

North Country Ag Advisor

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Cornell Cooperative Extension North Country Regional Ag Team

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Our Mission

"The North Country Regional Ag Team aims to improve the productivity and viability of agricultural industries, people and communities in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex Counties by promoting productive, safe, economically, and environmentally sustainable management practices, and by providing assistance to industry, government, and other agencies in evaluating the impact of public policies affecting the industry."

North Country Ag Advisor

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"The North Country Regional Ag Team is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex counties."

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Field Crops and Soils Fertilizer Prices Trend Upward in Late 2021... and Into 2022? By Kitty O'Neil

Retail fertilizer prices have been on the increase since earlier this year with some materials increasing by more than 70% since September 2020. Projected fertilizer costs for 2022 are for near record-high levels.

Fertilizer prices have always been somewhat volatile, shifting with energy prices and crises around the world, both natural and manmade. Previously, fertilizer prices hit all-time highs in 2008 after a sharp rise beginning in 2006. Fertilizer prices returned to lower levels in 2009, partly due to the 2008 financial crisis, but rose again into 2013 and 2014. We are seeing an increase now that began in early 2021. Trends in mixed and nitrogen fertilizers are shown in Figure 1, from an



August 2021 article on farmdocDAILY, a weekly farm economics publication from the University of Illinois. Figure 1 uses indexed fertilizer data published by the USDA. Recent trends are shown in more detail in Figure 2, using data published in recent Progressive Farmer articles depicting 8 weekly fertilizer prices tracked by DTN from April 2020 through September 2021. All 8 prices began to rise in early 2021 and most continue to rise this week. Since January 2021, urea has risen 55%, from \$368 to \$572. A per-ton price of \$572 for urea is equivalent to \$0.55 per lb of N. UAN28 and UAN32 have both risen even more dramatically; UAN28 is up by 82% since January 2021 and UAN32 is up 71%. Their unit prices currently stand at \$0.68 and \$0.67, respectively. Local and Northeast prices may well vary slightly from these figures; they are often higher, but overall trends are similar. Potash, MAP, and DAP prices are also up this year. Potash is up 62% from January to \$598 per ton or \$0.498 per lb of K₂O. MAP and DAP are up 43% and 46%, to \$776 and \$702 per ton or \$0.746 and \$0.763 per lb of P₂O₅ respectively. For a corn crop grown on a soil management group 2,3, or 4 soil with medium fertility and no sod or manure history, about \$125-130/ac in fertilizer inputs would be required at today's prices. Across the board, prices today are about 58% higher than fertilizers purchased last spring. Prices are expected to continue upward through Spring 2022 to near record highs, according to those Illinois economists.



These higher fertilizer prices make manure resources and crop rotation a lot more valuable and worth managing as efficiently as possible. The biggest cost in the fertilizer budget is N. Farms with accurate, up-to-date soil samples and sufficient manure storage to start the spring with full pits and maximum inventories will be able to take maximum advantage of manure N and maximum fertilizer savings. Fall and winter manure application is much less efficient as most N is lost to the environment. Those same soil management group 2, 3, and 4 soils mentioned in the previous paragraph but with N credits from manure and first year sod would need about \$70/ac worth of fertilizers at today's prices and will be more expensive by spring. Accurate analysis and application of manure and optimal crop rotation become much more valuable as fertilizer prices rise. The Illinois researchers mentioned above are expecting well-above average fertilizer costs for 2022, resulting in crop budgets well above those for the 2009to-2020 time frame.

Additional Resources:

• Schnitkey, G., N. Paulson, C. Zulauf, and K. Swanson. "2021 Fertilizer Price Increases in Perspective, with Implications for 2022 Costs." farmdoc daily (11):114, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, August 3, 2021.

• Quinn, R. Sept. 2021. DTN Retail Fertilizer Trends - DAP Fertilizer Tops \$700 Per Ton for First Time in a Decade. DTN / Progressive Farmer. https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/09/22/dap-fertilizer-tops-700-per-ton-time.

Thomas-Murphy, J., et al. 2021. Cornell Guide for Integrated Field Crop Management. Cornell University.



Cornell Cooperative Extension

Eastern NY Commercial Horticulture Program



SAVE THE DATE: October 5, 2021 1:30 to 4:00PM Willsboro Research Farm 48 Sayward Lane, Willsboro, NY 12996

Join this live, in-person field walk and talk about cover crops at Cornell University Willsboro Research Farm, October 5, 2021. The Essex County Soil and Water Conservation District and the Cornell Cooperative Extension's Eastern NY Commercial Horticulture and Field Crop team will be offering an educational demonstration, discussion, and plenty of how-to details at this field event focused on the use of cover crops. The event will be rain or shine and all applicable COVID-19 precautions will be followed.

