May/Jun2025

AG NEWS

Cornell Cooperative Extension
Delaware County

CAPTURING THE FULL VALUE OF YOUR MANURE

-PAUL CEROSALETTI, MS, CCA, PAS

Livestock manure represents a great source of essential plant nutrients to enhance crop productivity. These include the benefits of nitrogen, phosphorus potassium and sulfur, which we can quantify based on analysis and their fertilizer value. More recent research at Cornell University is also beginning to quantify other crop benefits believed to be tied to enhancement of soil microbial activity. These less tangible – but very real – manure contribute a fertilizer value beyond that of the essential plant nutrients.

There are a number of key strategies to capture the full value of livestock manure. The first is to start by knowing the crop nutrient needs and how much the soil supplies. A soil test every three years will quantify the current soil nutrient supply. Fields with low to medium soil test phosphorus (P) and potassium (K) macro nutrient levels are the fields where growing crops will respond best to manure nutrients. Fields with high soil test P and K, (likely fields with a heavy or long manure and/or fertilizer history) already can supply crop needs without additional P and K supplied by manure. Therefore, less of the fertilizer value of manure applied to these fields is realized.

FIGURE 1

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

To a lesser extent, these rules of thumb are true for the nitrogen (N) fraction of manure. Nitrogen is the nutrient required in the greatest quantity for crop growth outside of water. Additionally, nitrogen is a more dynamic nutrient.

Approximately 50% of the N produced in livestock feces and urine is in the ammonia fraction, and thus volatile, meaning it is

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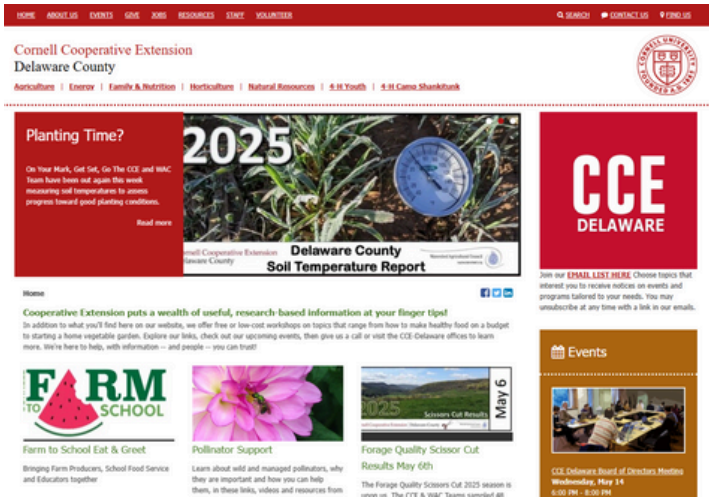
Updates:



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
- *Kim Holden,*
  Sr. Administrative Assistant

Farm Business Management & Ag Economic Development:

- Desiree Keever, JD

CCE is Growing in the New Growing Season!

We have been at work ramping up to support you!

- Website: You will notice big changes, go check it out! It has been redesigned to be more attractive and easier to navigate.

  The Ag Page contains all the resources you have always relied on, with some additional tools we think you will find helpful!

- Programming: Programming offering are continuing to grow to support additional sectors of the industry!

- Staffing: We are progressively in filling positions! The next time you stop in the office, you will be greeted by some new faces! Introductions coming soon, visit the website for the latest news!

Dairy Producers, Got Stress?

We want to hear from you! The NY Center for Agricultural Medicine & Health, in conjunction with CCE Delaware are hosting focus groups to better understand the stressors in the dairy industry. This study is focused on engaging farmers on health issues, by exploring evolving socio-cultural and economic challenges NY dairy farmers face and how these impact their wellbeing. This information will be used to inform policy makers and legislators on how change in the dairy sector is impacting farmers - additionally, this information will be used to help support the development of supportive interventions to improve farmer wellbeing amidst much change in agriculture. Your views are essential in understanding how this is experienced in your daily life. We invite you to share a meal & your perspectives and engages with your industry colleagues. Call Desiree at 607.865.6531 for information or register for a brunch session here:

