North Country Ag Advisor

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Photo Credit: L. Ferlito

Cornell Cooperative Extension

North Country Regional Ag Team

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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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Blog: https://blogs.cornell.edu/northcountryregionalagteam
YouTube: https://www.youtube.com/channel/UCxb3fv12XdCA3GjuDsfkM3Q

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."

Seed Corn Maggot, Stand Losses, and the Need for Insecticide Seed Treatments

By Elson Shields, Entomology, Cornell University

Seed corn maggot, *Delia platura,* (SCM) is the primary NY pest attacking large-seeded crops during germination. These crops include corn, soybean, and edible beans. One of the difficulties in managing this pest is the unpredictability of the infestations, the lack of an insecticide rescue option, and the lack of flexibility to compensate for crop stand losses. SCM adult flies, looking similar to small house flies, are attracted to fields with high organic matter within the plant zone, and lay their eggs close to germinating crop seeds. The newly hatched larvae attack and feed on the germinating seeds and young emerging plants. In NY, the frequent use of animal manures and cover crops known as green manure crops increases the attractiveness of the fields to SCM. The short and cool NY growing season encourages growers to plant their crops as early as possible to be able to harvest profitable yields. This early planting of seeds into cold soils results in slow and delayed emergence which increases the window of vulnerability to SCM damage. In these situations, stand losses can exceed 50% due to the attractiveness of the organic matter, resulting in a high level of eggs being laid around the germinating seeds.

Under NY growing conditions, measurable yield losses in corn start to occur between 10-20% stand losses. The magnitude of the yield loss is dependent on the corn variety, degree-day maturity requirements, and the subsequent growing conditions which influence the ability of the undamaged plants to compensate for the damaged plants. Due to the short growing season in NY, the decision to replant the field is seldom an option due to the additional expense of replanting (ca. $130/ac) and the yield reductions associated with the shorter season corn variety required to be planted for maturity to be completed before killing temperatures in the fall. Typically, if the surviving corn stand has less than a 40% stand loss, the resulting yield loss is less costly than the combined cost of replanting and yield decline associated with late planting.

2021 Field study in Aurora, NY

A study was initiated to examine the impact of SCM and the necessity of insecticide seed treatments on corn grown under continuous corn culture with minimal organic matter and corn following a green manure cover crop with high organic matter.

Experimental design:

The continuous corn site had been planted to corn for 7 years prior to the 2021 growing season. Previous corn crops had been harvested as grain and soil tillage was restricted to spring chisel plowing. Crop residue was minimal and planting in 2021 was achieved using a 4-row no-till planter. The cover crop site was planted to red clover in 2020 and the clover crop was retained as a green manure crop. Prior to planting the cover crop site to corn, the clover was mowed, liquid dairy manure was applied to the surface, and the soil was chisel plowed to prepare the seed bed for planting. Planting in 2021 utilized a 4-row no-till planter. Each area was planted on a weekly basis yielding 6 different sequential planting dates. Each row of the 4-row planter contained a different treatment and the plots for each planting date were comprised of a single planter pass in the continuous corn and two planter passes in the cover crop site. The following treatments were planted as single rows within each planter pass: 1) conventional corn (non-Bt-RW) with no seed applied insecticide, 2) conventional corn (non-Bt-RW) with seed applied insecticide, 3) Bt-RW corn with no seed applied insecticide, and 4) Bt-RW corn with seed applied insecticide. Each planting date was replicated four times at each location. Data collected included stand counts after the plants were V3 -4 growth stage and excavation of the missing plants to document the reason for the missing plant.

Results:

Continuous corn site:

At the continuous corn site, the experimental design allowed 24 planting pairs (corn type x presence/absence of seed applied insecticide) for comparison and analysis. Fourteen of the 24 planting pairs (58%) suffered stand losses in the untreated seed row from seed corn maggot ranging from 2% to 66% stand loss. If the 10% stand loss/yield loss threshold is used, then nine of the 24 planting pairs (38%) indicated economic yield losses in the non-seed applied insecticide treatments. If 14% stand loss/yield loss threshold is used, then eight of the 24 pairs (33%) indicated economic yield losses in the non-seed applied insecticide treatments. If the 20% stand loss threshold is used, then six of 24 (25%) planting pairs indicate economic losses in the non-seed applied insecticide treatments. Four of the planting pairs had greater

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than 40% stand losses in the non-seed applied insecticide treatments.

