

FARM & GARDEN



Cornell University
Cooperative Extension
Chemung & Tioga Counties

NEWS AND NOTES FOR FARMERS & GARDENERS IN CHEMUNG AND TIOGA COUNTIES

January 2019

News From CCE

By Barb Neal, CCE Tioga

Happy New Year!

I always look forward to the winter months—there are so many workshops to participate in and conferences to attend. No matter what your interest is in: native plants, dairy, field crops, maple syrup, invasive species, there is a program for you. This newsletter lists many of these workshops for you.

I am particularly looking forward to having a small group of teens come each Saturday morning to our CCE kitchen and learn the art and science of cooking. We will learn how to make yeast bread, yogurt, preserve food, and more—both the science behind the foods, and the techniques used in the kitchen.

If you have a teenager or a grand-teen, consider joining us this month! Details on the next page. It will be fun, free, and educational.



Inside this issue:

- Winterizing compost
- Grants/loans for farmers
- Pesticides in your home
- Cabling trees
- Winter grazing sheep
- Lots of workshops
- And more!

SCNY Dairy and Field Crops Newsletter: Dairy Digest

Click [here](#) to view the winter issue of the Dairy Digest. There are a LOT of classes for both conventional and organic dairies. In addition, there are articles of interest to all farms—on implementing a sexual harassment policy, the Ag Workforce Development Council's Labor Force Summit, classes on QuickBooks for Farmers, and more.



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Old Skills, New Foods

CCE Tioga was awarded a grant to bring to our county **Old Skills, New Foods**. We will be hold hands-on workshops for middle and high school students that combine science, cooking, and gardening. Since this is a Floyd Hooker grant, there is NO fee for participating in these workshops.

These workshops are stand alone, but we welcome kids to come to every one! This is a multigenerational class, so if you are a grandparent or parent, please come, bring your kids or grandkids and have a blast while learning together and creating community around the kitchen table.

All classes will be in our kitchen space and run from 9 am to noon.

This program was funded by a grant from the Floyd “Vic” Hooker Youth Fund of the Community Foundation of the Twin Tiers, made possible by generous donors since 2003. Note that due to scheduling changes, a few dates have changed.

Please call 607-687-4020 to register or email ban1@cornell.edu

1. **Homemade potato-leek pizza**—we will make our own pizza dough, discuss the microbiology of bread, mill our own flour, discuss how leeks and potatoes can be grown at home, and learn basic knife skills. January 5th
2. **Yogurt, berry and granola parfaits**—we will make our own yogurt and granola, discuss how yogurt is created using live bacteria, learn how to plant and care for blueberry bushes and strawberry plants, and learn about vitamins and minerals in your diet. January 12th
3. **Caprese salad**—we will make our own mozzarella cheese, and pair it with tomatoes and basil for a yummy salad. We will also make our own balsamic and maple salad dressing, discuss how to grow tomatoes and basil, and learn how to read a nutritional label. January 26th
4. **Canning Applesauce**—We will learn the basics of safe food preservation by canning applesauce. We will learn a bit about how to grow apples, and practice peeling fruit. We will also discuss buying food in bulk and how to store it. February 2nd
5. **Combining plant-based proteins**—We will introduce basic nutritional science and why you need a balance of proteins, fats and carbohydrates. We will prepare a protein—rich vegetarian meal and learn place setting as we serve it. We will also discuss vegetable gardening and introduce the concept of Katie’s Krops and Seed to Supper. February 23rd
6. **Learning from Indigenous Cultures**—(TBA)



For more specific information about the Chemung County Master Gardener program, please contact Jingjing Yin at 607-734-4453 or jy578@cornell.edu.

For more information about the Tioga County Master Gardener program, please contact Barb Neal at 607-687-4020 or ban1@cornell.edu.