- Monday, June 9th 10am-12pm @ https://reg.cce.cornell.edu/DairyStressor6-1_212
- Thursday, June 12th, 11am-1pm @ https://reg.cce.cornell.edu/DairyStressor6-12_212
- Monday, June 16th, 10am-12pm @ https://reg.cce.cornell.edu/DairyStressor6-3_212

Upcoming Programs

Tuesday, May 20, 2:00-3:00 pm

Camp Shankitunk, 2420 Arbor Hill Road, Delhi NY

Take advantage of a **new market**! Join us to learn about bringing **local foods** to our school menus! This event is designed to give the tools to school food service professionals to purchase and prepare local foods, for farmers to **navigate the sales process,** and for educators to learn how to incorporate school gardens and agriculture into their curriculums.

Register @ https://tinyurl.com/F2SEatnGreet, using the QR code above or email Desiree Keever at dnk2@cornell.edu
by May 15h

Produce Washing and Packing Facility Tour

Tuesday, June 3, 10:00am-12:00 pm
Berry Brook Farm
114 Back River Road
Hamden, NY 13782
Lunch included, no cost to attend

Join us for a tour at Berry Brook farm, featuring their certified organic vegetable operation. The tour will highlight the process of efficiently delivering quality vegetables to market from harvest through a demonstration of the processes utilized in their wash and pack facility.
Register at: https://reg.cce.cornell.edu/ProduceFacilityTour_212

This program is supported by the USDA,
NIFA Award #: 2022-70020-37567

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.

Plan Ahead

Keep an eye out for these upcoming events:

- Summer Pasture Walks
- Maple Update at Shaver Hill in July

Stay Connected:
- ccedelaware.org
- Follow us on Facebook: Cornell Cooperative Extension of Delaware County: Agriculture
- Email: delaware@cornell.edu
- Phone 607.865.6531

CAPTURING THE FULL VALUE OF YOUR MANURE

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subject to be lost to the atmosphere if not incorporated into the soil. The other 50% of the N in livestock manure is in an organic (meaning bound to carbon molecules) fraction and is stable (not subject to volatilization). However, this fraction becomes available slowly through mineralization over three years, and at best only about 50% of the organic fraction ever becomes available.

While the organic N fraction of manure is a great source of slow-release N, there is a tremendous opportunity to capture more of the N fertilizer value of manure, by incorporating manure into the soil using convention tillage right after manure spreading or using manure injection. There is also much less risk of P and K loss to surface water when incorporating or injecting manure. Figure 1 shows the ammonia N fertilizer value conserved for several manure application methods and depicts the benefits of immediate incorporation or injection.