This event will include:

- Details on using cover crops for weed suppression strategies in commercial vegetable operations, by Elisabeth Hodgdon, CCE
- Demonstrating the 12ft no-till drill recently purchased by the Essex County Soil and Water Conservation District as a rental to local farmers
- A farmer speaking from personal experience about issues and benefits of using cover crops with vegetable crop rotations in Essex County, NY
- Doughnuts and cider refreshments

No registration or fee. For more information about the event, please contact Myra Lawyer of the Lake Champlain Basin Program, NY agronomist, 518-897-1387 or <u>myra.lawyer@dec.ny.gov</u>.



CCE PMEP's Outreach Arm Launches a New Name and Website

PRESS RELEASE

Source: https://psep.cce.cornell.edu/announcements/

The outreach arm of Cornell Cooperative Extension's Pesticide Management Education Program (PMEP) has always operated under the name of the overall program. However, because PMEP also includes the Pesticide Sales and Use Reporting (PSUR) group, we are adopting the name **Cornell Co-operative Extension Pesticide Safety Education Program (CCE-PSEP)** for our outreach arm to better reflect its mission. PMEP will continue to exist as an umbrella term for both PSUR and CCE-PSEP.



CCE-PSEP is dedicated to delivering objective, science-based pesticide education that promotes the proper use of pesticides, to ultimately help reduce risks to applicators, consumers, and the environment. The new name will let our constituents know to come to us for pesticide *safety* training and information and for general pesticide questions. As the new name implies, we have expertise in identifying and reducing pesticide risks to people and the environment, including the regulation and proper use of pesticides. We develop pesticide applicator certification training manuals, host on-demand online applicator recertification training courses, present and host live pesticide safety/informational talks to applicators and the public, publish the Cornell Crop and Pest Management Guidelines, and answer pesticide-related questions from any person or organization.

In conjunction with the new name, **CCE-PSEP has launched this new website**: psep.cce.cornell.edu. Please explore this site to learn more about our program, the resources we offer, and how to contact us.

We look forward to continuing to serve NYS applicators and citizens by providing pesticide safety information and training and we hope to forge new connections as we address the changing needs in NYS in the future. For questions about CCE-PSEP, please reach out to our program Director and Educator Mary Centrella at mlc344@cornell.edu.



"Interseeded Cover Crops" Field Meeting Wednesday, October 13th

1:00 PM Happy Haven Farm 249 Thompson Road, Mooers, NY



Come check out our field trial of 5 different multiple species cover crops inter-seeded into standing corn in early July

- 1. Peas, Oats, Radish
- 2. Peas, Radish
- 3. Ryegrass, Clover
- 4. Ryegrass, Radish
- 5. Triticale, Clover, Radish
- Cornell Cooperative Extension North Country Regional Crop Specialist Kitty O'Neil will talk about corn herbicide considerations while planning for inter-seeded or fall cover crops
- Clinton County Soil & Water Conservation District Technician Jillian Zajac will talk about soil health and demonstrate the benefits of notill farming and cover crops using our rainfall simulator.
- Information on the District's Cover Crop Program as well as other cost share programs will be provided

Registration is appreciated but not required. To register, please contact the Soil & Water office at (518)561-4616 ext 3 or email <u>clintoncountyswcd@ccsoil-water.com</u>



NORTH COUNTRY REGIONAL AG TEAM

Dairy

Considerations for Timely Euthanasia in Calf Care

By Alycia Drwencke and Betsy Hicks (CCE SWNY Dairy, Livestock and Field Crops Team & SCNY Dairy and Field Crops Team)

Calf care can be a tricky and frustrating task on farms. When everything runs smoothly, calves can be a source of joy for the caregivers. However, when calves are sick or experience an injury, particularly if recovery is unlikely, stress for both the animal and caregiver increases. This highlights the importance of preventing illness and injury in calves, but unfortunately, preventative measures aren't always successful. When a calf does become sick or injured, farms should work quickly to identify the problem and treat it accordingly or perform timely euthanasia if the prognosis is poor.

