposure can be dangerous.

### Ways to Protect Yourself and Others

**Ease into Work.** Nearly 3 out of 4 fatalities from heat illness happen during the first week of work.



- ✓ **New and returning** workers need to build tolerance to heat (acclimatize) and take frequent breaks.
- ✓ **Follow the 20% Rule.** On the first day, work no more than 20% of the shift's duration at full intensity in the heat. Increase the duration of time at full intensity by no more than 20% a day until workers are used to working in the heat.



**Drink Cool Water**

Drink cool water even if you are not thirsty – at least 1 cup every 20 minutes.



**Take Rest Breaks**

Take enough time to recover from heat given the temperature, humidity, and conditions.



**Find Shade or a Cool Area**

Take breaks in a designated shady or cool location.



**Dress for the Heat**

Wear a hat and light-colored, loose-fitting, and breathable clothing if possible.



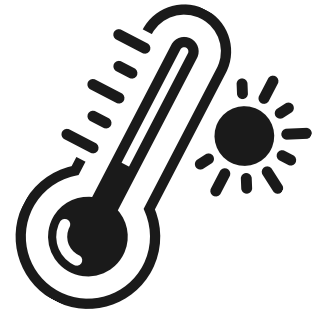
**Watch Out for Each Other**

Monitor yourself and others for signs of heat illness.



**If Wearing a Face Covering**

Change your face covering if it gets wet or soiled. Verbally check on others frequently.



**For more information: 1-800-321-OSHA (6742)  
TTY 1-877-889-5627 [www.osha.gov/heat](http://www.osha.gov/heat)**

Federal law entitles you to a safe workplace. You have the right to speak up about hazards without fear of retaliation. See [www.osha.gov/workers](http://www.osha.gov/workers) for information about how to file a confidential complaint with OSHA and ask for an inspection.

# CORNELL CONNECTIONS

## Employee Development: Investing in Your Farm's Future

Written by Dr. Robert Milligan



Every farm makes major investments each year including:

- Purchasing capital items – tractors, combines, skid loaders.
- Improvements in crop and animal genetics.
- Land and building improvements.

A key to maximizing the return from these investments is by hiring and retaining skilled, engaged employees.

An important, often overlooked, ingredient for skilled and engaged employees is investing in their development. Employee investments are different from the investments above. They require massive amounts of money. Employee development investments require little capital. They do, however, require an employee development mindset and development systems to ensure continuous growth and improvement. The key is that employee development is a PRIORITY.

Below we explore five employee development tools. The five include both one-time development events and continuous systems.

### **A Development Plan**

I recently reviewed an employee handbook for a crop and livestock farm. One section detailed the requirement that each employee have and update annually a development plan for the coming year. I suggest that every farm should adopt this policy. The plan would identify focus areas for growth for the coming year. The plan could include on-farm training; reading materials: virtual sites, webcasts, and webinars: and off-farm learning opportunities for the focus areas.

This plan will be updated late fall or early the next year. As the owner or employee receives invitations or becomes aware of meetings/conferences, attendance can be determined based on the match between the event and the focus areas.

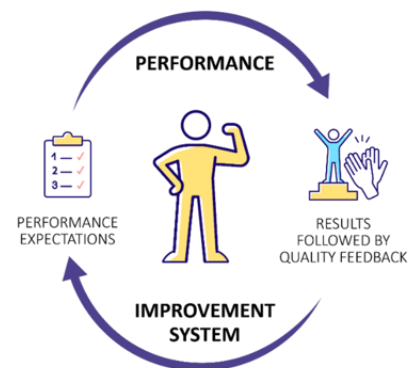
### **A Performance Improvement System**

A Performance Improvement System seeks to provide answers to the two key questions that employees have about their performance:

1. What is expected of me?
2. How am I doing?

The reality is that every business sets expectations and provides feedback. When the “system” answering these two questions is unstructured, employees are left to discover expectations on their own and rarely receive feedback. Both lead to uncertainty, frustration, reduced performance, and lowered retention.

