

# North Country Ag Advisor

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**Cornell Cooperative Extension**  
**North Country Regional Ag Team**

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## North Country Ag Advisor

Cornell Cooperative Extension of  
Jefferson, Lewis, St. Lawrence, Franklin,  
Clinton, and Essex Counties

*"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."*

Ag Advisor is published by the North Country Regional Ag Team collaborating with Harvest NY

Layout/Design: Tatum Langworthy

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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."

# Field Crops and Soils

## What are Mycorrhizae and Should They Factor into Your Crop Management Plans?

By: Kitty O'Neil, PhD

You've probably read about mycorrhizae, their presence in soil and their interactions with crop plants in farm magazines and on internet blogs. Those articles often describe these mysterious soil organisms with distracting supernatural-sounding language and promote their consideration to top priority for crop and soil managers. Is that a good idea? Are they really that important? If so, what do they mean for crops, soils and the environment? How about your bottom line? Let's see what science has revealed about these organisms.

Mycorrhizae are naturally occurring soil fungi that live symbiotically with plants. They are highly specialized fungi that colonize roots of host plants, providing the host plant greater access to water and nutrients, especially P. They function like extensions on plant roots, exposing the plant to a larger volume of soil from which to find nutrients. Mycorrhizae increase a crop's ability to take in P, Zn, Cu and water. This enhancement typically results in increased plant growth, especially under conditions such as drought or low nutrient availability.

In exchange, the host plant shares some of its photosynthesized sugars with the fungus to meet its energy requirements. Mycorrhizae are categorized into a few main groups, but what they all have in common are their close, mutualistic association with plant roots, some so close they actually penetrate plant tissues and cells, and extend out into the soil, expanding the root zone. Soil scientists estimate that mycorrhizal fungi make up about 30% of all soil-borne organisms.

Scientists also estimate that about 80-90% of all terrestrial plant species live symbiotically with mycorrhizal fungi. Notable exceptions are spinach, sugar beets, lupins, and brassicas. Mycorrhizal fungi are noted throughout the fossil record, actually appearing *before* plants, and are believed to be one of the contributing factors leading to the development of early land plants. Today, mycorrhizae are present in most soils worldwide as they are easily transported by wind, water, humans and animals. Some plant-fungus relationships are very specific and while others are less so. Some plants can associate with more than one type of mycorrhiza. Most of the more common mycorrhizal fungi cannot grow or reproduce without their host plant, though reproductive spores can persist in the soil until a host plant becomes available.

Now, all this said, are they important in NNY forage and grain cropping systems? Simply put, yes, they're likely in all our soils, quietly doing their job assisting corn, alfalfa, clovers, grasses and soybeans. (These fungi are NOT the organisms partnering with legumes to fix N. Those are *Rhizobia* bacteria.) Our present day crop management practices does affect mycorrhizae, as follows:

- Reduced tillage methods enhance mycorrhizae growth. Conversely, tillage disrupts development of mycorrhizal development by physically breaking hyphae and reducing growth. Mycorrhizae are also able to colonize crop roots earlier in the season in no-till fields compared with conventionally-tilled fields. Earlier colonization increases

*Continued on next page.*



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Continued from page 3.

spring P and Zn uptake, which can improve overall yield and reduce P fertilizer needs. Those long hyphae also help soil aggregates stick together, improving soil structure.

- Crop rotations and cover crops can influence mycorrhizae populations. Rotations that include non-mycorrhizal crops or bare fallow periods will have reduced mycorrhizae. Non-brassica cover crops stimulate mycorrhizae populations by bridging seasons and eliminating a bare fallow period. Brassica cover crops are non-mycorrhizal and do not help in this way.
- Pesticides can have variable effects on mycorrhizae. Soil fumigants typically damage mycorrhizae severely in upper soil layers. Herbicides vary in impact, ranging from none to modest reductions in mycorrhizal growth. Insecticides and nematicides generally have little effect while systemic fungicides can reduce growth of some mycorrhizae and foliar fungicides have very little impact.
- Soil fertility and fertilizers can have an impact. When soil P is plentiful, mycorrhizae growth can be suppressed, while organic fertilizers and manure may increase mycorrhizal growth and diversity.

## Extension of Corn Root Surface Area through Mycorrhizal Fungi



Commercial mycorrhizae inoculants are commercially available. Do they help? Are they cost-effective? Independent research results are mixed and more studies are needed to know for sure. Researchers have not demonstrated that the use of these inoculants will increase short- or long-term yields. Although mycorrhizae are present in nearly all soils, inoculation could potentially be beneficial in some specific circumstances where populations would be expected to be very low, or where the benefit may be substantial. For example, when soils are very low in available P, where mycorrhizae populations have been reduced through fumigation or intensive tillage, or where non-mycorrhizal plants have been grown continuously or frequently in a rotation, a response to inoculation may be possible. As in other similar experimental or learning situations, test an application on a couple of small, marked areas to gain experience before using it widely to reduce risk of unrecovered expense.

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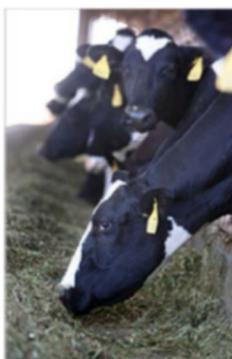


prodairy.cals.cornell.edu/regional-programs/dairy-manager-training

## Cornell CALS PRO-DAIRY Dairy Manager Training

### Who should attend?

The Dairy Manager Training is an educational program for farmers, employees and agriservice professionals who work directly with dairy cows. It will cover effective cow handling; communication to share farms goals, implement decisions and train employees; how to manage existing facilities for profitability; and using partial budgets for decision making.



### Program Details:

The Dairy Manager Training is a two day program held one week apart from each other from 9:30 am to 3 pm. The program will be held on farm with a combination of presentations, demonstrations, farm walk-throughs and discussion. Registration is required. Cost is \$50 and includes the two day program, materials and lunch.