When a problem arises with a calf, physical and behavioral measures can be used to determine and monitor the severity of the situation. These same measures may also be used to evaluate the prognosis. Indicators of health can include hydration, feed or milk intake, amount of time spend lying down, posture such as arched back or droopy head, vigor scores, and so on. A calf that is identified as sick or injured should be checked for signs of distress, which include increased respiration rate, body temperature, heart rate, paddling/thrashing, or non-ambulatory status. Calves in distress may need to be euthanized immediately to minimize suffering for the calf and caregiver. If the cause of illness is unknown, performing a necropsy after euthanasia may be useful for farms. This <u>resource</u> from Colorado State University is extremely useful in performing on-farm necropsies.

While the decision to euthanize an animal (particularly a calf) is extremely difficult, it is also important to make the decision in a timely manner. According to research, 95% of preweaned calf mortality on dairy farms in the U.S. occurred without euthanasia in 2014 (Walker et al. 2019). This is a concern for the welfare of the calves, the caregivers, and public perception. Within the dairy industry, there is a need to focus more on timely euthanasia, especially in pre-weaned calves. While the decision to euthanize can be extremely difficult to make, having established protocols on-farm can help alleviate some of the stress and guesswork of when to perform timely euthanasia. The emphasis here should be on the timely aspect. If an animal needs to be euthanized, reducing the amount of time they spend suffering is crucial. We have put together a "Euthanasia Decision Tree" that can help guide a farm when creating protocols to make the best



Photo credit: CCE NCRAT.

decisions for calves in their care. It can be accessed at: <u>https://cornell.box.com/v/criticalcalfcare</u>.

Several things should be kept in mind when euthanasia is performed. First, only trained personnel should perform the procedure, and they should do so as soon as the decision is made. Second, during the euthanasia, only an American Veterinary Medical Association (AVMA) approved method should be used. For dairy calves, these include three approved methods. 1) An intravenous (IV) administration of a lethal dose of a barbiturate or barbituric acid, 2) gunshot using an appropriate firearm, ammunition, and anatomic site, or 3) non-penetrating captive bolt can be used for the euthanasia of neonates and calves less than 2-3 months of age. After the procedure has been performed, calves should be checked for signs of life, and a second method used if needed. Farmers and calf caregivers should request training from their veterinarian on the method they choose, as well as how to monitor for signs of life after the procedure.

Finally, don't overlook the toll that performing euthanasia can have on the humans involved. It's important to provide a supportive environment to promote the mental health of

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caregivers performing euthanasia, and to rotate those responsibilities among trained employees if necessary.

Euthanasia can often be viewed as a form of failure in caregivers, making it emotionally straining to both make the decision and perform euthanasia. This emotional strain can result in pushing off the decision to euthanize an animal, even if it's the most appropriate next step.

Additionally, farms should have a protocol in place for a severe disease outbreak on their farm which may result in mass euthanasia or mortality. This protocol should include contacting your local and state veterinarians, the plan for carcass disposal, and how other animals onfarm will be protected along with the physical and mental health of humans. Risk factors for disease outbreaks include exposure to older animals, poor cleanliness or ventilation, damp bedding, crowding, and inadequate colostrum or nutrition. Especially when disease is present, humans working with sick calves should wear gloves, wash their hands regularly, and avoid touching their face to reduce the risk of contracting a disease that can pass between them and the calf.

Even while farms work hard to promote calf health, illness and injury are bound to happen from time to time. To those who care for calves, making the final decision of euthanasia can take a toll and it's important to account for the mental strain of making the decision as well as the procedure. When these situations arise, it's important to be prepared and have protocols in place to

promote the welfare of both calves and caregivers.





For more information on calf care and troubleshooting, check out the CCE webinar series "Critical Calf Care" at: <u>https://www.youtube.com/watch?</u> <u>v=5Umb3bpBXO4&list=PLcUCF1v3nnnk9NDEXDaMZ-</u> <u>XKYOWWK0_to</u>



www.cals.cornell.edu/pro-dairy/ events-programs/regional-programs

Cornell Cooperative Extension

Transition Cow Tuesdays Transition Cow Management Webinar Series

Tuesdays from Nov. 2 to Dec. 14, 2021 12:30-1:00pm

These webinars are short and to the point, just 30 minutes. Grab your lunch and join us.

Have you...

...been working with the farm transition cow program but want to know more about the how, what and why?

....wanted to improve the transition cow performance of your herd but need to know where to start?

...wanted to increase the skills you bring to the farm or your farm employer?

...been wondering where you'll find the time to attend a course or workshop?

If so, this webinar series is designed for you.

