

# AG NEWS

Cornell Cooperative Extension  
Delaware County



## HIGHLY PATHOGENIC AVIAN INFLUENZA-A PRIMER ON WHAT YOU NEED TO KNOW

Highly Pathogenic Avian Influenza (HPAI) is a contagious poultry virus that has caused significant financial losses to the U.S. poultry industry and disruptions to the nation's supply of eggs and poultry meat. The highly pathogenic strain, H5N1, has been circulating in the U.S. since February 2022 resulting in the death and euthanasia of over 148 million birds in nearly 1,500 commercial and backyard flocks. Wild waterfowl regularly carry low-pathogenic strains of the virus, but it can easily mutate to a highly pathogenic strain, as we've seen with this outbreak. The disease has spread to mammalian and avian scavengers that feed on the carcasses of dead, infected wild waterfowl. It has also been found to spread to poultry from infected dairy cattle.

HPAI is a serious threat to poultry and dairy cattle agriculture. So far in 2025, HPAI has been detected in 12 locations in New York State resulting. To date, it has not been found in dairy cattle in New York State.

Check out the links included on the resource page inside for information.

**Think you may have HPAI in Your Flock?** Report it! If a large number of your birds are sick or dying, it is important to report it immediately. To report, you can call:

New York State Department of Ag & Markets: 518-457-3502  
United States Department of Agriculture: 866-536-7593



# Updates:

## PROGRAMMING



### CCE Delaware Agriculture Program Staff

Agricultural Program Team Leader:

- Paul Cerosaletti, MS CCA

NYC Watershed Agricultural Program Staff:

- Dale Dewing, MS CCA  
*Watershed Program Leader*
- Rich Toebe, PAS  
*Watershed Livestock Educator*
- April Wright Lucas, PAS CCA  
*Precision Feed Management Specialist*
- James Romack, MS  
*Precision Feed Management Specialist*

Farm Business Management & Ag Economic Development:

- Desiree Keever, JD

## Gearing up for Spring!

It has been a long, white winter and we are all getting ready for spring cropping, pasturing and marketing! We have a robust offering of programming planned as the snow melts and the ground warms to help everyone be in the strongest position to make the most of the upcoming growing & marketing season.

As we prepare for the season, we have a focus in this issue on the value of manure in our cropping systems. This is a great opportunity to maximize the value in our operations. In addition to the resources included here, we are excited to offer the inaugural Manure Road Show, right here in Delaware County!

We are also looking forward to engaging with all of our producers as we connect our consumers to our bounty! Please keep your eyes open for opportunities to get involved!

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

### 2025 Ag Program Sponsors

Platinum Sponsor:

- Farm Credit East ACA
- Delaware County Farm Bureau
- Albano's Precision Application

Gold Sponsor:

- Lutz Feed Co.

Silver Sponsor:

- Wayne Bank

Bronze Sponsor:

- Stamford Farmers Cooperative

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

# CORNELL CONNECTIONS

## Highly Pathogenic Avian Influenza Resources

**Cornell College of Veterinary Medicine** maintains the Highly Pathogenic Avian Influenza Resource Center. This site provides links to resources that address impacts such as human health, pets, wildlife and research.

<https://www.vet.cornell.edu/highly-pathogenic-avian-influenza-bird-flu-resource-center>



**To learn more about the Avian Influenza, connect to Cornell's** list of Frequently Asked Questions. This website has answers for many common questions such as: What are the symptoms of avian influenza, what happens if it is in your flock, information on impacts on poultry shows, and much more.

<https://cals.cornell.edu/news/2022/04/frequently-asked-questions-about-bird-flu-new-york-state>

**For information on HPAI in dairy cattle**, check out this Cornell website. This page has information and factsheets you can download on topics relevant to the impact on the dairy industry as well as consumers in both English and Spanish.

<https://cals.cornell.edu/institute-for-food-safety/resources/hpai>



**Want to know how to keep your poultry safe?** Biosecurity is the key to greatly reducing the risk of your birds getting contracting Avian Influenza. The USDA's Defend the Flock website is full of resources to help you create a biosecurity plan that works for your flock.