### Featured Trainer: Curt Pate

The Dairy Manager Training will include a full day cow handling training by Curt Pate, nationally recognized expert in dairy cattle handling and stockmanship. For more than a decade Curt Pate has been conducting demonstrations and clinics on cattle stockmanship and safety. His personal experience incorporating effective stockmanship principles supports a "for profit" mindset and focuses on highlighting the increased economic benefits of handling cows correctly. In addition, Curt recognizes the growing public scrutiny surrounding livestock production and the impact that improved livestock handling practices create for the sustainability of the dairy industry. The program will comply with the FARM and BQA programs.

### Evening Beef Cattle Handling Training with Curt Pate

A special training for beef producers will be held from 6 to 9 pm, March 5 at Center Dale Farm, 28206 St Rt 126, Black River and March 6 at Empire Livestock, 7418 NY-415, Bath. Registration is required. Cost is \$25. Contact Katherine Brosnan, NY Beef Council, at 315 339-6922.

*Reduced program registration costs are possible because of the generous sponsorship of the National Beef Cattlemen's Association, NY Beef Council, Beef Quality Assurance and the Beef Checkoff program.*



Cornell CALS  
College of Agriculture and Life Sciences

Cornell Cooperative Extension

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Heather Dann, PhD, Research Scientist, Miner Institute

Erica Leubner, Farmer and Farm Family Consultant, Farm Net, Cornell University

### Locations:

**NNY: March 5 and 12**

**March 5** - Extension Learning Farm, 2043B St Hwy 68, Canton.

**March 12** - Extension Learning Farm, 2043B St Hwy 68, Canton.

**Register:** reg.cce.cornell.edu/dairymanagerstraining2019\_10512

Tatum Langworthy, tlm92@cornell.edu, (315)788-8450

**Questions?** Kim Morrill, (603)568-1404

**CNY: March 6 and 13**

**March 6** - Route 38 Bar & Grill, 3382 Route 38, Owego and visiting Todd and Josie Spencer's Dairy Farm, 3657 West Creek Rd, Newark Valley.

**March 13** - McMahon's E-Z Acres, 5950 West Scott Rd, Homer.

**Register:** Shannon Myers, srm242@cornell.edu, (607)391-2662

**Questions:** Betsy Hicks, (607)391-2673

**NWNYS: March 7 and 14**

**March 7** - CCE Wyoming County, 36 Center St Suite B, Warsaw. Visiting Emerling Farm, 2904 NY-246, Perry.

**March 14** - CCE Ontario County, 480 North Main St, Canandaigua.

Visiting Bonna Terra Farm, 8800 NY-5, Bloomfield.

**Register:** Linda Risewick, (585)343-3040 ext. 138

**Questions?** Libby Eiholzer, geg24@cornell.edu

**Online registration opens Feb 15:** nwnyteam.cce.cornell.edu/event.php?id=823

id=823

Cornell Cooperative Extension  
Lewis County

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315-376-5270 | lewis@cornell.edu | www.ccelewis.org



# Swarming Bees!

**March 19, 2019 6pm–8pm**

Lewis County Education Center, 7395 East Road, Lowville



Emma Mullen; Honey Bee Extension Associate at Cornell University will discuss the steps for

-  Identifying
-  Preventing
-  Managing swarming in a bee yard.

**Cost: \$5.00**

Register by March 15 at  
[https://reg.cce.cornell.edu/SwarmingBees\\_223](https://reg.cce.cornell.edu/SwarmingBees_223)  
315-376-5270 or mm427@cornell.edu



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# Mental Health First Aid Trainings Available for New York's Agricultural Community

NY FarmNet is partnering with Cornell Cooperative Extension to bring Mental Health First Aid training to the agricultural community in four locations across the state. This is a chance for field representatives, agricultural professionals, farm neighbors and agency staff to learn how to start a conversation with someone who seems to really be reaching out or needing some help with their emotions or mental health. As this period of low commodity has stretched on, those working directly with farmers are also experiencing high levels of stress. Many agricultural service providers need additional training and information to help their co-workers, neighbors, and farmers they work with.

Mental Health First Aid is a public education program that introduces participants to risk factors and warning signs of mental illnesses, builds understanding of their impact, and overviews common supports. This 8-hour course uses role-playing and simulations to demonstrate how to offer initial help in a mental health crisis and connect persons to the appropriate professional, peer, social, and self-help care. The program also teaches the common risk factors and warning signs of specific types of illnesses, like anxiety, depression, substance use, bipolar disorder, eating disorders, and schizophrenia.

The closest training in NNY is set for:

**February 28 from 8:00 am – 4 pm at SUNY Potsdam in partnership with Cornell Cooperative Extension of St. Lawrence County.** Barrington Student Union, Fireside Lounge. \$30.00 per person. Register on-line at- [https://pub.cce.cornell.edu/event\\_registration/main/events\\_landing.cfm?event=mentalhealthtraining\\_240](https://pub.cce.cornell.edu/event_registration/main/events_landing.cfm?event=mentalhealthtraining_240) or call 315-379-9192 Ext. 237.

**Contact Kate Downes at [kdownes@cornell.edu](mailto:kdownes@cornell.edu) with any questions regarding the four trainings. Additional information on the trainings is available at: <https://www.nyfarmnet.org/>**

NY FarmNet is based in the Charles H. Dyson School of Applied Economics and Management, and the College of Agriculture and Life Sciences and the SC Johnson College of Business at Cornell University. Through a network of personal and financial consultants, NY FarmNet works on the farm with farm families to address business viability, mental health, communication, and farm succession planning. Cornell Cooperative Extension puts knowledge to work in pursuit of economic vitality, ecological sustainability and social well-being across New York State.

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## Winter Ventilation

*By Timothy Terry, Harvest NY*

It's no secret. Winter is here and, as typical for NY, it will be here for a while yet. Also typical is the closing up of livestock facilities, especially calf barns, to minimize the effects of winter. Unfortunately, this action usually proves to be counterproductive as it leads to a stale, humid environment and greater morbidity (incidence) of disease, especially respiratory illnesses.