Corn following cover crop site:
In the corn following cover crop site, the experimental design allowed 24 planting pairs (corn type x presence/absence of seed applied insecticide) for comparison and analysis. Sixteen of the 24 planting pairs (66%) suffered stand losses in the untreated seed row from seed corn maggot ranging from 2% to 62% stand loss. If the 10% stand loss/yield loss threshold is used, then 13 of the 24 planting pairs (54%) indicated economic yield losses in the non-seed applied insecticide treatments. If 14% stand loss/yield loss threshold is used, then nine of the 24 pairs (38%) indicated economic yield losses in the non-seed applied insecticide treatments. If the 20% stand loss threshold is used, then seven of 24 (29%) planting pairs indicate economic losses in the non-seed applied insecticide treatments. Five of the planting pairs had greater than 40% stand losses in the non-seed applied insecticide treatments.

Discussion:
The following values were estimated (by regional experts) for 2021 from three different regions of NY:

Region	Silage value (in field)	Representative	Yield Value/ac
NNY:	$40/ton	17 tons/ac	$680
CNY	$38/ton	20 tons/ac	$760
WNY:	$47/ton	20 tons/ac	$940

In all three regions, a one-ton silage loss per acre in yield equals eight-times the cost of the insecticide seed treatment. A one-ton reduction in silage is approximately 5% loss in yield which equals a $40 loss per acre. If we use the estimate that 1%-5% yield losses began at a 10% stand loss ($8-$40 in lost silage), then it is economically beneficial for the farmer to utilize an insecticide seed treatment costing $5 per acre to prevent the loss.

Continuous corn:
Research data collected in controlled studies during 2021 at the Cornell Musgrave Farm located in Aurora, NY, shows that in continuous corn production, seed corn maggot economically damaged 38% of the non-insecticide seed treated plots ranging from 10% to 66% stand losses. If we estimate a 10% stand loss equals a 1-5% yield loss, then the value loss to the farmer is $8-$40/acre.

The cost to the farmer to protect his yield loss with insecticide seed treatment is $5/acre and therefore it is economically viable to spend $5 per acre to protect yield losses ranging from $8 to $40 per acre on 38% of a farm's acreage. If we estimate a 20% stand loss results in a greater than 5% yield loss, then 25% of the fields will suffer losses greater than $40 per acre. These losses would be economically devastating to a farmer, where the farm loses yield on 38% of their acreage ranging from $40/ac to $400/ac. Since predicting which fields will be attacked by seed corn maggot prior to planting is difficult and imprecise, the prevention of yield losses ranging from $40-$400/ac on 25% of the acreage easily compensates and is economically justified for the cost of the insecticide seed treatment for all acres.

Corn following a cover crop:
Research data collected in controlled studies during 2021 at the Cornell Musgrave Farm located in Aurora, NY, shows that in corn production following a cover crop, seed corn maggot economically damaged 54% of the non-insecticide seed treated plots ranging from 11% to 62% stand losses. If we estimate a 10% stand loss equals a 1-5% yield loss, then the value loss to the farmer is $8-$40/acre. The cost to the farmer to protect his yield loss with insecticide seed treatment is $5/acre and therefore it is economically viable to spend $5 per acre to protect yield losses ranging from $8 to $40 per acre on 54% of a farm's acreage. If we estimate a 20% stand loss results in a greater than 5% yield loss, then 33% of the fields will suffer losses greater than $40 per acre. These losses would be economically devastating to a farmer, where the farm loses yield on 54% of their acreage ranging from $40/ac to $400/ac. Since predicting which fields will be attacked by seed corn maggot prior to planting is difficult and imprecise, the prevention of yield losses ranging from $40-$400/ac on 33% of the acreage easily compensates and is economically justified for the $5 per acre cost of the insecticide seed treatment for all acres.