Introduction to Hydroponics Workshop

Location: Room 110 at CCE Chemung (425 Pennsylvania Avenue, Elmira, NY 14904)

Date: Tuesday January 15, 2019

Time: 5:30-7:30pm

Do you have an interest in learning more about hydroponics? If so, please join us for this introductory workshop at CCE Chemung. Jake Holley and Dylan Kovach of Dr. Mattson's Lab in the Department of Horticulture at Cornell University will be joining and giving us an overview of the different types of hydroponics systems out there today. They will also be able to help answer any questions you may have in regards to getting started in hydroponics. So, come prepared with questions and to take notes!

Cost to attend is \$5 per person. Youth 12 and under are welcome and free. Pre-registration is recommended in order to ensure enough seats, handouts, and refreshments. For more information and to pre-register, please contact Shona Ort, Ag Educator with CCE Chemung, at 607-734-4453 ext 227 or sbo6@cornell.edu.

Keep it Together: Cabling Weak Trees

Paul Hetzler, CCE St. Lawrence

One of the ways Mother Nature keeps the forests healthy and strong is by "letting" trees with poor structure split during high wind or ice load events. Such trees become decayed and die young. Those with better genetics (or better luck, sometimes) are the trees that reach maturity. This selection process is great for woodlands, but it doesn't work quite the same way for trees growing in our yards, streets and parks.

Trees in our landscape have already been selected by people, and in general we have reasons to plant them (trees, that is) in a given location. It takes much effort, expense and time to produce mature shade trees, and we would like to keep them around as long as possible.

No tree is perfect. Sure, saplings probably grow up leafing through *Cosmopolitree* magazine, hoping to look like their "Arbie" dolls someday, but often they develop imperfections. The vast majority of these are benign, but some can be dangerous. To avoid breakage of large limbs and associated flying lawsuits and debris, trees with obvious defects are often removed. But since many problems are a result of our activities, it hardly seems fair to send a mature shade tree to that great arboretum in the sky if there's an alternative.

A common but usually correctable problem is called narrow forks. Somewhere there must be a lovely small town of that name, but we want to avoid narrow forks. These occur where the angle of attachment between trunk and limb, or between two competing (codominant) trunks is very, you know, narrow. The strongest attachments are open, somewhat "U"-shaped, with a wide angle approaching ninety degrees. Narrow forks, or unions, get weaker with age, until eventually a large tear occurs. I saw a lot of major splits that occurred in trees in the 1998 ice storm that were a result of narrow forks.

This type of defect can be fixed when the union is small by a mere snip of a hand pruner. If this is not done, the defect gets weaker over time. If there is a valuable target (swing set, house, Faberge egg) that could be struck if one side splits off, corrective action is needed. Have a professional evaluate the tree. If it is in very bad shape, it may need to go, but if is healthy other than the weak union, a cable system could be installed.

My hat is off to all the capable DIY-ers out there, but

Continued on page 7

How to Winterize Your Compost Pile

By Mary M. Woodsen

Reprinted from https://blogs.cornell.edu/nysipm/2016/11/?fbclid=IwAR19roQDAF1SNgytbb2my2BZXY81ZYrC4Ay06qKLA42DvpS0-a_4sw-0YyE



Let's make compost. It's an earthy topic. Does it matter? Oh, yes. Bagging up organic matter and setting it out for trash is a pity — the moment it's dumped in the landfill, it turns quickly to methane, a greenhouse gas 20-plus times more potent than CO₂. And trash trucks bring tons of it to landfills every day. In 2013 alone, Americans generated about 254 million tons of trash; we recycled or composted about 87 million tons.

Which is all well and good, but we can do better. Compost encourages healthy and balanced populations of soil organisms that can suppress plant pathogens by (good IPM!) parasitizing them or out-competing them for food and water.

Bacteria, molds, mites, and more — these good guys are on your side. But what happens to that compost heap when the ground is frozen or the snow is deep?

Like biannual and perennial landscape plants, soil organisms normally go dormant in winter. Yes, you could keep adding your kitchen scraps and recyclables to the pile. But they'll freeze in place unless you can keep the good guys active through most of the

winter. And it's not that hard.