<https://www.aphis.usda.gov/livestock-poultry-disease/avian/defend-the-flock>

**Interested in the national numbers, maps of detections, detections in wild birds, mammals, and livestock?** The USDA Animal and Plant Health Inspection Service (APHIS) maintains a dashboard that lets you dig into the numbers. This site is updated almost daily

<https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections>



**The State of New York Department of Agriculture and Markets** poultry page is the go-to place to get the full New York response to the Avian Influenza. This site lists all of New York State poultry detections, has info on other poultry diseases, provides biosecurity info, import/export information, and any bans on NY poultry shows or fairs.

<https://agriculture.ny.gov/animals/poultry>

**Unusual wild bird death?** Unusual illness and deaths of wild birds should be reported to the New York Department of Environmental Conservation (NY DEC). This link will take you to an online reporting form. The form includes questions on your contact information, bird species & the location of the bird.

<https://survey123.arcgis.com/share/dee381c0ee8a4114a83dc1892fc0f7ed>



**Bird Migration** Waterfowl, both wild and domestic, act as the primary carriers, which can spread the virus to other wild bird and domestic poultry populations. The Cornell Lab of Ornithology participates in a live and interactive dashboard that monitors bird migration in real time across the United States.

<https://birdcast.info/>



# Upcoming Programs

No Cost to Attend, unless otherwise noted!

Watershed Agricultural Council  
Agricultural Program  
nycwatershed.org



## Spring Cow/Calf Meeting

Tuesday, Mar 11, 6:00 pm

**Meridale Fire Hall**

**50 County Highway 10, Meridale**

The value of beef is at the high point in the cycle. Now is the time to make sure you are optimizing your production & profit potential.

- Enhancing Herd Health Through Vaccination
- Preparing for the Breeding Season

Dinner @ 6pm, Cost is \$10/person

Register: call Kim @607.865.7090 or kmh19@cornell.edu by March 7th



Location: Watershed Project Office, 44 West Street, Walton, NY

**Free "Don't Get Ticked New York" kit, includes tick removal equipment, tick id cards**

- Tick-borne diseases found in livestock in NY
- How to mitigate risks for both livestock and farmer
- Local farmer telling their story of how a tick bite impacted their life
- How to protect yourself from tick bites and associated tick-borne diseases
- Speakers: Joellen Lampman, Cornell IPM Program

Events sponsored by the  
Watershed Agricultural Council



## Spring Small Ruminant Meeting

Wednesday, Mar 19, 5:30 pm

**MTC Community Room**

**61 Academy St, Margaretville**

Come for part or all, beginner session before the meal, advanced topics after.

- 5:30 Beginning Sheep & Goat Production: housing, handling, nutrition, birthing & more
- 6:30 Meal
- 7:00 The Replacement Female: target body weights, selection criteria, nutrition
- 7:45 Predator Management: prevention, fencing, and guardian animals.



Register with Kim Holden:  
607.865.7090 or kmh19@cornell.edu  
by March 18th

## Let's Talk Ticks: What Every Livestock Producer Needs to Know

Wednesday, March 12, 6-7:30pm



## Preparing Your Farm Business for Succession

Monday, Mar. 24, 2-4:30pm

**CCE Delaware**

**34570 St. Hwy. 10, Hamden**

- Identifying the work needed to achieve a successful farm transition
- Focusing on the financial health of the farm
- Identifying the assets to be transferred and the tools available to transfer

Register @

[https://reg.cce.cornell.edu/PrepFarmBusinessforSuccession\\_212](https://reg.cce.cornell.edu/PrepFarmBusinessforSuccession_212) or call Kim @607.865.7090



## Marketing your Farm's Products

Tuesday, Mar 25, 6:30 pm

**Andes Fire Meeting Hall**

**5259 County Road 1, Andes**

A 2-part workshop to introduce new tools to increase sales!