For this reason the individual calf hutch is still the "Gold Standard" for calf care (even though it may not be considered as such by the caregivers themselves). The primary justification for closing up a barn is fear of cold air, however, a properly designed ventilation system will introduce the minimum volume of air to maximize calf health. Like the calf hutch, a barn can be cold and the calves healthy if they are adequately bedded and properly fed. The minimum volume of fresh air is 15 cfm per calf or 4 air changes per hour (4 X barn interior volume), whichever is greater.

Some may argue that air movement at that rate will produce drafts, and I would agree, if the introduced air is not distributed either through wall/ceiling vents or a positive pressure tube ventilation (PPTV) system. By definition, a "draft" is air moving at greater than 60'/minute, and "still air" is moving at less than 60'/minute. A properly operating system will achieve still (not stagnant) air at roughly 4' above the bedded floor. This is often where issues arise. Caregivers will complain that they feel a breeze on their face, so therefore, the barn must be drafty. However, they forget that they are feeling that breeze at 5 to 6 feet above the floor. Try it down at calf level, and while you're down there, check for any foul odors. If you smell something other than fresh air you may have a dead zone. This is quite common in individual pens, especially if they have solid sides. If possible, replace one or two sides with a livestock panel, particularly if they are perpendicular to the flow of air.

Unfortunately, even in a well-designed system, air flow can be thwarted if the entrance of fresh air and/or exit of stale air is too small or even nonexistent. Too small of a cross sectional inlet area creates too much resistance to air flow – like choking an engine or kinking a hose. Too small of an exhaust area means stale air can't leave, and if stale air can't leave, fresh air can't come in. Remember, you can breathe through a straw, but you can't breathe through a soda bottle. I have been called out to calf barns with PPTV system problems only

to find that the doors have been shut and the curtains closed tight. Once opened an appropriate amount the problem was solved. What's an "appropriate amount"? You want air to enter or exit at 400'–500'/minute (4.5-5.5 mph), so you total the cfm capacities of the fan(s) and divide by 400'/minute. This will get you the minimum required square feet of cross sectional area. For example, if your calculations say you need 200 sq. ft. and your calf barn is 100' long, drop the curtains 1' on each side ( $(100 \times 1) + (100 \times 1) = 200 \text{ ft}^2$ ). If one side is particularly windy, drop it a little on that side and more on the other, as long as the total equals 200 sq. ft. Alternatively, you could install an exhaust fan(s) equal in capacity to the tube fan(s).

I have seen where producers have wanted to use barn attic space as a warming plenum during cold weather. This does work providing the same cross sectional rules are maintained for fresh air into the attic and any ductwork supplying air to the fan. Some contractors may want to install mixing dampers or place the fan offset from the wall to mix warm interior air with the cold outside air – DON'T DO IT! All you'll be doing is spreading humid, pathogen-laden, polluted air faster and farther. One cough will become three which will become eight... You get the idea.

Since these systems (minimum ventilation) operate 24/7/365 they have a life expectancy of only five years, and that's only if they have been regularly serviced. Belt drive fans will need to have the belts replaced and/or tightened, direct drive fans lose efficiency, fan blades get dirty, protective screens become clogged with feed, trash, or snow, and after-market modifications such as heaters and filters can further restrict air flow. So get out there and clean and service those fans. Make sure the inlets and/or tubes are unobstructed and moving freely. If you have an older system, have your equipment supplier evaluate its performance – it may be time to make repairs or do something different.

A couple months ago, Cornell PRO-DAIRY released a set of fact sheets on tube ventilation in pre-weaned calf barns. They have also published a decision tree on evaluating ventilation needs in pre-weaned calf barns. These are available on the PRO-DAIRY website on the "Resources" page, just scroll down (<https://prodairy.cals.cornell.edu/facilities-engineering/resources/>).

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# Antimicrobial resistance, treatment protocols and prudent antimicrobial usage – What does it all mean?

By Kimberley Morrill, PhD

Over the last few years we have continually heard the phrase “it’s a global market”. While that phrase is often used to describe the milk market, global issues, global concerns and global consumer trends continue to guide animal well-being, best management practices and antibiotic usage too.

Antimicrobial resistance and prudent antimicrobial use are two global issues that are continuing to receive increased attention in both humans and animals. Antimicrobials are of great importance in modern human and veterinary medicine, however, overuse and/or inappropriate use has been linked to antimicrobial resistance. Resistance then leads to suboptimal treatment results of bacterial infections. Due to several incidents of methicillin-resistant *Staphylococcus aureus* (MRSA) and extended spectrum betalactamase producing bacteria (ESBLs), antimicrobial resistance and antibiotic usage have gained increased attention. Some governing bodies have set stronger usage guidelines (humans and animals) and overall reduction goals. In the Netherlands, the government set antimicrobial use reduction goals based on usage in 2009. Their goals included: 20% reduction by 2011, 50% by 2013 and 70% by 2015, (Speksnijder et al., 2015).

It is debatable whether or not antimicrobial resistance observed in animal pathogens will be transmitted to humans, but transmission is definitely possible, either through direct contact or via the food chain. Although recent sequence-based population level studies indicate that relatively little transmission occurs among animal species and between animals and humans, responsible antimicrobial use in food animals is paramount for maintaining animal health and possibly human health.

Prudent use of antimicrobials is of great importance for dairy farms. Two areas that we can focus on are use of antibiotics to treat mastitis and for calf health. For both of these areas the first step is focusing on prevention, then controlling new infections and reducing the risk of spreading the infection to herd mates. For both of these challenges, treatment protocols (and compliance) are important to optimize cure and minimize recurrent episodes. This article will focus primarily on mastitis, as there is the risk of both a milk and/or meat residue occurring.