FIGURE 2

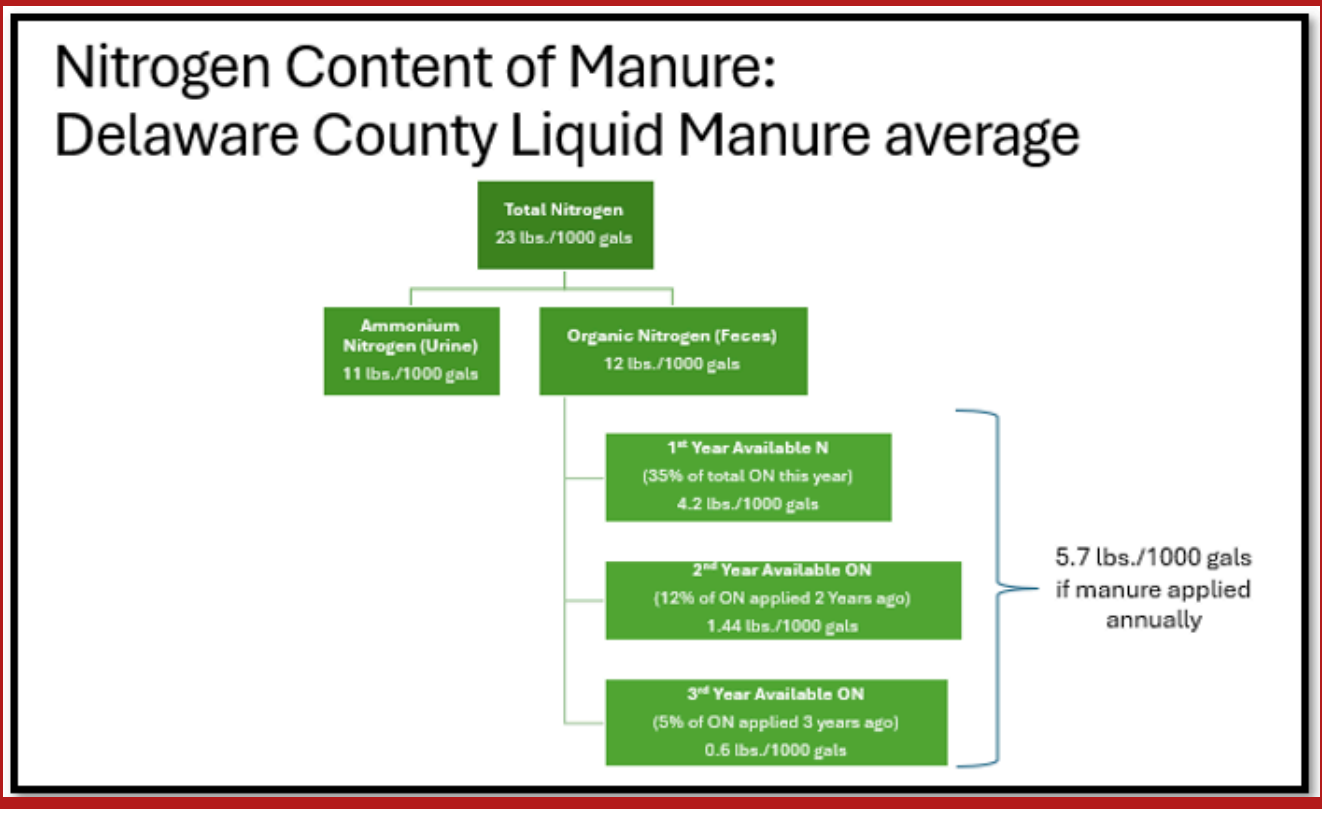

Figure 2 depicts the nitrogen fractions of manure for an average of 13 farms in Delaware County which have liquid manure storage. For each 1000 gallons of 'average Delaware County liquid manure' applied annually on a field, over the course of three years it will supply 5.7 lbs of organic nitrogen. If the farm can inject or immediately incorporate the manure, it nearly doubles the nitrogen value. A typical Delaware County liquid manure application rate of 5000 gallons per acre captures an additional 55 lbs of N per acre, a significant crop benefit! With the availability of coulter disk manure injection in Delaware County through Albanos Precision Application, we now have a reliable and efficient means to capture this N fertilizer benefit!

PUTTING KNOWLEDGE TO WORK

Some Things for the Grazing Manager to "Ruminate" on this Spring

By Rich Toebe, CCE Sr. Resource Educator, MS, PAS
NYC Watershed Agricultural Program

Winter has passed, leaves are starting to unfold on the trees, and the recent rains have jump started our pasture growth. Here are a few things to 'ruminate' on as you get set to turn your animals out to pasture this spring.

Are my fences and water systems in good repair? Let's start with this easy but important question. Prior to turnout you should check your fences and water lines. This past winter's heavy snows took a toll on the fences. Any residual water remaining in seasonal water lines may have resulted in burst pipes or valves. Taking the time to check these out before letting the animals out will save you from having to chase animals or unknowingly shorting them on water.