So while it's still fall, harvest finished compost to make room for winter compost. Then insulate the pile with bags of leaves or bales of straw. Meanwhile, if you want to cut back on trips outside, make a pre-compost bucket.

Think of it as a mini-compost bin for food scraps, old newspaper, and the like. You'll want to mix browns and greens just like you would outside using the "lasagna method" with its alternating brown and green layers for your outdoor compost. (Think of your pre-compost bucket as the "ravioli method.")

Best you chop those food scraps first, though. Because the good guys will slow down a tad when they get chilly, you want to make it as easy on them as you can. Smaller particle sizes give them more surface area to do their work and keep them cozier while they do it. Then come spring they'll really rev up.

Want more info?

Check out:

csetompkins.org/resources/compost-winter-composting — our inspiration for this post
csetompkins.org/resources/compost-lasagna-layer-composting

Or browse online for more:
compostjunkie.com/Compost-blog
compostingcouncil.org
pinterest.com/ertf/lasagna-gardening-and-composting



EQIP Program Deadline Near

The Natural Resources Conservation Service (NRCS) in New York State announces January 18, 2019 as the application cutoff date for the General signup for the Environmental Quality Incentives Program (EQIP) for Fiscal Year (FY) 2019.

Through the EQIP program, NRCS offers financial and technical assistance to participants to implement practices which address priority resource concerns, including soil erosion, water quality and habitat degradation. Focus areas within the EQIP program include the farmstead, soil management, habitat, forestry and grazing. Examples of practices implemented through EQIP include: stripcropping, grassed waterways, forest stand improvement and manure storage facilities. Applicants applying to implement practices to address farmstead resource concerns associated with livestock operations must provide a copy of their Comprehensive Nutrient Management Plan to NRCS by January 18, 2019. Applicants applying to implement forest management practices must provide their Forest Management Plan by January 18, 2019.

NRCS will work with applicants to review potential resource concerns on the land included in the application and to develop a conservation plan to address the identified resource concerns.

Applications accepted after January 18, 2019 will be considered in the next signup. All applications are competitive and ranked based on national, state and locally identified resource priorities and the overall benefit to the environment.

If you are interested in applying for an NRCS conservation program please visit our web site for information on applying at: http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ny/programs/financial/eqip/?cid=nrcs144p2_027058.

You may apply by visiting your local NRCS field office, which can be located using the web site: <http://offices.sc.egov.usda.gov/locator/app?state=NY>.

Risk management webinar offered for dairy farmers

“Focus on Risk for Dairy Farmers” webinar planned for Jan. 24, 12:30 to 1:15 PM

Cornell Cooperative Extension of Cortland County and Cornell CALS PRO-DAIRY are partnering to offer a “Focus on Risk for Dairy Farmers” webinar at 12:30 to 1:15 PM, January 24. PRO-DAIRY’s Thursday webinar series are free and registration is not required.

New York’s dairy farmers manage risks all the time, the largest of which for many over the past four years has

been milk price. USDA’s Farm Service Agency (FSA) has developed tools to help dairy farmers manage milk price risks with varying success, such as the Milk Income Loss Contract program (MILC), Dairy Margin Protection Plan (DMPP), and the improved DMPP of this year. USDA’s Risk Management Agency (RMA) also has tools to help dairy farmers, but these have been adopted less in part because they require communication between a crop insurance agent and the farm, and cost is usually higher, but protection is also higher.

This Thursday webinar will feature dairy farmer Ron Robbins, Owner, North Harbor Dairy, Sackets Harbor, NY and Ed Gallagher, President, DFA Risk Management. Robbins has used many tools to manage milk price risks on his dairy over the years, including those from FSA and RMA, and he has also bought contracts on the Chicago Mercantile Exchange. During the webinar he will share his experiences and which tools he uses now for his farm’s milk protection. Gallagher will review RMA’s new “Dairy Revenue Protection” policy. This is a new policy developed with American Farm Bureau. It is similar to crop insurance offered for field crops, which has helped that industry manage risks for a number of years.