Presentation by Matt LeRoux

- 5:30 Creating & Pricing Consumer Friendly Meat with MeatSuite
- 6:30 Dinner & Networking
- 7:15 Using the Customer Experience & Pricing to Improve Market Sales

Register with Kim Holden:

607.865.7090 or kmh19@cornell.edu  
by March 24th





## Crop School 2025

Thursday, Apr 10, 10:00am – 3:30pm

**Hobart Community Center**

**80 Cornell Avenue, Hobart**

**Registration \$10, Includes Lunch**

**Welcome and a Review of Haycrop Scissors**  
**Cuts data: Dale Dewing & Paul Cerosaletti**  
**(CCE Delaware)**

**Corn Silage Quality: Joe Lawrence (PRO-DAIRY)** Factors that influence corn silage quality of both starch and fiber fractions.

**Biocontrol Nematodes for Corn Rootworm: Mike Hunter (PRO-DAIRY)**

A new technology with highly effective rootworm control with long-lasting one-time application; a promising alternative to GMO traits & pesticides.

**Lunch – by The Farmer's Wife**

**Nitrogen Math for Corn and Grass Production: Paul Cerosaletti & Dale Dewing (CCE Delaware)** A refresher on nitrogen accounting from organic matter.

**Soybean production Best Practices: Cassidy Fletcher (Seedway)** Variety selection for traits in disease resistance, weed control and quality. Seed treatment, optimal planting date, and fertility management also covered.

**Non-Glyphosate Weed Control programs for Corn and Soybeans Mike Hunter (PRO-DAIRY)** Explore effective herbicide programs and timing of application for weed control in conventional corn and soybeans.

Register by April 6 by calling Kim Holden at 607-865-7090 or [kmh19@cornell.edu](mailto:kmh19@cornell.edu) Pay at the door.



## Plan Ahead

**Keep an eye out for these upcoming sessions:**

- FAMACHA Course
- Maple Update at Shaver Hill
- Succeeding at Farmers Markets
- Eat-n-greet: Exploring local foods in our local schools

## Manure Road Show 2025

Monday, Mar 31, 10:00 am – 2:30 pm

**Hobart Community Center: 80 Cornell Avenue, Hobart**

**Registration \$10, Includes Lunch**

**Manure Applicator Training: Kirsten Workman (PRO-DAIRY)** Using real-life scenarios, this is for anyone who applies manure. Learn implementation strategies to help you responsibly apply your manure and utilize nutrients most effectively while protecting the environment. Fulfills required training for CAFO farm manure applicator employees.

**Nutrient Management Specifics for WAC Manure Applicators: Dale Dewing (CCE Delaware), Cindy McCarthy (WAC)** Review the parts of your Nutrient Management Plan (NMP) that can help you accomplish the goals we cover during the manure applicator training? Maps, setbacks, spreading rates, etc. Your NMP specialists will share some.

**Manure Injection: Maximizing Your Manure Resources: Kirsten Workman (PRO-DAIRY), Paul Cerosaletti (CCE Delaware)** How manure injection can benefit your farm. We'll go over equipment and logistics, nitrogen and yield benefits, manure allocations, and reducing nutrient runoff and more.

**Lunch – by The Farmer's Wife**

**On-Farm Livestock Mortality Management: Jason Oliver (PRO-DAIRY), Kirsten Workman (PRO-DAIRY)** Rendering is not always an option and can be cost prohibitive. We will discuss the options available, regulatory considerations, and best management practices for managing mortalities on farm.

**Bedded Packs – Manage Them for Success? Jason Oliver (PRO-DAIRY)** Bedded packs can be alternatives to conventional livestock heavy use areas. How do you know if they might be right for your farm, what are the challenges and strategies for successful operation and management of these facilities.

**Manure Safety: Jason Oliver (PRO-DAIRY)** Keep your crew safe, healthy, and productive. Topics will include manure gases, safety protocol, strategies for keeping employees safe, OSHA compliance and more.

Register by March 26 by calling Kim Holden at 607-865-7090 or [kmh19@cornell.edu](mailto:kmh19@cornell.edu) or scan the QR Code. Pay at the door.



# PUTTING KNOWLEDGE TO WORK



## Colostrum Management: Factors Influencing Yield, Quality, & Calf Health

*By April Wright Lucas, PAS, CCA, Precision Feed Management Specialist  
NYC Watershed Agricultural Program*

Key Points from Dr. Trent Westhoff presentation at the calf meeting on December 18th.

Feeding high-quality colostrum is essential to reduce pre-weaning illness and mortality.