How tall should the grass be before we turn out the livestock? This is not such an easy question to answer as it really is a balancing act between turning them out too early resulting in lost production for the year or turning out too late and sacraficing forage quality because the pasture is getting ahead of you. At a minimum, you should wait until the ground has firmed up and the grass is at least 3-4" tall. If you can wait longer, you will increase your total seasonal yield. Research in Wisconsin showed that if you wait to turn the animals out in the spring until the grass is 10-12" to graze rather than 3-4" to graze, your total seasonal yield in that pasture would increase by 500 pounds of dry matter/acre. Remember that the plants have just survived a long winter. During the winter, the plants are still respiring and are now at a carbohydrate low in their roots. They need green leaf tissue to photosynthesize and rebuild their strength and plant vigor. If you graze this too early and too much, you can really set the plant sward back.

What about winterkill or any bare spots in the pasture? If you have a thin stand or experienced some winterkill, it may be an opportunity to drill in some seed to improve both the quality and productivity of the stand. If the pasture is too rough or rocky for a drill, you can add legume seed to loose mineral (about 5 lb. of seed to 50 lb. of mineral) and feed this to the cattle the day **before** turning the animals into the pasture. Alternatively, you can add some grass seed or legume seed to the manure spreader, provided the field is an acceptable location to spread. You may want to plan on grazing this area again before the grass get too high with a high stock density/short duration grazing event taking down the grass to a 4" height. This will help the legume get established.

Should I add Nitrogen fertilizer? We all know that adding nitrogen fertilizer greatly boosts grass yield; and that the best time to add nitrogen is traditionally at spring green-up and after a grazing event or hay making event. But, if you have plenty of pasture in May and early June, you may want to skip that first nitrogen fertilization. Instead wait and put on nitrogen fertilizer just before summer when you are entering a period where you could use additional pasture.

Continued on the next page

Some Things for the Grazing Manager to "Ruminate" on this Spring continued:

Will my animals be getting too much protein? Will I have high MUN values in my milk meaning lost production? Protein levels in early pasture can be very high and ultimately expressed as high Milk Urea Nitrogen (MUN). This protein is highly degradable in the rumen and is not efficiently used by the rumen microbes. Excess protein can impact the cow in the following ways: fast passage of feed, loose manure, milk fat suppression, loss of body condition, and increased excretion of nitrogen. These all come at an energy cost to the cow, reducing her milk yield and reproductive performance. Some strategies that may help include: grazing pastures that went into winter with taller stands of grass first, avoiding adding nitrogen fertilizer at green-up, delaying grazing until the grass is more mature, making low protein hay available to the cows on pasture, feeding grains that supply readily fermentable carbohydrates to "capture" some of the ammonia produced in the rumen, or adjusting the amount and type of protein being fed in the barn.

How will my spring grazing decisions impact my summer grazing potential? Remember every decision has future consequences. The timing and intensity of your initial grazing in spring will set the stage for the rest of the summer. Similarly, your grazing decisions in the fall impact the plant's carbohydrate reserves going into winter. Research shows that when 50% of the grass is grazed off, only 2-4% of the grass roots stop growing; at 60% removal, 50% of the grass roots stop growing; and at above 75% defoliation, almost 100% of the roots stop growing as the plant expends carbohydrates to grow new leaf. In summary, celebrate that spring has arrived and take some moments to think about your decisions. Observe how your animals are performing and be ready to make some adjustments.

CORNELL CONNECTIONS

Lime Guidelines for Field Crops in New York

Adapted by April Wright Lucas, PAS, CCA, Precision Feed Managment Specialist, NYC Watershed Agricultural Program from the Cornell Publication: Lime Guidelines for Field Crops in New York, written by Quirine M. Ketterings, W. Shaw Reid, and Karl Czymmek

Managing soil pH is essential for productive crops. In New York, most agricultural soils are naturally acidic and benefit from lime applications to maintain ideal growing conditions.

Why pH Matters

Soil pH affects nutrient availability, microbial activity, and root growth. Most crops thrive at a pH between 6.0 and 7.0. Below that, yields drop and fertilizer becomes less effective.

When and How to Test

- Test soil every *3 years*—more often if uncertain about past management.
- Use *10–15 subsamples* per field (≤15 acres).
- For no-till fields, test *surface (0–1") and 0–6" depths separately*.
- Sample at the same time of year for consistency.