Fay Benson, who works with Cornell University Crop Insurance and Risk Management and Education Program, will host the webinar and share where more information can be found about the Dairy Revenue Protection Policy.

To participate, or for more information about this or other Thursday webinars, visit Cornell CALS PRO-DAIRY at: prodairy.cals.cornell.edu/webinars/. Contact Kathryn Barrett, Sr. Extension Associate – Dairy Education, PRO-DAIRY, by phone at (607)229-4357 or email at kfb3@cornell.edu.

Climate Smart Farming Fact Sheet

Click here for a copy of a four page fact sheet on Climate Smart Farming.

<http://climatesmartfarming.org/wp-content/uploads/2018/11/CSF-Fact-Sheet-Key-Strategies-FinalNov2018.pdf>

Farming is never easy, but it is going to be even more challenging as we face increased rainfall events, weather extremes, and more. Be prepared—the fact sheet will give you steps to take in planning how to be a climate-resistant farm.



issues,” Laquatra said. “Households with crawling toddlers should be concerned, as toddlers will accumulate pesticide residues on their hands and then ingest them due to hand-to-mouth behaviors.”

Previous studies of pesticide residues in homes have highlighted entry routes for chemicals that include tracking with shoes, bare feet, clothing or animal fur; airborne entry; and soil gas entry. Adjacency and proximity to agricultural operations have also been cited as factors responsible for residential pesticide residues because of spray drift. Further, pesticides applied to gardens and lawns can follow these same transport routes into a

New study finds harmful pesticides lurking in NY homes

By Stephen D'Angelo, [Cornell Chronicle](#) October 16, 2018. Above, Clive Howard, Cornell Brand Communication

Despite the existence of chemical-free methods to eradicate pests, Americans use more than a billion pounds of pesticides per year. These chemicals are mostly out of sight and out of mind to unsuspecting homeowners, who are typically unaware of how to prevent potential harm – something new Cornell research is addressing.

In a study published Sept. 22 in *JSM Health Education & Primary Health Care*, College of Human Ecology researchers Joseph Laquatra, Mark Pierce, Alan Hedge and Ann Lemley examined the extent of indoor pesticide pollution in New York state rural homes.

Conducting pesticide analyses as part of a larger effort that studied pollutants in homes and child care facilities, the researchers sampled 350 homes in Chenango, Columbia, Essex, Franklin, Wyoming and Hamilton counties, looking for 15 potentially toxic pesticides commonly used in those areas' agricultural practices, with a likelihood of accumulation in the interiors of nearby homes.

“We found that pesticide residues are ubiquitous in rural homes in New York state,” said Laquatra, professor of design and environmental analysis, who noted that positive results for such chemicals were found in every house tested.

Particularly concerning to Laquatra and his fellow researchers is what is known about these chemicals and their potential harmfulness to humans, especially infants. “Numerous health problems occur from exposure to pesticides, such as cancer, birth defects, leukemia and ocular [vision-related] toxicity, among a number of other health

home.

Once inside a home, according to research, pesticide residues accumulate in dust and degrade at a lower rate than they do outdoors because they are shielded from the effects of rain, sun and soil microbial activity.

According to the study, “[Common Pesticide Residues in Rural Homes of New York State](#),” pesticide education programs could include home maintenance guidelines for prevention – and safe eradication – of accumulated pesticide residues, of which consumers may not be aware. Emphasis, said Laquatra, should be placed on the importance of keeping the home clean.

“When building new homes or remodeling existing homes, install hard surface, easy-to-clean floors, such as hardwood, tile or resilient flooring. Keep floors clean,” he said. “Have a home entry system that captures soil and pollutants at the door. This entry system should consist of a hard-surfaced walkway, such as a paved sidewalk, a grate-like scraper mat outside the entry door, and a highly absorbent doormat that will trap pollutants.”