A key component of judicious antimicrobial treatment is only

treating cows with antimicrobials when antimicrobials are expected to have added value. In simple terms – if the cow does not have an infection that would respond to antibiotics, DON’T use them. Blanket treatment of mastitis can lead to an increase in antibiotic usage. Diagnostic test results can help dairy producers determine if an intramammary infection warrants antimicrobial treatment. This practice leads to a significant decrease in antimicrobial use (Lago et al., 2011). Curtailing the usage of non-necessary antibiotic treatment helps reduce the risk of developing resistance, as well as the producer’s cost as they are no longer paying for a treatment that does not have a benefit. If this is an area of interest to you, have a conversation with your veterinarian to see if they offer milk sampling, or contact your local Quality Milk Production Services laboratory. For the North County you would want to reach out to QMPS in Canton. They can work with you to set up a sampling protocol as well as work with you and your veterinarian to develop treatment protocols.

Research on optimal antimicrobial use under restricted conditions (ie. proper dosage, length of time and correct antibiotic) continues to demonstrate that reducing antimicrobial use is possible with limited consequences for animal health and milk quality. In daily practice, using farm-specific treatment and prevention protocols adds value.

Key takeaways:

- PREVENTION, prevention, prevention!
- Treatment protocols should be developed with your veterinarian.
- Antibiotics should only be used if there is a bacterial infection.
- Not all antibiotics are the same.

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# The Dairy Industry needs to change to stay relevant to consumers

By Kimberley Morrill, PhD

I'm writing this article in January, it's -6, I have pneumonia and my furnace is broken. I'm not in the best of moods. As a warning, this article might make you angry, it will likely put you on the defensive, but please read the full article, digest it, ruminate on it and then feel free to call or email me with your irate comments. Dairy farmers – we need to listen to what our consumers are requesting, and work with processors to create new DAIRY-based products.

Yesterday, Chobani announced they are releasing “non-dairy Chobani”, they'll also be releasing a new non-dairy single-serve drink. Chobani is not using the word yogurt, and it does not appear on the label (at least not the one that has been released as of 1/10/2018), the media is using the phrase “non-dairy yogurt”. Throughout the day I saw numerous posts from dairy farmers furious about this. “How could Chobani do this to them?” “Another imitation product.” Some of the posts used expletives but none of my farming friends seemed too happy about this product. I'm not too excited either, but I don't buy these products to begin with...

While scrolling through Facebook, through the many irate farmer posts, I came across one that was excited about the product. A good friend from high school had a post “this is great, I can finally eat something that compares to yogurt”. My friend is breast feeding and her daughter has severe food allergies which include soy, gluten and dairy. My friend hasn't been able to eat dairy (along with many other delicious foods) for nearly a year; she is a rockstar for the life changes she has made for her baby. She has been looking for and trying “non-dairy” products and commenting most of them are not the most appealing and lack any nutritional value. While I don't support the use of milk and dairy or the phrase “non-dairy” on imitation products, there is a percentage of the population that CAN NOT consume dairy. For some it might be a few dairy products, maybe just fluid milk, but for some people with severe food allergies they can't consume any dairy products. This is not their fault. For some people, they don't like dairy. I'm guessing everyone reading this article has a food they don't like. For me it's sushi. Am I being attacked for not liking sushi? NO, so let's not attack people who don't like a food or can not eat a food.

Dairy farmers – it's time to wake up, Chobani is a business. They are not here to 100% support dairy farmers. They are a business that needs to make money to pay their employees and yes, the CEO and owners. They are a business; they want

to make a profit. I'm hoping all of you (dairy farmers) want to make a profit. That is the goal of any business. Chobani is making a business decision. The consumers want this product, they are willing to pay extra for it, so Chobani is making it. Why should they make this product? Because there are people who cannot eat dairy, there are people who want a non-dairy option. Is this competition for the dairy industry, YES.

Maybe we (dairy farmers, agribusiness affiliate, people who love agriculture and dairy products) need to listen to the consumer concerns, interests and what they want for products. Instead of constantly being on the defensive and complaining about how the consumers don't know anything and how they want to dictate what we do, maybe we should listen. Let's listen, what do the consumers actually want? Let's not focus on the activists, let's focus on the remaining 99% of the population. Let's take action, change our product and image and move with the times. So consumers want a more convenient bottle that fits in a car cup holder, they want different flavors, they want something that is shelf stable, something that is high protein and low sugar...Let's get creative! Maybe, just maybe if we are willing to listen, and make changes, WE, we, the dairy farmers can be the competition and provide multiple products that meet the continually changing consumer demands. WE already have a leg up, milk has excellent nutritional value. If we want to stay relevant, we need to continue to change.

When you go to the grocery store you buy what you want, what is convenient and what fits in your budget. Let's make dairy fit those categories.

Now, as I started – you are likely not happy with 100% of what I wrote. Some of it likely made you angry, but I'm guessing all of you want to be profitable. You want to see the dairy industry succeed. I want to see the dairy industry continue to be a forefront for human nutrition. Call your cooperatives, call DMI, call your local check off. Let's get creative and move into the future. If you still want to call or email me with comments – please feel free, [kmm434@cornell.edu](mailto:kmm434@cornell.edu), (603)-568-1404. But do you really want to waste that time complaining, or do you want to make a phone call that could be productive?

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# Farm Business Management

## Farm Finance 101: Tax Changes for 2019

By Kelsey O'Shea

Another year is coming to a close, and everyone is starting to think about their year-end financials and getting ready for tax season! This year there have been some pretty big changes to the tax law that you should be aware of. Below are the most current and crucial updates that pertain to both your personal tax form 1040 and your farm related tax forms. As always, if you have questions regarding your specific tax situations, it's recommend that you consult your accountant directly.

### 1040 CHANGES

The standard deduction has changed to \$12,000 for single and \$24,000 for married filing jointly, because of this increase, there are no longer "Personal Exemptions" - they have been "suspended". This will impact those with multiple dependents who were previously getting a large amount of personal exemptions. In addition, itemized deductions have changed such that there are no miscellaneous itemized deductions subject to the 2% flow. State and local income/property taxes are now capped at \$10,000 and medical expenses are limited to 7.5% of adjusted gross income.