What is Lime?

Lime is a material (often calcium carbonate) that raises soil pH. Types include:

- *Calcitic Lime* ($CaCO_3$)
- *Dolomitic Lime* ($CaCO_3 + MgCO_3$)
- *Burned or Hydrated Lime* – fast-acting but short-lived

Note: Gypsum is not a liming agent—it adds calcium but doesn't affect pH.

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Quality Counts

Look for these two indicators:

- *CCE (Calcium Carbonate Equivalent)* – how strong the lime is.
- *ENV (Effective Neutralizing Value)* – accounts for strength and fineness.

Fine particles = faster results. Always check the label.

How and When to Apply

- *Apply 6+ months before* planting legumes if pH < 6.0.
- For large applications (>4 tons/acre), split into two passes.
- Avoid more than *6 tons/acre* in a 4–5 year rotation.
- Liming after corn harvest can prep fields for alfalfa or clover.

Need lime for a small garden? Multiply tons/acre by 50 to get pounds per 1,000 sq ft.

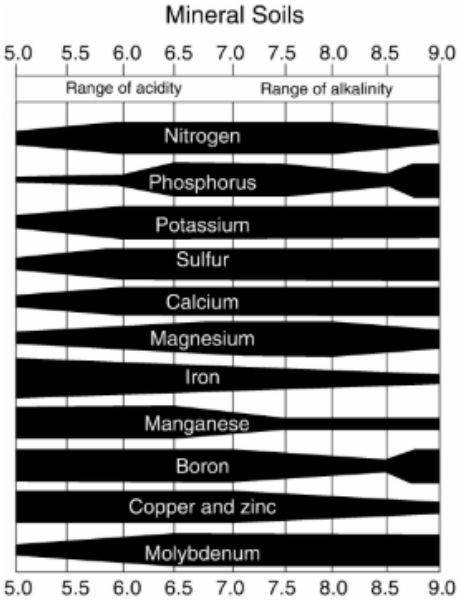

Figure 1: The relative availability of elements essential to plant growth a different pH levels for mineral soils

New York Requirements

Agricultural lime must meet:

- *≥60% CCE*
- *≥80% passing a 20-mesh sieve*
- *≥30% passing a 100-mesh sieve*
- *ENV ≥36%*
-

Learn More

- Soil pH & Lime Fact Sheets: nmsp.cals.cornell.edu

Healthy soil starts with the right pH. A timely lime application can protect your crop investment and boost yields.

Energy Corner

Cornell Cooperative Extension
Smart Energy Choices — Southern Tier

Residential and Commercial Guide to Energy Savings

There are a number of resources for residential homes, small businesses, non-profits and multi-family building owners to help reduce energy use and carbon emissions to save money and the planet! Through the NYSERDA Regional Clean Energy Hub, our Community Energy Advisors offer free energy education and support. They can help residents access incentives for home and business energy upgrades and provide guidance through the process.

Your Guide to Energy Efficient Agriculture

Ag Energy NY provides free consultations and can help you begin the energy assessment process. NYSERDA covers the cost of an energy assessment for farms in New York State making $100,000/ year in gross sales or more. The assessments cover lighting and energy efficiency upgrades.

Reach out to Sam Edel, Delaware County's Community Energy Advisor for more information
(607)266-0833 x3
se379@cornell.edu

Applications Now Open

Our youth are the next generation of business developers, agriculture, food, and technology leaders. With the hope of inspiring and investing in the future of food, select middle and high school youth will be chosen to attend the Grow-NY competition. Outstanding students will be selected to pitch their business idea during the competition to a panel of judges.

The Grow-NY competition takes place in November each year. Information about your current business plan or business idea will be required to be considered for this experience. One winner will be selected amongst the pitches by a panel of judges. The top pitches will be awarded a cash prize. To enter & learn more: https://newyork.agclassroom.org/programs/grow-new-york/

Cornell Cooperative Extension
Delaware County

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