These best practices, according to Laquatra, can have vast education and public policy implications to help minimize exposure to residents, not only in New York state but across the country.



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Stephen D'Angelo is assistant director of communications at the College of Human Ecology

Learn how to grow your farming business with Cornell Small Farms Web-Based Instruction



Looking for a last minute gift, or even a gift for yourself? Consider registering for our next block of online farming courses, which start the week of January 14.

Register now to learn about financial planning, markets and profits, commercial sheep, fruit trees, woodland mushrooms and vegetable farming.

Holistic Financial Planning

Struggling to make your farm operation profitable without driving yourself into the ground? This financial planning course will help you with the delicate act of balancing healthy profits with healthy land, a healthy farm family and personal life. This course is intended for farmers with at least one season of experience and some record income and expenses.

Markets and Profits

Have an idea for a farm enterprise but not sure if it's feasible? This online course will help you explore the potential markets and profitability of your ideas. It is perfect for beginning farmers in their first few years of production who are looking for help exploring marketing, developing budgets, and exploring tools to help achieve profitability.

Commercial Sheep Production

Have sheep or thinking about getting a flock? Producers of all experience levels will learn something in this course, from production to marketing, processing, and sales of lamb and sheep products. There is no one right way to raise sheep — just a palette of options for you to choose from, to suit your farming objectives and lifestyle.

Tree Fruit Production

Planting and management of apple and other tree fruit orchards is a rewarding hobby and business, but important considerations must be met to ensure success. This course's content includes site selection and management, rootstock and cultivar selection, orchard systems, pest and nutrient management, and harvest considerations.

Woodland Mushroom Cultivation

Many new farmers get started with poultry because it's a relatively low-investment enterprise with a fairly quick revenue turnaround. The margins can be slim though, and farmers need to develop the necessary skillset to produce a product that is both safe and profitable. This course will help you get started in building a successful poultry enterprise.

Veggie Farming Part 2 – Season-Long Care to Harvest

This follow-up to our Veggie Farming Planning course will

cover vegetable production from transplanting to harvest, including information on in-season fertility, integrated pest management, weed control, harvesting strategies, and tips for marketing your products. Be prepared to create an in-season fertility and pest/weed control plan as part of this course.

Registration closes Sunday, January 6 at 11:59 p.m. EST.

We strongly encourage you to register early to avoid being shut out of courses.

Cabling, continued....

leave your ladder, baling wire collection and rusty turnbuckles where they are. I'm not digging for jobs here because I no longer work as an arborist, but really, you need to hire a professional to install a cable system. Cabling must be done right or the problem could be made worse. And there is a right way to do it. The American National Standards Institute (ANSI), which has specs for home wiring, water lines and steel bridges, also has standards for tree cabling. Cable diameter, type of eye, size and type of bolts to use are all specified.

It's critical that the cable is installed at the right height. It should be placed two-thirds to three-quarters of the way from the weak fork to the top of the tree. Of course, the cable is not wrapped around the trunk, since that would damage the trunk and weaken or kill the tree above that point. Either drop-forged eye bolts or J-shaped lag screws are used to secure the cable ends to the tree. The correct sized hole is drilled through the tree (for bolts) or into the tree (for lags). Bolts are stronger, and are used for larger wood and for any case where decay inside the trunk is suspected. Lags are cheaper and easier to install but are acceptable only for small wood where there is no evidence of decay.

Cabling may be used occasionally in other ways, for example a whole tree with a trunk defect may be cabled to other trees to support it. And some cables today are synthetic material, rather than steel, to allow for more natural limb movement.

Lest you think your tree will look like a Frankentree, don't worry. A proper cable system is inconspicuous, even to the point where you may have to squint through binoculars to be sure it was actually installed. For a fraction of the cost of a removal, and a tiny fraction of the cost of emergency removal plus damage repair, most trees can get an extended lease on life through cabling.

While under extreme conditions even a perfect system may fail, I've never seen a properly installed cable system fail. I have, on the other hand, seen many homemade or substandard ones break, rip out of the wood, or otherwise fail.