Capital Gains Brackets have also changed. Now they are 0% if taxable income is less than \$77,200 for married filing jointly and \$38,600 for single. It is 15% if taxable income is greater than \$77,201 and less than \$479,000 married filing jointly, and greater than \$38,601 and less than \$425,800 for single.

### DEDUCTIONS AND DEPRECIATION

The Qualified Business Income Deduction (Section 199A) allows owners of sole proprietorships, S corps and partnerships to deduct up to 20% of the income earned by their business. The calculation of this can be very complicated if your taxable income is over \$315,000 for married filing jointly. If you are a dairy farmers, milk cooperatives will share the pass through deduction on the 1099's they issue to farmers, there may be some limitations to this amount. There is still "bonus depreciation"- you can only use this in the year of a NEW or previously unused acquisition of the asset and you can deduct 100% of the purchase price.

"Section 179" direct expense depreciation is available in the year of purchase with a maximum of \$1,000,000 if capital purchases in total are less than \$2,500,000. New farm equipment will now have a 5-year class life while used farm equipment will keep the class life of 7 years. Finally, farm assets with 3,5,7 and 10 year class life will be depreciated using MACRS 200% declining balance while 15 and 20 year assets will maintain the 150% declining balance.

### Credits

There were no specific changes to the NYS Farmers School Tax Credit, however it is always good to review the rules. To be eligible you must have 2/3 of your gross income from farming, and you must own qualifying agricultural property OR use property owned by a father, mother, grandmother, grandfather, brother and/or sister and you have a written agreement to eventually purchase the property and the owner consents to not claim the credit. Most importantly, the school taxes MUST BE PAID IN THE TAX YEAR in order too get the credit. The credit is 100% of the school taxes paid on qualifying property on up to 350 acres, then 50% on any acreage beyond that amount.

Investment Tax Credit is also still available and it is available on capital purchases that were NOT direct expensed using "section 179" depreciation. The credit is 4% of the cost of the capital purchase that must be eligible property with a useful life of 4 years or more (excluding vehicles). The credit is NON-REFUNDABLE, meaning that it will offset any state tax owed. If you do not owe NYS tax, then the credit can be carried over for 10 years. IF you are in the first year of operating, then the credit is refundable.

## Central New York Testimonial

By: Janice Degni, South Central New York Dairy & Field Crops

Rick has farming in his blood. He is a proud owner of the farm he began working on as a young man (teenager) He has two jobs—one as a mechanic and the other as a crop farmer growing oats, corn and soybean as well as a mix of vegetable crops including sweet corn, cabbage and other cole crops, and pumpkins. He farms on the edge of a valley enjoying a few level, well drained acres but the majority of the acreage is rolling hills with some steep slopes underlain with silt loam soils that are vulnerable to erosion.

Rick has been using crop insurance for nearly 10 years. After speaking with a trusted fellow grain farmer who recommended crop insurance, he decided to give it a try. A larger farmer might be able to dilute their losses but in Rick's case he values the insurance for the risk protection it offers since he is farming only a couple hundred acres. He believes as a small farm there is a great benefit from using insurance to protect the cost of crop establishment when the season's weather and pests' impact on the crop cannot be predicted in any year and they can have a huge impact on the final crop yield and quality.

In 2009, after planting his soybeans, a hard thunderstorm caused the soil to form a hard crust. Rick was worried that his beans would not successfully germinate. Fortunately, he was able to locate a cultivation tool to break up the crust to allow his beans to emerge. With that experience in mind he bought his first policy the following year when he purchased revenue protection for his soybean and corn grain acres using individual farm numbers.

Rick had bought catastrophic insurance from the Farm Service Agency (FSA) before 2009. Although the price was right at \$250 per crop, the coverage was minimal and required nearly a complete crop loss before a loss would qualify for an indemnity. Rick advises that it's tough to learn the policy details from the school of hard knocks. He advises anyone with insurance to stay in contact with their insurance agent and keep them up-to-date with any problems. He reports his yields to both FSA and his insurance company. He laments that when he sold his corn grain harvest one year, he ran the truck loads over a neighboring farm's platform truck scales. Initially crop insurance would not accept his weights because the scales were not certified. He wished that he knew that detail ahead of time to avoid unnecessary aggravation. Eventually the weights were accepted as verification of his yield. He now has the loads run

over certified scales. Rick recommends asking questions until you understand all the moving parts of your insurance policy. For example, one of the first decisions is how the land will be sectioned and it's important to understand the costs and benefits of using individual farm numbers vs enterprise units.

Rick explains that he doesn't buy crop insurance expecting a pay back. He would prefer an uneventful crop season with reasonable yields, but he knows as a small farmer, he cannot afford the risk of crop loss or underperformance. Rick explains that crop insurance is another tool in his management tool box. He explains that, "a small farmer cannot afford not to have insurance. It's a management tool. It's a tool when things are not good, usually weather related." For grain farmers who forward contract, it offers protection if the harvested yield isn't sufficient to meet the amount contracted. The insurance payment would offset the cost of the grain to be purchased to fulfill the contract.

He appreciated the federal subsidy for premiums which makes crop insurance affordable. The value of the subsidy is about 3 times the cost of the premium charged to the grower. He paid a \$400 premium for his 2018 policy for insuring 68 acres of corn grain. The portion of the premium covered by the government subsidy was \$1200 or 3 times his out of pocket cost.

Rick likes to cover 70% of his yield. At that level premiums are affordable and the crop is protected from wildlife damage in addition to the vagaries of weather. There have been several years when conditions resulted in Rick receiving an indemnity or payment from crop insurance to cover a loss. The payments were critical for keeping finances out of the red. He received a much-needed payment in a drought year when yields were poor. Another year he planted 6 rows of corn around a field before a heavy rain storm rolled in preventing him from finishing the planting in that field.

Rick reports that he sleeps better at night knowing he has crop insurance. In 2018, there was a tremendous advantage to buying revenue protection for soybeans. No one could have predicted last winter that a trade war would cause soybean prices to plummet. The base price set for soybean in March of 2018 was \$10.19. The harvest price as set at \$8.60. Protection this year will be greatly appreciated by anyone who had the foresight to insure. The difference in corn prices was not as dramatic with a base price of \$3.96 and a harvest price of \$3.68

but at least there is potential for some additional help in a soft market.