On many farms, the only structured component is an annual performance review. Research, however, has shown that the traditional performance reviews focused on past performance during the year are rarely successful. Feedback on performance should be given as it occurs not at the end of the year.



A “system” for performance improvement and retention that answers the two questions is shown below.

# CORNELL CONNECTIONS

## Employee Development: Investing in Your Farm's Future Contined:

### **A performance system of this type should have three key components:**

1. Informal, continuous feedback allowing employees to continue to evaluate and improve performance.
2. Frequent – often monthly – structured meeting (formal informal system) to assist in assessing performance and resetting performance expectations.
3. Annual strategic meeting to discuss the future.

### **Stay Meetings**

My preferred method of meeting the third component above is a Stay Meeting.

### **Key characteristics of a Stay Meeting are:**

- Purpose: Develop plans, including professional development, to enhance performance, job satisfaction, and increase the likelihood the employee will STAY.
- Looks forward not backward like traditional annual performance reviews.
- Collaborative, open discussion with the supervisor listening carefully and asking questions.

Let's look at the Stay Meeting in a little more detail:

- How: This is typically a 1-on-1 with the employee's supervisor. In some situations, especially with beginning users of the Stay Meeting idea, an outside individual familiar with Stay Meetings can be a useful addition. I have assisted supervisors in person and online.
- When: The Stay meeting is typically the annual meeting in the Performance Improvement System replacing the dreaded annual performance review. Having a scheduled meeting conveys its importance.
- Who: The title Stay Meeting has as a key goal to increase employee retention. The focus, then, should be on those employees that are most connected and important to the to the farm. It is hoped that the Stay Meeting will contribute to the employee becoming a career employee.

### **Employee Interpersonal Skills**

Excellent communication is key to everyday operations, team meetings, and all decision making. Learning and practice can dramatically improve these skills and thus enable more effective communication. In my opinion, the keys to excellent communication are listening, asking questions, and psychological safety. There are numerous options for improving listening and question asking including internet resources and programs to full length courses at colleges.

Psychological safety means feeling safe to take interpersonal risks, to speak up, to disagree openly, and to surface concerns without fear of negative repercussions or pressure to sugarcoat bad news. A farm culture that supports psychological safety is required. Here, the ball is in the owners' court to create this culture; numerous opportunities to lead the required leadership skills are available.

### **Career-oriented Compensation**

A key to having a great workforce is retention of key employees. One component of employee retention is assisting these employees to view employment with your farm as their career. Stay Meetings, discussed above, are a key component in creating a view that employment with you is a career.

Compensation is also an important but challenging part of creating career employees. Younger and often first-line employees typically focus on having cash as their compensation. As employees age, advance, and become more family oriented, they seek benefits like excellent health insurance and a retirement program. Balancing these differing desires, especially in our difficult labor market, is a challenge. Being flexible in compensation and communication with your employees are key to developing and retaining career-oriented employees.

### **A Final Word**

Now is the time to select one or two of these development tools and make an investment in your employees and therefore in your farm's future.

## Master Gardener Volunteer Helpline



We're excited to introduce our new Master Gardener Helpline! Have a pest problem? A persistent weed? Questions on your veggie, fruit,

flower gardens or lawns- visit our new helpline! Click [https://cornell.ca1.qualtrics.com/jfe/form/SV\\_6YDx](https://cornell.ca1.qualtrics.com/jfe/form/SV_6YDx) or scan the QR code below.

This will take you directly to the questionnaire to share all the details you have on your problem or question, including any photos. Photos are especially important to more accurately answer your questions and provide correct information.

Easily accessible from your phone, you can ask your questions and snap your photos all at once!

One of our Master Gardener Volunteers will review your inquiry and be in contact with research-based solutions/ answers to you inquiry.