The essential components of colostrum include:

- Water ~76%
- Solids ~23% (Fat ~5-7%, Protein ~14%, Lactose~2.7%)
- Minerals ~1% (calcium, magnesium, phosphorus, sodium, potassium, chloride, and sulfur)
- Immunoglobulins (IgG, IgM, IgA)
- Micronutrients (trace minerals, vitamins)
- Growth factors, hormones (insulin, IGF, ...)
- Immune cells (macrophages, neutrophils, lymphocytes)
- Antimicrobial peptides, complement proteins
- Enzymes, protease inhibitors (antiviral)
- mRNA (small RNA molecule that regulates gene expression)
- We are learning that there may be other components

Colostrum synthesis, is the prepartum transfer of immunoglobulins (IgG) from maternal circulation into mammary secretions. This starts approximately 4 weeks prior to calving and steadily increases, reaching its peak in the 10-day interval prior to calving. Transition milk, which is the milk produced 2-3 days after calving is also an important source of IgGs.

Dry cow management and individual cow factors influence colostrum yield and the Brix percentage in colostrum. The use of a Brix Refractometer is a good tool to measure the quality of

colostrum on farm. Brix measures the dissolved solids in a liquid via its specific gravity. A higher Brix percentage correlates with increased quality.

The number of lactations has an influence on colostrum production. Yields are highest in second lactation animals and the quality increases with each progressive lactation.

The length of the dry period influences both yield and quality (as measured by Brix %). Cows managed for a 60-day dry period resulted in more colostrum compared to cows with a 40-day dry period.

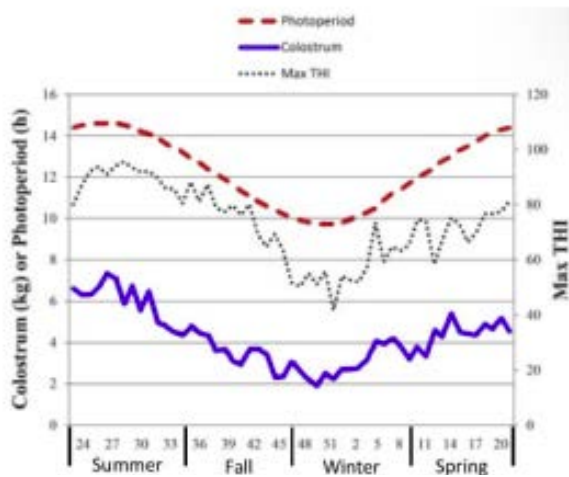
### Dairy Acceleration Program Funds Available

Funds available for the:

- Organization of financial records/benchmarking up to \$1,000
- Continued business planning (for farms awarded in previous year) up to \$2,500
- Business planning up to \$5,000

Guidelines remain the same, DAP covers 80% of the cost up to the value of the award and the farm is responsible for 20%. Visit [prodairy.cals.cornell.edu/dairy-acceleration/](http://prodairy.cals.cornell.edu/dairy-acceleration/)