**For more information:**

To find a crop insurance agent, visit the RMA online locator at: <http://cli.re/gzPVWV>. For more information on crop insurance options in New York, visit: <https://agriskmanagement.cornell.edu>.

*Cornell University delivers crop insurance education in New York State in partnership with the USDA, Risk Management Agency. This material is funded in partnership by USDA, Risk Management Agency, under award number RM18RMETS524C018.*

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# Office Hours



Cornell Cooperative Extension  
North Country Regional Ag Team

The Farm Business Management Specialist will be hosting regular "Office Hours" in each county! These give farmers a chance to bring their questions on any of the following topics:

- Accounting
- Financial Statements
- Budgeting
- Business Plans
- Decision Making
- Employee Hiring
- Employee Handbooks
- Human Resources
- Diversification
- Regulation
- Grant Applications
- Project Evaluation
- Book Keeping Systems
- Farm Transition Planning
- Retirement Strategies

Please note that all office hours are from 10AM to 3PM. It is not necessary to make an appointment, however, you can by contacting:

**Kelsey O'Shea at**  
**[kio3@cornell.edu](mailto:kio3@cornell.edu) or**  
**315-955-2795**

**Clinton County**  
Dates: Jan 21<sup>st</sup>, Feb 20<sup>th</sup>,  
Mar 18<sup>th</sup> & Apr 23<sup>rd</sup>  
Location: CCE Office  
6064 NY-22 Suite 5,  
Plattsburgh, NY 12901

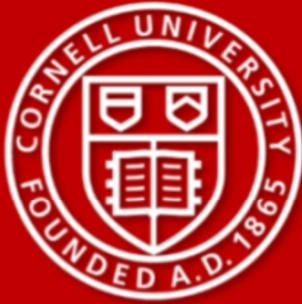
**Essex County**  
Dates: Jan 23<sup>rd</sup>, Feb 19<sup>th</sup>,  
Mar 19<sup>th</sup> & April 24<sup>th</sup>  
Location: Hub on the Hill  
545 Middle Road  
Essex, NY 12936

**Jefferson County**  
Dates: Jan 24<sup>th</sup>, Feb 22<sup>nd</sup>,  
Mar 20<sup>th</sup> & Apr 25<sup>th</sup>  
Location: CCE Office  
203 N Hamilton St  
Watertown, NY 13601

**Lewis County**  
Dates: Jan 25<sup>th</sup>, Feb 21<sup>st</sup>,  
Mar 21<sup>st</sup> & Apr 22<sup>nd</sup>  
Location: CCE Office  
5274 Outer Stowe St  
Lowville, NY 13367

**Franklin County**  
Dates: Jan 29<sup>th</sup>, Feb 18<sup>th</sup>,  
Mar 22<sup>nd</sup> & Apr 19<sup>th</sup>  
Location: CCE Office  
355 W Main St #150  
Malone, NY 12953

**St Lawrence County**  
Dates: Jan 22<sup>nd</sup>, Feb 15<sup>th</sup>,  
Mar 15<sup>th</sup>, & Apr 26<sup>th</sup>  
Location: CCE Office  
2043B NY-68,  
Canton, NY 13617



### Dates and Locations:

February 13th, 2019

Mo's Pub n' Grill  
Malone, NY  
10-3pm

February 14th, 2019

Best Western  
Canton, NY  
10-3pm

# Dairy Day



Dairy Day provides an opportunity for dairy farmers to get together, have some social time with their neighbors, and here updates on what is going on with Cooperative extension and the US and NY Dairy Industry.

### Speakers & Topics

Kelsey O'Shea (*North Country Regional Ag Team*) - **What are my options?**

Beth Meyer (*American Dairy Association North East*) - **Your Dairy check-off program**

Paul Virkler, DVM (*QMPS*) - **Empire State Super Milk Program and Automatic teak-off settings**

Kimberley Morrill, PhD (*North Country Regional Ag Team*) - **Calf health treatment protocols & compliance**

Jamey Hoose (*Director Shipley Center for Innovation Clarkson University*)  
**Farm Collaboration Opportunities with Clarkson University**

Jean Bonhotal (*Cornell Waste Management Institute*): **Composting/waste management**

**Cost: \$10 per person. Lunch is included.**

Please call and register with Tatum Langworthy  
at 315-788-8450 or [t1m92@cornell.edu](mailto:t1m92@cornell.edu) or online at:  
[https://req.cce.cornell.edu/dairyday\\_10512](https://req.cce.cornell.edu/dairyday_10512)

## Cornell Cooperative Extension North Country Regional Ag Team

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.

# Other

## Edible Hemp Foliar Sampling Project 2018

By Justin Reid and Lindsey Pashow, Harvest New York

Hemp, a multi-use crop that has been cultivated for centuries, is increasingly cultivated in New York. 'Industrial hemp' is a non-intoxicant version of *Cannabis sativa* with potential use as fiber, grain or processed consumer products. Hemp is a controlled substance, regulated by the US Drug Enforcement Agency. The previous Farm Bill allowed states to develop pilot programs to research industrial hemp. New York is one of the states with a sanctioned program to study growth, cultivation and marketing of the crop. In NYS, permits for growing hemp are regulated by Ag and Markets under close supervision. Any person interested in growing hemp must become familiar with the pertinent regulations prior to considering growing, and a permit is required. The NYSDAM website is a good place to begin this process:

[www.agriculture.ny.gov/PI/PIHome.html](http://www.agriculture.ny.gov/PI/PIHome.html)

In 2018, CCE worked with two farms, one in Central and one in Northern New York, to begin to understand nutrient dynamics in the production of edible hemp. The end product may be a microgreen for salad style consumption, juice or smoothies; or formulated into other edible products. Although we initially began to work with microgreens, farmers have found interest in edible portions of later stages of crop growth too. In both situations the crop was grown inside a greenhouse; one in mineral soil, the other in potting soil.