For information on cabling, contact your local Certified Arborist or other tree care professional. Start with companies which belong to trade organizations like the International Society of Arboriculture (ISA) or the Tree Care Industry of America (TCIA). Ask them to show you their copy of the ANSI cabling standards, and insist on proof of insurance directly from their carrier. May you and your trees keep it together to a ripe old age.

Considerations for Winter Grazing Your Sheep

By Ulf Kintzel, Winter 2015 Cornell Small Farm Quarterly
Source: <https://smallfarms.cornell.edu/2015/01/12/considerations-for-winter-grazing-your-sheep/>

Winter is here once again. In this article I would like to share what I have learned over the years when it comes to grazing in cold and freezing conditions and with snow on the ground.

Snow on the ground does not necessarily mean that the grazing season ends. Sheep have the ability to dig through the snow to get to the grass. It matters, though, what kind of snow it is. Light and fluffy snow can be as deep or deeper than a foot and there will be no problems for the sheep to dig through. In fact, they will do so with relatively little effort. Wet snow takes more of an effort. Drifted snow is even harder and at times impossible for the sheep to dig through even when there is less than a foot of snow on the ground. Ice on top changes everything, again for the worse. Sheep don't have the weight and force of cattle. No matter how little snow there is on the ground, it will be impossible for the sheep to get to any forage when there is a solid sheet of ice on top.



The more grass underneath the snow, the more it is worth it grazing in the winter. Photo by Ulf Kintzel

The length of the forage underneath matters as well. The longer the grass, the more it will stick out and entice the sheep to make an effort to dig. Secondly, for each time the sheep dig they get to more forage when the grass is long versus short. How does that matter? Digging causes the sheep to burn some extra energy. It must be worth the effort. Also, ice will have a harder time forming a coherent sheet when there are bunches of grass sticking out. The ice

breaks at these bunches and gives the sheep a starting point to dig.

How can one assess if there is enough forage for the sheep to meet their needs? Whenever I am not sure I simply put a couple feeders with round bales of good first-cutting hay out for my sheep. If the grass is good and fairly easily accessible, they will hardly eat any hay. If they need it, they will eat it. Just be careful, don't put the fanciest hay or good baleage out. The sheep might choose convenience over grazing when the stored forage is of the best quality.

I still work with my electric nettings during the winter, at least until late December or early January when I run out of hay or when the snow gets too deep. A common comment I get from other producers is that they can't do that since their ground is frozen and they cannot work with electric nettings anymore. In pastures with short grass the ground indeed freezes up early on. Tall grass will keep the frost off of the ground much longer than short grass. The difference is indeed stunning. Short pasture may be solidly frozen while pasture with long grass will have very little frost on the ground. A snow blanket not only keeps the ground from freezing, but it also takes moderate frost back out of the ground. Also, I never step the double-spiked posts fully into the ground when I expect frost or have some already. That makes the removal easier. The occasional post that is frozen solidly into the ground can be removed by using a (e.g. a three-foot piece of a ground rod) as a path the double spike.

Major concern when we have heavy frost and no snow on the ground. Bringing water to the sheep to let them drink can become a cumbersome daily chore. That all changes when there is snow on the ground. A field trial in Wisconsin examined if snow, as the only water source, is sufficient for sheep to maintain themselves. The results were published in "The Shepherd" magazine. A group of ewes and yearlings had snow as their only water source while a comparison group received water from a trough in the winter. In the following spring, there was no difference in weight among adult ewes, while the yearlings in the snow didn't gain as much as those re-

ceiving water. Snow can be a fine water source but here are some tips: The snow should be clean and soft. It should not be solidly frozen, covered with ice, or dirty. I do not advise having snow as the only water source for lactating ewes. However, ewes with young lambs are likely to be in the barn at that time of the year anyway where water can be given and can be kept ice-free. Lastly, if it is convenient and an open water source can be provided even though there is snow on the ground, you will find that the sheep prefer drinking water over eating snow. However, that in itself does not mean that the sheep cannot meet their water needs by eating snow.