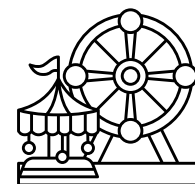


## Look For Us at The Delaware County Fair!

Join the CCE Ag Team in the Ag Awareness Area at the Delaware County Fair! August 17-22, the CCE Ag Team will be in the Ag Awareness Area all week with exciting new activities for fairgoers of all ages! This year's updated and expanded children's area features even more hands-on learning experiences to enjoy.

Visitors can enjoy:

- The ever-popular Forage Contest
- Our brand-new "Power of Poop" exhibit
- A fair-wide scavenger hunt
- Giveaways and educational activities
- A virtual Ag Story Time reading
- Meet the Producer events
- "Voice of the Barn" Scavenger hunt
- Ag in the Classroom displays
- Photo Opp areas
- Much more!



Be sure to stop by and discover the fun side of agriculture while learning where your food comes from!

# NY GROWN & CERTIFIED GRANT NOW OPEN

The New York Farm Viability Institute announces the 2026 NYS Grown & Certified Research and Development Grant (GCRD) is open and currently accepting applications. The GCRD is administered in partnership with the New York State Department of Agriculture and Markets.

This program offers \$1.36 million to help NYS Grown & Certified farmers, food processors and distributors cover the research and development costs needed to launch new NYS Grown & Certified food products or increase the production and/or distribution of existing NYS Grown & Certified food products.

The GCRD is a **non-competitive grant**. **Applications will be accepted on a rolling basis**. If the application meets all the eligibility requirements, then an award will be offered.

### What can be funded?

Consulting services, technical service providers, market research, product development, food lab testing and pilot runs, GAP and USDA certification training expenses, farm-to-institution specialists, other services tied to R&D

### Funding Information?

Minimum award of \$10,000 to a maximum award of \$50,000 with a 10% match and an 18-month completion time

Application period: June 26, 2026 – October 25, 2027 (Or until funds are exhausted)



# Dietary Strategies to Optimize Calcium Metabolism and Maximize Post Calving Performance. The first article of a 3-part series

by Dr. Thomas R. Overton, Department of Animal Science at Cornell University



Hypocalcemia (milk fever), both clinical and subclinical, has been recognized as a gateway disorder in fresh cows for many years (Horst et al., 1997). Over the past 5-10 years, our understanding of the dynamics of calcium metabolism has been refined. Neves et al. (2018) studied the epidemiology of hypocalcemia during the first 4 days post calving and determined that circulating total calcium concentrations in the blood during the Day 1 in milk were not associated with greater risk of post calving health disorders. The study also found that cows in their second lactation (or more) with lower total calcium concentrations at one day after calving actually made more milk than cows with higher total calcium concentrations. On the other hand, cows which had lower circulating total blood calcium concentrations on days 2, 3, and 4 post calving were generally more at risk for health disorders and second lactation and greater cows with low blood calcium at 4 days in milk made less milk than their counterparts with higher blood calcium levels.

In a follow up study, McArt and Neves (2020) classified cows into 4 categories: normocalcemic, transiently hypocalcemic, persistently hypocalcemic, and delayed hypocalcemic. Second lactation and greater cows with transient hypocalcemia had a higher risk for adverse health events than normocalcemic cows, but the risk was much greater in cows with persistent or delayed hypocalcemia. Furthermore, both first lactation and second and greater lactation cows with transient hypocalcemia made more milk during the first 10 weeks of lactation than cows in any of the other three groups. Consistent with these results, Seely et al. (2021) did a third study which determined that normocalcemic and transiently hypocalcemic cows had higher dry matter intakes (DMI) than cows with persistent or delayed hypocalcemia. That study also found that transiently hypocalcemic cows produced more milk than the cows categorized in the other groups.