Gavin et al, 2018

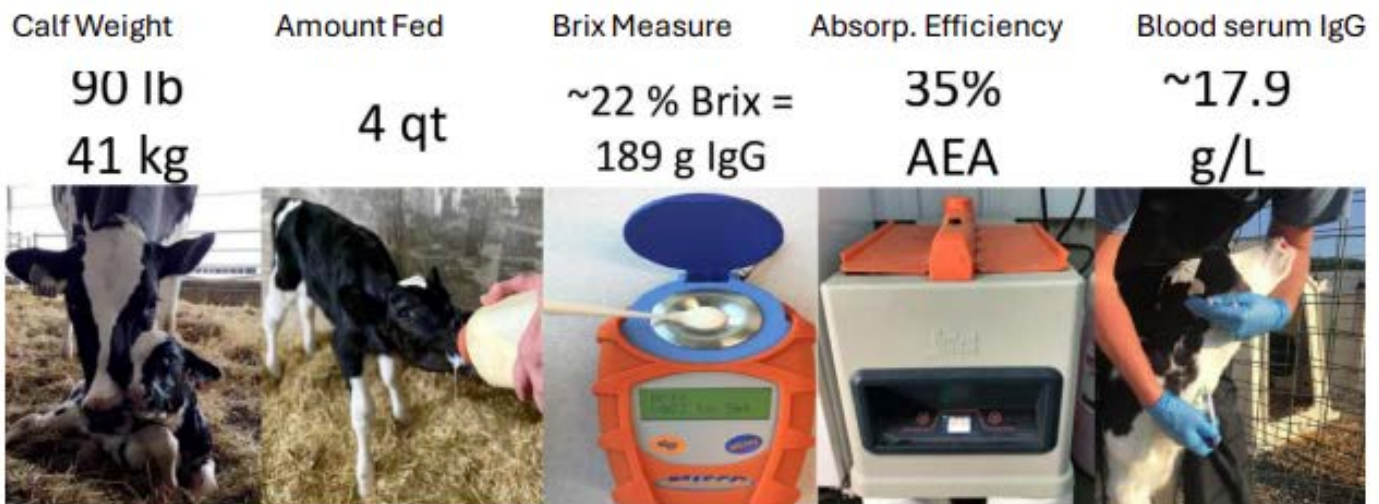
Seasonal effects of photoperiod (hours of light exposure), the temperature, and humidity index all influence the amount of colostrum produced. Impacts on yield are displayed in the graph on the right.

Heat stress decreases both the yield and quality. Keeping dry cows cool has a major impact.

Close up diets influence pounds of colostrum produced. Increasing energy density in the close-up diet decreases quality while it increases the number of pounds produced.

This would be an important consideration and is important in managing cow diets and the use of brix percentage to assess colostrum quality. Adjusting metabolizable protein in close up diets did not appear to influence colostrum change.

Know your herd variables for goal setting and future evaluation of your farm's colostrum management. Apparent efficiency of IgG absorption (AEA) is the percentage of IgG in the colostrum as feed to the calf which are *actually absorbed* into the calf bloodstream. This number can be negatively influenced by elevated bacterial contamination or other calf related factors.



Colostrum Replacers are another tool available to farm managers. Use with caution as these products vary widely, and as always, read labels closely!

- Replacers can vary in nutrient and IgG concentration
- Be aware of the differences between replacers and supplements, and choose the appropriate tool for your situation
- A second dose per calf might be required
- Does not contain farm-specific antibodies

Always consider product cost and calf performance. A lower serum total protein cut point is associated with a poor TPI (4.9g/dl).

#### Take Home Messages

1. Colostrum is more than IgG
2. Revisit dry period management

# CORNELL CONNECTIONS

## Value of Manure Calculator Cell Phone App Now Available

Juan Carlos Ramos T Sanchez, Kristen Workman, Carlos Irias, & Quirine M. Ketterings,  
Cornell University Nutrient Management Spear Program, Pro-Dairy



Quantification of nutrients in manure is essential to ensure efficient resource management, maximize agricultural productivity, and minimize negative environmental impact. A Value of Manure Calculator cell phone app was developed to estimate the agronomic and economic fertilizer replacement value of manure. To use the app, users will need to enter (1) the percent solids, N, P, and K nutrient content from a recent manure analysis, (2) the implemented or planned manure application rate, (3) crop nutrient needs, and (4) fertilizer costs. The app will then return past and current N credits, P and K credits, the fertilizer replacement value of the manure. Once the land application cost per gallon of manure is added, the tool also calculates the land application cost per extra mile hauled and the break-even hauling distance and costs. The app uses manure N credits that are in line with Cornell's Nitrogen Guidelines for Field Crops in New York (2023).