Conclusions:
This 2021 research data indicates the level of potential economic losses by NY corn farmers if seed applied insecticide is not available for use. In NY, replanting after stand losses from SCM is not a viable economic option in most situations due to the short NY growing season. The farmer is required to suffer yield losses due to reduced stand because replanting is seldom a viable economic option.

These data documents the increased risk of economic stand losses from SCM when the farmer plants corn after a cover crop/green manure crop, which is utilized in soil building and nutrient retention over the winter months. These data also indicate why the attempts to have farmers adopt cover crops in the 1990's, were not successful due to SCM related stand losses in the corn crop planted following the cover crop. Adoption of cover crops to build soil health and nutrient retention was not successful until the corn seed was treated

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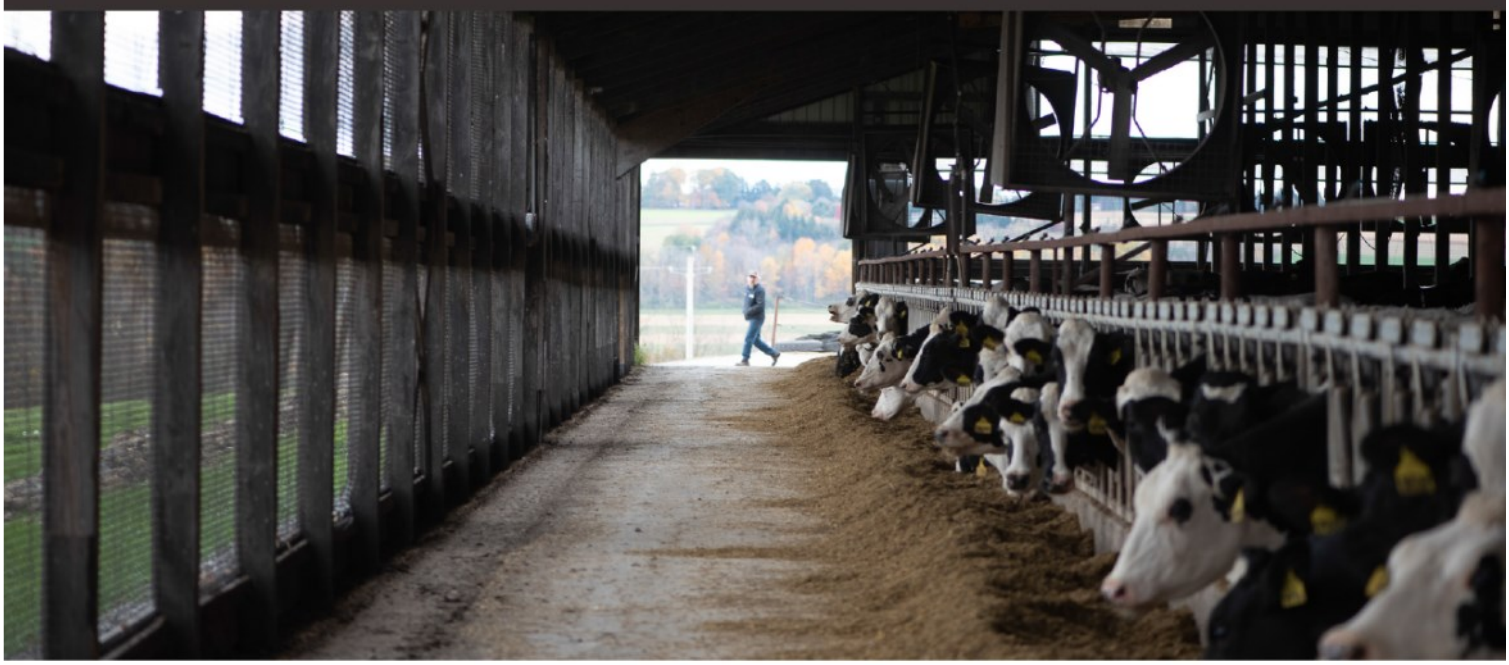
with a seed-applied insecticide to prevent stand losses in cropping situations where SCM pressure was increased. Given that conservation practices such as reduced tillage and planting cover crops to reduce erosion and runoff are not only encouraged but also incentivized in NY State, it is important to understand that in the absence of these seed protectants, farmers may revert to planting fewer cover crops to avoid losses to SCM.