Figure 1. Field crop of industrial hemp.

Foliar sampling is a common crop management tool, particularly for greenhouse and high tunnel vegetables. Coupling a soil test with regular foliar tests, allow farmers to observe nutrient trends within the crop and make mid-stream adjustments before deficiencies or toxicities become visible and cause a yield loss. The process is simple; leaf tissue samples are sent to a lab for analysis and results are returned, hopefully within one week, indicating macro, secondary and micronutrients as % foliar

mass or parts per million. These values are plotted within known sufficiency ranges for the crop. In our situation there are no established ranges for hemp, so we are beginning with spinach, another edible greens crop. Farmers and crop advisors can adjust fertilizer or irrigation practices based on these results to keep the crop between upper and lower limits for each nutrient. We collected soil and foliar samples on these two farms on five dates from March through August, 2018. Foliar samples were collected between 14 to 18 days after seeding on plants from 4 to 6 inches in height. Leaves were collected randomly throughout the trays or beds. Remaining samples were collected at around 60 days to gain mature leaves (5 leaves) on pre-flower to lowering stage plants. Samples were analyzed by Agro-One Laboratory in Ithaca, NY. The data shared here is an average of foliar nutrient values throughout the growing season. In this initial year of testing we observed the following trends:

- Both farms were near the lower range of sufficiency for N.
- Hemp grown in potting media tested lower in Mg and Ca.
- The farm with mineral soil was deficient in foliar levels of P and K, due to low soil P and K concentration, high soil Ca and lack of fertilization.
- Both farms showed lower levels of the micronutrient Mn; likely due to high water pH/alkalinity and soil Ca concentrations.



Figure 2 Edible Hemp grown in potting media.

Low foliar N will decrease hemp yield and leaf tissue quality by decreasing photosynthesis, growth rate, leaf color and size. Phosphorus is particularly critical for root growth, which is tied to uptake of all other nutrients. Low K will also decrease total

yield, vigor and leaf color. Nitrogen is highly mobile and in most greenhouse situations must be replenished each cropping cycle. Total N rates per acre not need to be very high for a microgreens crop; 50 lbs/acre may be sufficient. However, if the crop is being grown to maturity this rate could go above 125 lbs/acre. Greenhouses with bench or floor heating may lose N more rapidly due to volatilization. In these cases smaller, soluble doses of N may be most appropriate. Acidification of irrigation water with acid may help foliar Mn levels. Rarely is Mn fertilization required. Rate of acid to inject will depend on a water test of pH and alkalinity. Both soluble N and acid injection require an injector pump within the irrigation system.



Figure 3. Beneficial insects in a New York hemp planting.

This work is based on spinach sufficiency ranges and is a starting point as we learn how to best grow an edible hemp crop. We also see an increase use of hemp transplants (vs. direct seed) for other target uses. Our continued work will contribute to understanding appropriate fertilization of transplanted hemp crops grown for non-edible purposes. If you need help calculating fertilizer application or injection rates please contact us.

Figure 4. Macronutrients at two farms growing edible hemp crops. Red represents upper levels of sufficiency and green the lower limit, based on spinach data. Both farms border the lower acceptable foliar range of nitrogen.

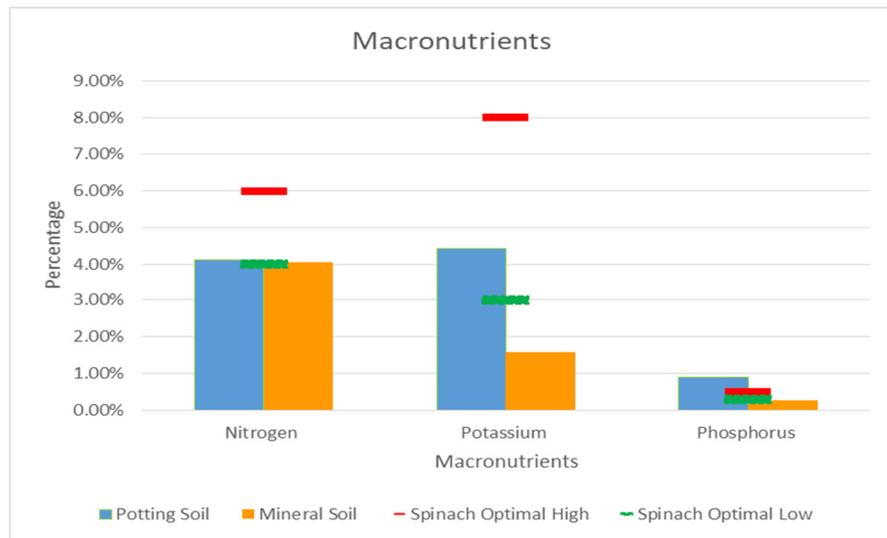


Figure 5. Calcium and magnesium were acceptable at both farms, although the potting media showed lower levels.