Collectively, the results of the 3 research trials done at Cornell University suggest the prevention of hypocalcemia, particularly that which persists beyond or develops after the first day after calving, is critical for setting cows up for success during the transition period. To mitigate the incidence of hypocalcemia in your herds, there are currently two pre-calving dietary strategies available which have been proven to be effective on farm: **decreasing the dietary cation-anion difference (DCAD) of the pre-fresh diet.** and **using a compound which binds calcium and phosphorus to decrease absorption of these minerals from the digestive tract,** thus creating a situation which activates the homeostatic mechanisms to maintain calcium status in the bloodstream.

At this point in time, these are generally considered to be separate strategies, and further research needs to be done to determine otherwise. **In the next issues of Ag News, Dr. Overton will discuss these strategies in depth.**

# CORNELL CONNECTIONS



## Midsummer Parasite Management in Sheep & Goats



Written By Rich Toebe, CCE Educator

One of the biggest health challenges facing small ruminants that are grazed are internal parasites. The most common gastrointestinal parasite for which we need to manage is the Barber Pole Worm (*Haemonchus contortus*). If left unchecked, this parasite can cause devastating production losses and death. Although management of parasites is a year-round task, the threat of devastating parasite loads peaks in the summer months of July and August. I will first talk about why this threat can easily ‘explode’ by the time summer arrives and then discuss management strategies to reduce the threat to manageable levels that allow the sheep and goats to reach their potential

### **Understanding how the Biology of the Barber Pole Worm Works Against Us**

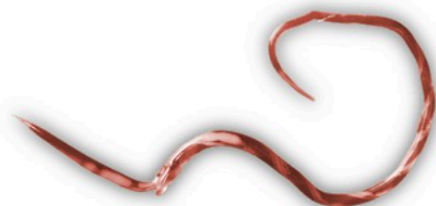
Our warm humid summers are ideal for many parasite life cycles. Under ideal conditions, the life cycle can be as short as three weeks. Starting with a sheep or goat defecating, the basic life cycle is as follows:

- Sheep or goat defecates; eggs are in the feces. The eggs soon start to hatch.
- The first stage is known as Larval 1 (L1). The larvae eat bacteria in the feces and molts.
- The L2 larvae eat more bacteria and molts into L3 but does not shed its cuticle (outer coating). This makes it more resistant to drying out. It can take as little as 4 days to reach this point.
- The L3 larvae leaves the manure (if manure is pelleted, it may need a good rain to allow this to happen), crawls up a plant in the water film and waits to be consumed by a sheep or goat. The larvae can easily survive for 30 to 60 days depending on temperature and moisture.
- Once swallowed by the sheep or goat, it quickly molts to L4 and starts feeding on blood in the abomasum of the animal. It molts one more time to the L5 or adult stage, continues to suck blood, and starts laying 5,000 to 10,000 eggs per day. The eggs leave the body in the feces and the cycle repeats.

*So, you can quickly imagine how an infestation of Barber Pole worms can explode to enormous numbers of eggs being deposited in just a few months. Because they suck blood and they are so numerous, they can quickly weaken and even kill their host.*

### **A few additional aspects of the Barber Pole worm biology are worth noting:**

1. *Their life cycle corresponds with typical pasture growth in New York. The numbers of infective larvae on pasture peaks at the same time as when the pasture is at optimal nutritional status for re-grazing. This means that good pasture management for ruminant nutrition is also unfortunately ideal management to maximize the populations of the parasites.*
2. *In the fall of the year, the L4 larvae in the animals go into hypobiosis – a state of suspended growth. This allows the worms inside the animals to wait out winter before molting into the reproductive stage once spring arrives.*
3. *The L3 larvae on pasture can survive subzero temperatures. If there is good snow cover, many of the larvae can survive until spring growth starts again.*



Female barber pole worm under magnification. Picture credit: Sul Ross State University.