Dates and Topics:

Nov 2 - Transition Cow Nutrition This session discusses why the transition diet has a tremendous impact on cow health and milk production, and how to ensure adequate nutrition is supplied at each phase of transition.

Nov 9 - Feeding the Transition Cow The mechanics of providing feed in conjunction with transition cow behavior is a crucial aspect in providing adequate nutrition. We'll discuss factors in feeding management during this session.

Nov 16 - Selective Dry Cow Therapy Learn how dry cow therapy impacts transition cow management. We will discuss the basics of selective dry cow therapy. Nov 23 - Facility Considerations Housing can make or break a cow's transition period and her next lactation. Both her physical and behavioral needs will be discussed.

Nov 30 - Calving

Parturition is critical step in transition. This session will discuss the basics of cow behavior, calving assistance, and physiology.

Dec 7 - Post Calving Monitoring This session will outline the steps for monitoring cow health post calving.

Dec 14 - Evaluating Transition Management

This session will cover Dairy Comp items to track and measure success of the transition program.

Register:

This program is available at no cost, thanks to the generous support of our industry sponsors. Preregistration is required.

https://cornell.zoom.us/webinar/register/WN_uQV9ZVpQQXtxWspcLqKfq

Presenters:

Tom Overton, PhD, Professor of Dairy Management, Chair of the Department of Animal Science at Cornell University

Daryl Nydam, DVM, Faculty Director, Atkinson Center for Sustainability, Dept of Population Medicine and Diagnostic Sciences, Cornell College of Veterinary Medicine

Rob Lynch, DVM, Cornell PRO-DAIRY Program

Judy Moody, Agricultural Resource Management Specialist, Dairy One

Margaret Quaassdorff, CCE NWNY, Regional Dairy Specialist

David Balbian, CCE CNY Regional Dairy Specialist

Lindsay Ferlito, CCE NNY Regional Dairy Specialist

Casey Havekes, CCE NNY Regional Dairy Specialist

Betsy Hicks, CCE SCNY Regional Dairy Specialist

Register once for access to all webinars.



Cornell Cooperative Extension

Healthy, Hardy, Heifers!

A virtual series for managing heifers post-weaning to calving

CCE Regional Ag Teams are excited to offer this NEW heifer series! Join us <u>VIRTUALLY</u> for an 8week series on heifer management topics across post-weaning to calving! This series will be offered virtually via Zoom every Friday starting October 1st, 2021, at 12:00pm EST. Sessions will be ~30-45 minutes in length, with a question period at the end.



Registration:

https://scnydfc.cce.cornell.edu/event.php?id=1656

This program is offered at NO COST thanks to our generous sponsors!

For registration help/questions please contact: Donette Griffith, dg576@cornell.edu / 607-391-2662

Sessions offered online (via Zoom) at 12:00pm EST

Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities.



Fridays at 12:00-12:45pm EST

October 1 – Series Kick-Off Murilo Carvhalo, Holstein Canada

October 8 – Transition After Weaning CCE NCRAT Dairy Specialists

October 15 – Pre-Breeding Comfort and Nutrition CCE NCRAT and SCNY Dairy Specialists

October 22 – Hoof Health Dr. Dorte Doepfer, UW Madison

October 29 — Repro Strategies Dr. Julio Giordano, Cornell

November 5 – Bred Heifers Dr. Tom Tylutki, AMTS

November 12 – Pre-calving Nutrition Dr. Mike van Amburgh, Cornell

November 19 – Pre-calving Comfort and Facilities Dr. Katy Proudfoot, UPEI

Forage Particle Size Matters!

By Casey Havekes

As a result of a transition cow feeding management study that I've been working on the last few months, I've had the opportunity to intensely monitor forage particle size in both the lactating and dry cow rations on several farms across the North Country. In closely paying attention and documenting TMR particle distribution using the Penn State Particle Separator (aka shaker box), I wanted to highlight the importance of particle size and physically effective fiber in a written article.