We thank NY Farm Viability Institute, Cornell CALS, and Cornell Agricultural Experiment Station for their research support for this ongoing study focused on identifying alternative management strategies for SCM.

Photo credit: L. Ferlito

Dairy Career Day

Open to high school students, college students, active duty military, veterans, or anyone interested in a career in dairy!



- Learn about the wide variety of careers in the dairy industry!
- Hear from local farmers and other dairy industry professionals.
- Lunch will be provided.

- Take an optional tour of a dairy farm after the presentation!
- Transportation can be made available upon request from JCC to Porterdale Farms.

Saturday, November 6th | 11 AM - 2 PM

Please register in advance by November 4th at
https://reg.cce.cornell.edu/DairyCareers_222.

The event will take place at Jefferson Community College, with a farm tour to follow at Porterdale Farms (14806 County Route 155, Adams Center, NY).

Questions? Contact Abbey Jantzi at aej48@cornell.edu or 315-788-8450 ext. 278 or John Buneta at jjb399@cornell.edu or 315-788-8450 ext. 269.

Cornell Cooperative Extension | Jefferson County

Small Farms Farm Ops

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

Dairy

Brrrr… It's Cold in Here!

By Casey Havekes

We're starting to approach the dreaded cold, winter months which means we're due for another reminder about how cold stress can impact young calves. Every year we remind folks about the importance of preparing for cold stress so that calf performance isn't hindered, but that's because every year we are learning more about the negative impacts it can have.

First, it is important to recognize why calves are especially susceptible to cold stress. Calves are born with very little fat reserves so naturally they have very little to work with if they need to burn fat to generate metabolic heat and stay warm. They also have low surface to mass ratio and poor insulation which makes heat loss a high risk for young calves. Lastly, they do not have a functioning rumen in their early life, so they are unable to produce heat through fermentation the way adult cows do. Combined, these reasons make it increasingly important for dairy calf managers to provide an environment that protects young calves from cold stress.

Secondly, it is important to understand when cold stress can occur. When the temperature starts to drop below the calves' thermoneutral zone, they must use additional energy to maintain their body temperature. For newborn calves up until they are about 4 weeks old, this thermoneutral zone is between 50-77°F, and for 4 week old calves until weaning the thermoneutral zone is 32-77°F (this suggests that older calves are slightly more tolerant of cooler temperatures).

Third, it is important to understand what you, as a calf manager, can do to help calves through periods of cold stress. The number one strategy and hopefully your overall goal regardless of weather, is to keep calves healthy. Healthy calves are naturally going to be more resilient to cold stress because they are active and eager to consume their meals. Activity will generate body heat and consumption of warm milk will help keep the calf warm. If a calf is sick, it's likely that she won't be active and that she won't consume her meals as eagerly, or at all. It is recommended to put sick calves in a warm room or put heat lamps on them during periods of cold stress because they are at higher risk of hypothermia. Related, if you have dystocia calves (calves born to difficult calvings), their ability to thermoregulate can be up to 36% lower than non-dystocia calves. This further highlights the importance of paying closer attention to dystocia calves. Providing additional nutrition can also help combat the negative consequences of cold stress. One of these consequences is that calves use the energy supplied from milk to maintain body temperature rather than for growth. Providing additional calories can help calves maintain thermoneutrality while also putting on weight. Be cautious when increasing nutrition though - you don't want to increase the solids content too much by adding extra milk replacer powder, and you don't necessarily want to feed more fluid milk in each meal. Instead, it is recommended to add an extra meal when possible during the cold months.

From a housing perspective, make sure calves have plenty of dry bedding. One easy way to assess if calves have sufficient bedding is to try the kneel test. If you kneel in their bedding and your knees get wet, it's not sufficient – add more or change it entirely! Lastly, give calves a calf coat or calf blanket. It's a very easy solution that truly does make a difference for calves.

In conclusion, there are a lot of things that we can complain about that winter brings to the table, but poor performing, or sick calves doesn't have to be one of them! Follow these simple strategies to maximize your calves' success during the cold months, and feel free to reach out if you need assistance.