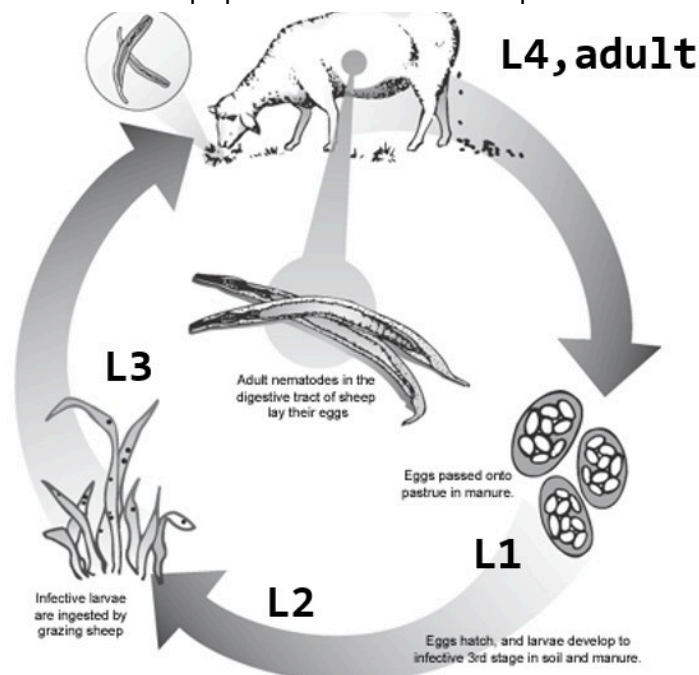
## Midsummer Parasite Management in Sheep & Goats Cont:

### Management Strategies to Control or Reduce Barber Pole Parasitism in the Summer:

By knowing and understanding the Barber Pole worm lifecycle, we can identify opportunities to limit their impact on our flock or herd. As mentioned earlier, this is really a year-round responsibility of the livestock farmer. I would recommend taking a FAMACHA course for a more complete understanding of the full suite of management activities that are implemented throughout the year. For this article, I will limit the discussion to just pasture management actions that can be taken to help break the cycle.

- Practice 'Evasive Grazing'
  1. Rotate to fresh pasture every three days or less to eliminate the ability of the worm to reach the infective L3 stage within four days of being defecated.
  2. Do not return to the same pasture for 60 days. This time frame results in the majority of the L3 larvae dying due to time. (See next three suggestions that help support this practice.)
- Make a cutting of hay between grazing events
- Graze an alternate species such as beef or dairy. These are dead ends for any parasites consumed.
- Mow and leave the residue between grazing events. This helps to fertilize the forage, resets the forage so it will be optimal quality when next grazed, and increases the time for L3 die off.
- Leave a 4" to 6" residual. The L3 larvae move up and down the water film of the plant. They seldom get more than 6" above the soil level.
- If you house your stock at night in a barn, wait for the dew to burn off before turning the animals out. The larvae will have migrated back down the plant and are less likely to be consumed.
- Use Livamol or Bioworma. These products contain the fungus *Duddingtonia flagrans*. This fungus feeds on nematodes in freshly deposited manure. Note, this does not treat the parasite infection; it works by impacting long term parasite population in the pasture.
- Determine which animals have high parasite burdens using techniques such as FAMACHA scoring, 5-point check, and fecal egg counts. Use an anthelmintic to treat only those animals with a sufficiently high worm burden.

With an understanding of the parasite life cycles, one can develop a grazing and management strategy that limits the ability of the parasite to reach population levels that impacts the well-being of our small ruminants.



# The Agritourism Brief

## Farm Safety for Agritourism

Agritourism Project Work Team

### 1 Assessing Your Potential Risks

Inviting the general public onto your farm comes with potential risks including:

- zoning regulations
- safety & liability
- Insurance/compliance considerations

### 2 Tripping Hazards

- Uneven walking surfaces- concrete, grass, dirt, and field conditions in PYO
- extra supplies & materials
- extension cords

### 3 Safety Concerns for Livestock Operations

- Open areas in barns where the public can interact
- Lack of barricades over open areas in floors (gutters, scragging drop offs, etc)
- Lack of hand sanitation options
- Zoonotic disease exposures

### 5 Mechanical Hazards

Conduct an inventory of potential mechanical hazards related to farm equipment. Can it pinch, pull, rip, burn, or create other hazards? Are the shields & guards in place, warnings in place? Potential hazards include:

- Barn Cleaner
- Cider Press
- Hay Wagons
- Pruning Tolls/Saws/Shears
- Livestock Gates

### 4 Medications & Chemicals

As a working farm, you will likely have medications and/or chemicals on-site to address production needs.