### Calculator Access

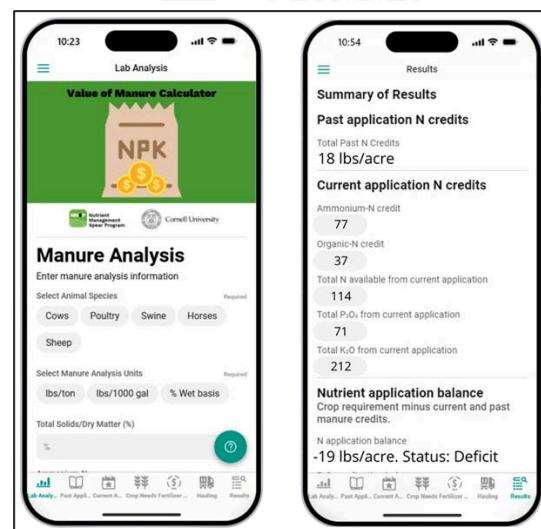
The Value of Manure app can be accessed at Value of Manure Calculator (<https://valueofmanure-nmsp.glideapp.io/>) with any browser or by scanning the QR code to the right. Once opened, the user will see the opening page of the calculator (below, right). The front-page shows, at the bottom of the screen, seven tabs: Lab Analyses; Past Application; Current Application; Crop Needs; Fertilizer Value; Hauling; and Results.



### Calculator User's Guide

Recently a User's Guide explaining what the app does and how to use it, was released. The guide walks the user through the different taps and explains in detail the following topics:

1. Entering a Manure Analysis
2. Calculating Nitrogen Credits from Past Applications
3. Calculating Current Year Manure Nutrient Credits
4. Entering Crop Needs
5. Entering Fertilizer Value
6. Calculating Break-Even Hauling Distances and Costs
7. Understanding the Results
8. Signing in to Save Results



The Value of Manure Calculator User's Guide can be accessed at the NMSP website by clicking on the following link: <http://nmsp.cals.cornell.edu/publications/extension/ValueManure2025.pdf>.

### Additional resources

- The NMSP Value of Manure Project website:  
[http://nmsp.cals.cornell.edu/NYOnFarmResearchPartnership/Value\\_of\\_Manure.html](http://nmsp.cals.cornell.edu/NYOnFarmResearchPartnership/Value_of_Manure.html).
- Instructional video on how to access and install the Manure Value Calculator on a cellphone:  
<https://www.youtube.com/watch?v=DRtdWrdFeok>

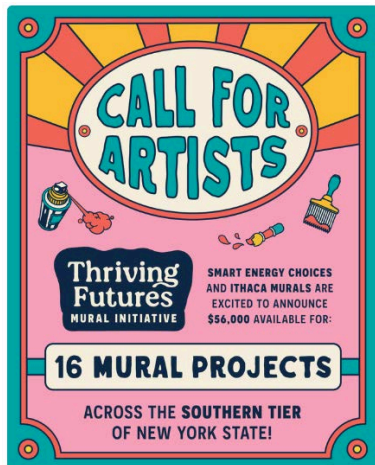


## Energy Corner

Sam Edel, CCE Community Energy Advisor



**Cornell Cooperative Extension**  
Smart Energy Choices — Southern Tier



### CALL FOR ARTISTS

Smart Energy Choices and Ithaca Murals are excited to announce a \$56,000 grant available for 16 mural projects across the Southern Tier of New York State.

Please share with artists who are passionate about justice and live in: Steuben, Schuyler, Chemung, Tompkins, Tioga, Broome, Chenango, and Delaware County.

We will be facilitating 1-3 "THRIVING FUTURES" themed murals in each of these counties. As you can imagine, Ithaca Murals is very connected with Tompkins County artists... but less so in the other areas. So please share with others to help this get into the hands of potential artists rooted in the other counties listed above.

Application Deadline: March 21, 2025

Awards of: \$5,000 and \$2,000 per project

## The Agritourism Brief

## Creating Compliance

Agritourism Project Work Team

### 1 NYS Definition

"activities conducted by a farmer on-farm for the enjoyment and/or education of the public, which primarily promote the sale, marketing, production, harvesting or use of the products of the farm and enhance the public's understanding and awareness of farming and farm life"

### 3 Examples

- U-pick & Christmas trees
- Tours, School Tours
- Corn mazes, hayrides, animal interactions (NOT a petting zoo)

Always engage in activities that meet the criteria of educational, promotional of agriculture & sale of farm products or experiences.

### 2 Permitting & Compliance

Ensure your operation complies with all regulations & obtains necessary permits, including:

- Signage & Handwashing
- Parking & Accessibility
- Safety & Employee Training

### 5 NY Safety in Agritourism Act

- Enacted in 2018, this legislation established enhanced protection for farm owners from liabilities associated with inviting the public onto their farms for agricultural tourism events & activities.
- It also provides guidance on signage, hold harmless language & other support.