Figure 1 Photo Credit: https://hoards.com/article-28941-calfhood-research-developments.html

PRO DAIRY
Education & Applied Research

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_uQV9ZVpQQX-txWspcLqKfq

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 CALS
College of Agriculture and Life Sciences

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 ***VIRTUALLY*** for an 8-week 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

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

"Essential Employee" Definition Expired: Quarantine Orders Apply to Unvaccinated Farm Employees

agworkforce.cals.cornell.edu/2021/10/08/essential-employee-definition-expired-quarantine-orders-apply-to-unvaccinated-farm-employees/
October 8, 2021

Key Messages:

- Farm employees are no longer exempt from quarantine orders.
- The "essential" employee designation for farm employees ended when the state terminated the COVID-19 executive orders.
- Generally, vaccinated people can continue working after an exposure to COVID-19, but the unvaccinated must quarantine.

Farm employees remain essential to farms and to the food supply but the term "essential worker" as used during COVID-19 pandemic has now expired. As of June 25, 2021, most of the COVID executive orders were rescinded, including all exemptions for essential workers. This is important for farm employers because under the executive orders, "essential workers" could continue to work even when under quarantine restrictions due to a COVID exposure.
Recently, an unvaccinated farm employee was exposed to COVID-19 at home when two of his family members tested positive. The employee does not have symptoms (asymptomatic) and has monitored his temperature for fever each day before going to work. The employee has been wearing a mask and social distancing when around other employees for the last 5 days since his exposure to the positive cases. The employee was contacted by the local department of health and asked to quarantine.

The farm employer asked through Northeast Dairy Producers Association (NEDPA) whether "essential" farm employees were still exempt from quarantine orders. A response came from the NYS Department of Health through the Department of Ag and Markets, as follows:

"The employee, who is a contact to a case, should have received an order to quarantine from their local health department and should be in quarantine. There is no longer an exemption for essential workers. The term and definition for an essential worker was part of an executive order. When the executive orders expired, so did the definition of an essential worker. The contact should follow the orders provided by the Local Health Department."

Vaccination status is important in this situation. According to CDC, fully vaccinated employees who have no symptoms of COVID-19 do not need to quarantine. They can continue to work while wearing a mask and getting tested as outlined in the CDC resources below.

CDC Resources (updated on October 4th)
For Anyone Who Has Been Around a Person with COVID-19

Anyone who has had close contact with someone with COVID-19 should quarantine for 14 days **after their last exposure** to that person, except if they meet the following conditions:

Someone who has been fully vaccinated and shows no symptoms of COVID-19 does not need to quarantine. However, fully vaccinated close contacts should:

- Wear a mask indoors in public for 14 days following exposure or until a negative test result.
- Get tested 3-5 days after close contact with someone with suspected or confirmed COVID-19.
- Get tested and isolate immediately if experiencing COVID-19 symptoms.

What are the public health recommendations for close contacts who have ongoing exposure to COVID-19?

Close contacts with ongoing exposure who are unvaccinated or not fully vaccinated

People who are unvaccinated or not fully vaccinated and have ongoing exposure to COVID-19 should

- Get tested immediately when they are identified as a close contact.
- Begin quarantine immediately and continue to quarantine throughout the isolation period of the person with COVID -19.
- Continue to quarantine for an additional 14 days starting the day *after* the end of isolation for the person with COVID-19.

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- Get tested again 5-7 days after the end of isolation of the infected household member.
- Wear a mask when in contact with the person with COVID-19 throughout the person's isolation period.
- Wear a mask when in contact with other people in the home until quarantine ends.
- Isolate immediately if they develop symptoms of COVID-19 or test positive.

Close contacts with ongoing exposure who are fully vaccinated

People who are fully vaccinated and have ongoing exposure to COVID-19 should:

- Get tested 3-5 days after their *first* exposure. A person with COVID-19 is considered infectious starting 2 days before they develop symptoms, or 2 days before the date of their positive test if they do not have symptoms.
- Get tested again 3-5 days after the end of isolation for the person with COVID-19.

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
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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.***
Dairy Career Day. See page 6 for more information.
Transition Cow Tuesdays. See page 8 for more information.
Healthy, Hardy, Heifers! See page 9 for more information.