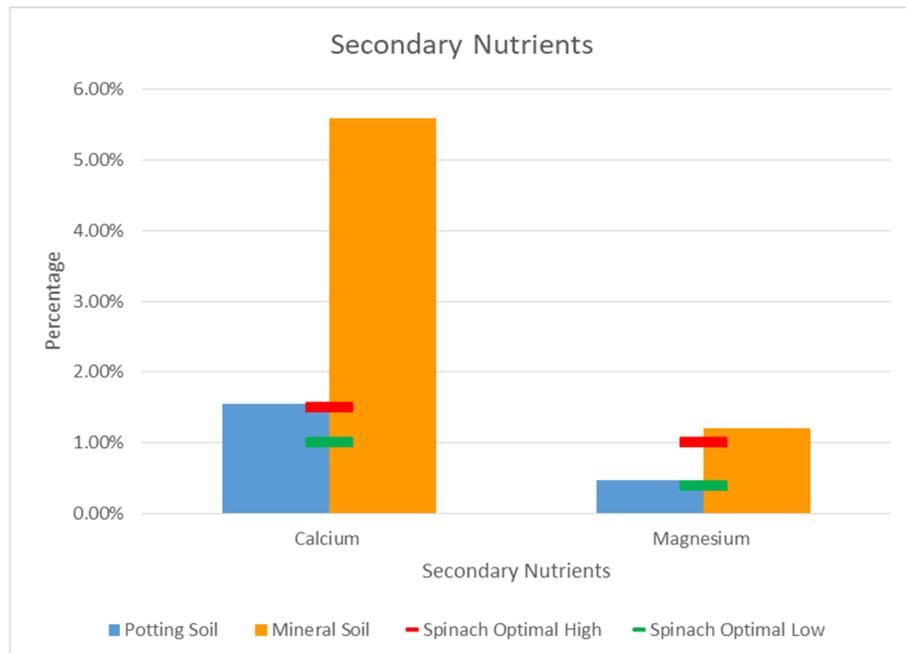
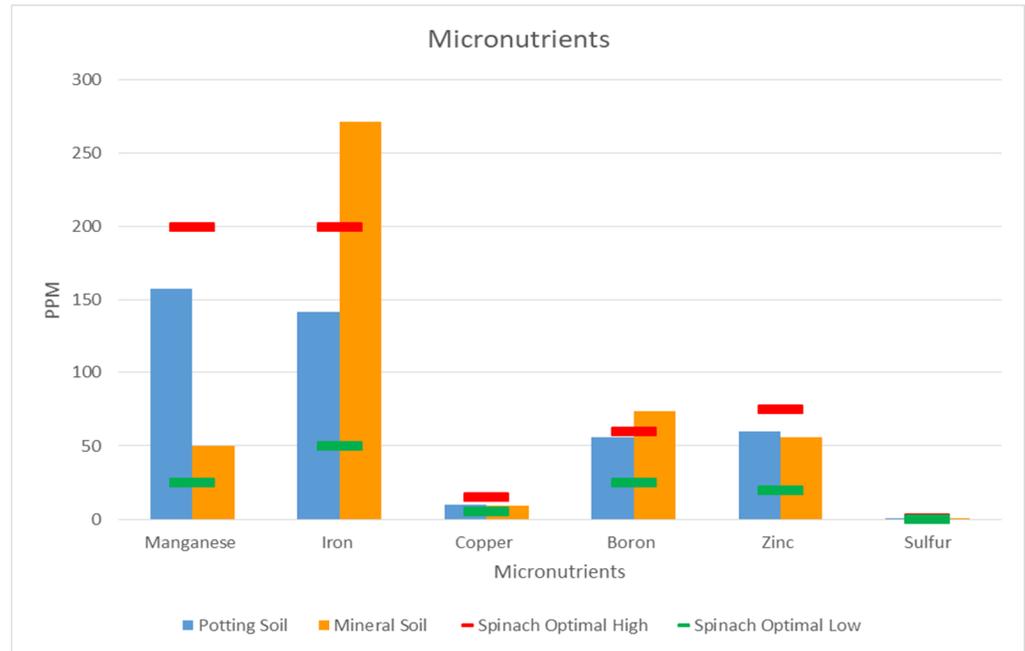


Figure 6. Foliar micronutrient levels at both farms were within acceptable ranges.



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# CENTER FOR BUSINESSES IN TRANSITION

## Adirondack North Country Center for Businesses in Transition: Providing Tools, Resources, and Matchmaking for Transferring Ownership

### Who We Are...

The Adirondack North Country Center for Businesses in Transition addresses the loss of area businesses by providing matchmaking services with potential buyers, access to planning tools and connection with existing services.

Although we call it a Center, it is a dynamic evolving partnership between regional organizations and individuals invested in the retention and future of our businesses and communities.

### Contact Us If...

You are a business owner looking to retire or transfer ownership and you need assistance:

- Navigating available resources
- Finding suitable successors
- Accessing capital

You are an aspiring entrepreneur looking to:

- Purchase an existing business
- Start on a new career path leading to business ownership
- Find out more about employee ownership models and opportunities



**Cornell Cooperative Extension**  
North Country Regional Ag Team



Adirondack North Country Association  
67 Main Street, Suite 201  
Saranac Lake, NY 12983  
518.891.6200, [transitions@adirondack.org](mailto:transitions@adirondack.org)

*The Adirondack North Country Association (ANCA) is an independent not-for-profit organization working to strengthen key sectors of the economy in the Adirondack North Country.*



### **COMMUNITY LIAISON APPOINTMENTS**

#### **The Center for Businesses in Transition (CBIT) Announces the Appointment of Community Liaisons throughout the Region**

The CBIT is growing and is pleased to announce that the following organizations will be working in partnership to implement a strategy of outreach and education to retiring business owners and aspiring entrepreneurs throughout the region.

These organizations will be home to our "Community Liaisons," strategic partners in ensuring successful transitions for three target business audiences; those looking to sell on the open market, intergenerational family transitions and conversions to an employee ownership model.

#### **Community Liaisons:**

Kelsey O'Shea, Cornell Cooperative Extension/North Country Regional Ag Team

Russ Kinyon, Franklin County Local Development Corporation/County of Franklin Industrial Development Agency

Christy Wilt & RaChelle Martz, Hamilton County Economic Development & Tourism/The Hamilton County Industrial Development Agency

Brittany Davis, Lewis County Industrial Development Agency

Mike Besaw, St. Lawrence County Chamber of Commerce

Matthew Courtright & Molly Bechard, Ticonderoga Area Chamber of Commerce

Lead Partner:

Angela Smith, SUNY Canton SBDC at Clinton Community College

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

## What's Happening in the Ag Community

*Grazing Dairy Discussion Group, February 19, 2019, 11-2pm, Extension Learning Farm, Canton*

*Herd Manager's Training, March 5th & 12th, 2019, Canton , see page 5 for more information.*

*Swarming Bees! March 19, 2019, see page 6 for more information.*

*Prevention Training for Employees and Employers, see page 7 for more information.*

*Dairy Day, see page 14 for more information.*

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