### 4 Are You In An Ag District?

NY's Agricultural Districts Law was enacted in 1971. Its purpose: to encourage active farmland through a combination of incentives and protections. Are you enrolled? Check with the county Planning Office.

### 6 Ag Value Assessment

IF your agritourism operation exists on 7 or more acres, AND includes any of the following land uses: cropland, pasture, orchard, vineyard, sugarcorn, support land, or land under soil conservation programs, AND you profit >\$10,000/year from the sale of farm products, you MAY be eligible for an Ag Value Assessment.

### 8 Marketing

Develop a robust marketing strategy. Utilize online platforms, social media, and local partnerships to promote your offerings & create a strong online presence.

### 7 Signage & Permits

Make friends with the code enforcement and zoning board! Always check with them prior to making decisions on what size sign to order/install AND when considering hosting larger events. There may be special permits required.

And remember -- be a good neighbor!





# Nitrogen Credits from Manure

## Nitrogen in Manure

Animal manure is a rich source of all seventeen nutrients essential for plant growth and reproduction. In terms of nitrogen (N), there are two primary forms: (1) inorganic (ammonium) N, and (2) organic N (Figure 1). The two forms behave very differently and as a result, both sources should be considered when making manure N rate decisions.

This fact sheet provides an overview of both N sources in manure and describes how to credit N from manure to a crop.



Figure 1: Manure N consists of ammonium and organic N (modified from Klausner, 1997).

## Ammonium N in Manure

The inorganic N in manure is initially present in urine in the form of urea. Urea in manure is no different from urea in commercial fertilizer. It converts rapidly to ammonium when conditions allow. Although all ammonium-N could become plant available N, timing of application and the way in which manure is applied will determine how much of the ammonium N is expected to be captured, reflecting that ammonium is rapidly converted to ammonia gas. When manure is spread on the surface of the soil (especially high pH soils), ammonia enters the air or "volatilizes". Whenever manure is exposed to air on the barn floor, in a feedlot, in storage, or after spreading, N loss occurs as well. Testing of manure is essential to determine how much inorganic N could potentially be conserved and plant available. Samples should be taken while loading the

spreader or while spreading in the field for a good estimate of the nutrient value of the manure. For more information, see [Agronomy Fact Sheet #38](#) for more details on manure sampling.

Table 1 shows the estimated amount of ammonium N available for plant use for different application methods and timing. The table shows the benefits of manure incorporation shortly after spreading in the spring. For example, if manure contains 10 lbs inorganic N per 1,000 gallons, incorporation of 7,500 gallons per acre within 1 day in the spring can replace about 50 lbs of fertilizer N.

Table 1: Estimated ammonia-N losses as affected by manure application method (modified from Klausner, 1997).

Manure Application Method	Ammonium N utilized by the crop (%)
Injected into a growing crop	100
Spring injected without a growing crop	65
Spring incorporated within 1 day	65
Spring incorporated within 2 days	53
Spring incorporated within 3 days	41
Spring incorporated within 4 days	29
Spring incorporated within 5 days	17
No incorporation or injection	0
Injected or incorporated in the fall	0



Figure 2: Surface application of manure without incorporation will result in rapid loss of inorganic N from the manure.

## Organic N in the Manure

The feces in manure contain organic N that is more stable. The organic N breaks down over time, some the first year after application, some in the following years. Repeated application to the same field results in an accumulation of a slow-release manure N source.



A decay or mineralization series is commonly used to estimate the rate of N availability from stable organic N over the years following application. A decay series of 35, 12, and 5% in years 1, 2, and 3 is used to estimate the rate of decomposition of organic N in liquid (<18% dry matter) dairy manures in New York (Table 2). This sequence of numbers means that 35% of the organic N is mineralized and potentially taken up by the growing crop during the year the manure was applied, 12% of the initial organic N application is mineralized and taken up during the second year, and 5% is mineralized and taken up in the third year after the application.