- Are chemicals, even windshield washer fluid, locked up?
- Are animal medications/supplements secured?
- If applicable, do you have a sharps container, and is it out of the reach of the general public?

### 6 Fencing on Your Farm

Fencing serves many functions, including livestock boundaries, water protection, etc...Safety consideration include:

- signage regarding use (electric fence, body of water, etc)
- efficacy in keeping the public and livestock safe
- signage related to risks interacting with livestock

### 7 Farm Equipment

- Ensure tractor implements are lowered all the way to the ground
- Ensure parking brakes are set
- Lock the doors
- Remove keys from tractors
- Ensure equipment is in good working order



Stay connected and continue learning with the **Agritourism Monthly Webinar Series**

## Delaware Bounty Launches Searchable Website!

To further enhance this project and make it even easier for consumers to find your farm, we have launched a fully searchable site-by product, location, or credential. Explore the new website @ [delawarebounty.org](http://delawarebounty.org)

Haven't enrolled your farm yet, but want to? NOW is the time! While we can add your farm at any time to the website, we are getting ready to go to print and can add your farm before July 13th!

The goal of this wildly successful project is to connect consumers to our local farms offering meats, fruits, veggies and fiber produced on their farms for direct to consumer sales. Whether you are offering sales via farmers' markets, roadside stands, u-pick, or order/farm pick-up venues, a listing on the print map is available at NO CHARGE. Simply fill out the enrollment questionnaire at: [https://cornell.ca1.qualtrics.com/jfe/form/SV\\_0jjJ6lvMQVviA74](https://cornell.ca1.qualtrics.com/jfe/form/SV_0jjJ6lvMQVviA74).

Please answer questions EXACTLY as you wish info to appear on your listing, we cannot edit.

Want to get even more visibility and support our food systems work? Consider sponsorship of the Delaware Bounty program. Learn more and make your sponsorship @ <https://tinyurl.com/SponsorDelBounty>





# 2026 NYS AGRITOURISM CONFERENCE

Presented by the Cornell Cooperative Extension Agritourism Program Work Team

**NOVEMBER 4-5, 2026**  
**CORNELL AGRITECH - GENEVA, NY**

The 2026 NYS Agritourism Conference delivers practical takeaways, proven strategies, and connections you can use right away.

**NOVEMBER 04:** Full Day Educational Sessions & Evening Networking Session

**NOVEMBER 05:** Half-Day Options: Agritourism Accessibility or Product Development



Questions? Contact:  
[lep67@cornell.edu](mailto:lep67@cornell.edu)



Visit our conference website :  
[nyagritourismconference.com](http://nyagritourismconference.com)

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## 96th Annual Delaware County Farm Tour: Progressive Paths in Agriculture

July 13, 2026 | 10AM



Join CCE Delaware & partnering agencies as we showcase farms building resilient futures through innovation, stewardship and strategic decision making.

Tour will begin at Elm Side Farm, 4649 County Highway 47, Walton, NY  
Brown Bag Lunch stop will be Skytop Springs (bring your own lunch)  
Ice-cream provided as we conclude at Ritz Dairy



### Elm Side Farm

4649 Cty Hwy 47  
Walton, NY  
10:00 AM-11:00 AM  
*beef production*



### Skytop Springs Farm

234 Skytop Ln  
Sidney Center, NY  
11:30 AM-1:30 PM  
*trout production*



### Ritz Farm

11320 NY-357  
Franklin, NY  
2:00 PM-3:30 PM  
*dairy production*

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