First and foremost, the appeal of incorporating long, dry forage particles into the diet, particularly in the fresh cow diet is entirely understandable. Historically, it has been believed that these long hay particles would stimulate rumination and potentially reduce the risk of cows experiencing a displaced abomasum in the weeks following calving. While long forage particles have their place in maintaining a healthy rumen, it's important to understand the role that forage particle size truly has on rumination, chewing activity, and consequently rumen health. In order for the forage nutrients to be utilized by the cow, she must chew the forage and break it down into smaller pieces so that the rumen microbes can have a greater surface area to work on. According to a group of Italian researchers, cows must spend more time chewing per unit of fiber when forage particle size is longer, and other researchers have concluded that longer forage particle size equates to longer eating time at the bunk. This is in part because of the mechanics of chewing longer forage particles, but also because longer forage particles increase the risk of sorting and if cows are sorting, they will take longer to consume a meal. If you think about what this means for the cow and her time budget, longer forage particle size in the diet may end up reducing much needed resting and lying time. So, this means that cows need to be provided with sufficient fiber to stimulate chewing and activate salvia secretion, all while balancing for time budgets and a variety of other management aspects.

Physically effective fiber (peNDF) is the portion of fiber that is effective in stimulating chewing, and it is a tool that can be used to monitor forage particle size in the diet. Physically effective fiber in the diet can be calculated by multiplying the portion of feed particles that remain on the top 3 screens of the Penn State Particle Separator (PSPS) after shaking by the NDF content. It's been well documented that lactating cows require 20-22% peNDF in the diet to ensure proper rumen function, but to many people's surprise, forage particle size does not actually have to be that long to provide sufficient

peNDF to the cow. For example, in one research study, cows were fed a high quantity of wheat straw that was chopped with a 1-inch screen. Even at the 1-inch chop length the diet supplied 32% physically effective fiber which is more than enough to maintain proper rumen function. Of course, these values and calculations are dependent on the NDF content of the diet. If you would like help calculating and interpreting peNDF and PSPS results of your diets please reach out. The easiest way to accomplish having enough peNDF in the diet while limiting the risk of sorting, is to limit the amount of forage particles retained on the top screen of the PSPS and focus more on the particles retained on the second and third screen. It was earlier mentioned that long forage particles in the diet can result in increased sorting and consequently increased meal time and reduced lying time. It's important to remember that cows will sort a diet where the particles are more easily distinguishable - or in other words, if the diet is easier to sort, they will sort it. To minimize the risk of sorting,



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provide a diet that is more uniform in particle size. This will make it physically more difficult for the cow to sort, and it will ensure she (as well as her more subordinate pen mates) is consuming the well-balanced diet that was intended for her.

Table 1 below outlines current PSPS recommendations from Dr. Rick Grant at the Miner Institute. As mentioned above, if you are curious about where your diet stands in relation to these recommendations please reach out to myself (cdh238@cornell.edu, 315-955-2059), or your trusted nutrition advisor. We have PSPS on hand and several other tools to help monitor and troubleshoot forage particle size challenges on your farm.

	SIEVE (MM)	% RETAINED	COMMENTS
ТОР	19	<5	Sortable material, too long. Increased time needed for eating especially if over 10%.
MIDDLE	8	>50	Still long and physically effective. More so than 4-mm material. Maximum amount on this sieve 50-60%.
BOTTOM	4	10-20	Functions as physically effective sieve. No recommendation for amount to retain here other than total of top 3 sieves equal physically effective fiber.
PAN	-	25-30	A 40-50% grain diet results in at least 25-30% in the pan.

 Table 1. Current Penn State Particle Separator recommendations, from Dr. Rick Grant, Miner.

ATTENTION NORTHERN NEW YORK DAIRY FARMERS...

NCRAT Dairy Specialists want to help you track progress as you make changes to your dairy!

Example Projects:

monitoring lying time and lameness scoring following a foot bath change
 tracking cow comfort metrics following a stall update, or new barn build
 measuring average daily gain of calves following a dietary change
 tracking passive transfer of calves following a colostrum management change
 analyzing sorting activity following a forage particle size reduction
 ... and more!

Lindsay: lc636@cornell.edu; 607-592-0290 / Casey: cdh238@cornell.edu; 315-955-2059



Farm Business

Job Opportunity with the CCE North Country Ag Team

We are hiring: Regional Agricultural Business Development Associate (Cornell Cooperative Extension); Northern New York

Click here to view more details and apply





CCE North Country Regional Ag Team 203 North Hamilton Street Watertown, New York 13601

What's Happening in the Ag Community

Due to COVID-19, there may be some restrictions for in-person work and programming. Check out our CCE NCRAT Blog and YouTube channel for up to date information and content.

SAVE THE DATE: October 5, 2021, Willsboro Research Farm. See page 4 for more information.

Interseeded Cover Crops Meeting. See page 6 for more information.

Transition Cow Tuesdays. See page 9 for more information.

Healthy, Hardy, Heifers! See page 10 for more information.

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