There is evidence that manure containing large amounts of bedding may mineralize at a slower rate than fresh manure so the estimated availability of N during the year applied is reduced from 35% to 25% when the dry matter content of manure exceeds 18%. Nitrogen fertilizer recommendations from Cornell University need to be adjusted for the release of N from previous years' applications. For more detail, see [Nitrogen Guidelines for Field Crops in New York](#).

Table 2: Decay series for stable organic N in manure by animal type. A "Next Year" release rate of 12% indicates that an estimated 12% of the organic N applied in the manure is expected to be utilized by the crop a year after application. Similarly, 5% signals that 5% of the organic N applied becomes available two years after the initial application.

Source	Dry matter (%)	Release rate for organic N in manure (%)		
		Present year	Next year	In two years
Cows	<18	35	12	5
Cows	≥18	25	12	5
Poultry	<18	55	12	5
Poultry	≥18	55	12	5
Swine	<18	35	12	5
Swine	≥18	25	12	5
Horses	<18	30	12	5
Horses	≥18	25	12	5
Sheep	<18	35	12	5
Sheep	≥18	25	12	5

### Practical Applications

- Base manure application rates on field histories (rotation and manure), soil characteristics and environmental conditions.
- Minimize fall and/or winter manure application on good grass and/or legume sods that will be rotated the following spring.
- Conserve ammonia. Losses can either be reduced by immediately incorporating after spreading in the spring or directly injecting manure as a sidedress application into a growing crop.

- Established mixed legume-grass stands with more than 50% grass are better alternatives for manure application than fields rotating into a perennial legume seeding or more legume-rich mixed stands.
- When legumes represent more than 50% of the established legume-grass stand, it is recommended to limit total application rates to no greater than 150 lbs of crop available N per acre or 85% of the estimated N removal per acre with harvest.
- While established stands could receive higher rates of manure, depending on the actual manure analysis, applications that exceed 4,000 gallon per acre per cutting could lead to burn, smothering, and/or salt injury to the stand, especially when applications are delayed beyond 3-4 days after cutting. For more details, see [Considerations for Manure Use for Soybean and Perennial Legume Production in NY](#).

### Additional Resources

- Cornell Nutrient Management Spear Program Agronomy Fact Sheets #18: Manure spreader calibrations; #38: Manure Sampling, Handling and Analyses; #53: Manure Cost, Value and Time Management Calculator; and #122: Reading and Interpreting Dairy Manure Analyses. <http://nmsp.cals.cornell.edu/guidelines/factsheets.html>.
- Wilson et al. (2022). Recommended Methods of Manure Analyses, 2<sup>nd</sup> edition. University of Minnesota Twin Cities: <https://conservancy.umn.edu/handle/11299/227650>.
- NMSP Value of Manure Calculator User's Guide: <http://nmsp.cals.cornell.edu/publications/extension/ValueManure2025.pdf>.
- The NMSP Value of Manure Project website: [http://nmsp.cals.cornell.edu/NYOnFarmResearchPartnership/Value\\_of\\_Manure.html](http://nmsp.cals.cornell.edu/NYOnFarmResearchPartnership/Value_of_Manure.html).

### Disclaimer

This fact sheet reflects the current (and past) authors' best effort to interpret a complex body of scientific research, and to translate this into practical management options. Following the guidance provided in this fact sheet does not assure compliance with any applicable law, rule, regulation or standard, or the achievement of particular discharge levels from agricultural land.

For more information



**Cornell University**  
**Cooperative Extension**

Nutrient Management Spear Program  
<http://nmsp.cals.cornell.edu>

Quirine Ketterings, Juan Carlos Ramos Sanchez, Kirsten Workman  
(Greg Albrecht, Karl Czymmek, Shawn Bossard)

2025 (updated from 2005)





**WE WANT YOUR  
FEEDBACK**

## Rye Grower Survey

Help Identify Breeding Priorities

The Dr. Virginia Moore Lab at Cornell University is surveying farmers to better understand the many ways farmers are growing and using cereal rye, including for grain, forage, and as a cover crop. Farmers are invited to take part in their survey, which will help identify important breeding priorities for different end uses



### Cornell Cooperative Extension Delaware County

Resource Center  
34570 State Hwy 10, Suite 2  
Hamden, NY 13782-1120

**FIRST CLASS MAIL**