Snow also changes the eating behavior of sheep. They usually eat very selectively. With snow on the ground, they eat whatever they can get.

A word of caution when grazing sheep in the winter: While cold temperatures generally do not bother well-fed sheep in full fleece, cold winds do. One must be prepared to provide shelter on a moment's notice if the weather changes. Check the weather report frequently. When it is cold and the wind starts hauling, I want to make sure that my sheep have the appropriate shelter. This does not necessarily mean that they need to be locked up in the barn. A thick hedgerow that breaks the wind can be used to provide the necessary animal comfort.

Ulf owns and operates White Clover Sheep Farm and breeds and raises grass-fed White Dorper Sheep without any grain feeding and offers breeding stock suitable for grazing. He is a native of Germany and lives in the US since 1995. He farms in the Finger Lakes area in upstate New York. His website address is www.whitecloversheepfarm.com. He can be reached by at ulf@whitecloversheepfarm.com or by phone at 585-554-3313.

Low cost funds available in the Southern Tier

Working Capital Loans - \$5,000 to \$100,000. Term of 5 years. Fixed at 75% of prime rate at time of approval. Current rate 3.94%. Requires 10% cash equity, and collateral values at 120% of loan amount (\$50,000 loan requires securable assets (equipment, real estate, cash) of \$60,000).Eligibility – For profit businesses located in Steuben, Schuyler, Chemung, Tioga, Tompkins, Broome, Chenango, Delaware Counties. Contact gminer@redec.us

Agricultural Loans - \$ 50,000 to \$250,000. Term 5-15 years. Fixed at 75% of Prime rate at time of approval (Current rate 3.94%). Requires 10% cash equity, and collateral values at 120% of loan amount (\$50,000 loan requires securable assets (equipment, real estate, cash) of \$60,000).

Eligibility – Agricultural businesses – growers, processors, farm markets, wholesale distributors, dairy, grapes, hops,

hemp, meat, cheese, etc. located in Steuben, Schuyler, Chemung, Tioga, Tompkins, Broome, Chenango, Delaware Counties. Contact gminer@redec.us

\$1 Million Available for New Farmers in New York

Empire State Development (ESD) and the New York State Department of Agriculture and Markets have announced \$1 million in funding is available to assist early-stage farmers through the New York State New Farmers Grant Fund.

The program, now in its fifth year, promotes growth and development in the state's agriculture industry. To date, \$3.27 million has been awarded to nearly 90 farms throughout New York State to expand their operations and improve their profitability.

The \$1 million New Farmers Grant Fund will provide grants of up to \$50,000 to assist with up to 50 percent of eligible project costs. To qualify, all farm business owners must be within the first ten years of having an ownership interest in any farm business, and the farm must have a minimum of \$10,000 in income from sales of products grown or raised on the farm. Eligible project costs include the purchase of machinery, equipment, supplies, and the construction or improvement of agricultural structures.

The deadline for submission is January 25, 2019.

Learn More & Apply

New farmers are a critical piece of the overall agricultural landscape in the State and the future of the industry. To further support the State's new and beginning farmers, the Department of Agriculture & Markets launched a New and Beginning Farmer One Stop Shop in 2017. The web-based resource helps new and beginning farmers connect to the resources and services that can help their businesses thrive.

Questions about the grant program? Contact Bonnie Devine at nyfarmfund@esd.ny.gov.



Study reveals natural solutions to combat climate change

By Matt Hayes *Cornell Chronicle* November 14, 2018

Annual greenhouse gas emissions from all U.S. vehicles could be absorbed by forests, wetlands and agricultural lands – erasing a fifth of all greenhouse gas pollution, according to new research exploring natural climate solutions for the United States.

Peter Woodbury '87, M.S. '90, Ph.D. '02, senior research associate in the College of Agriculture and Life Sciences, is a co-author on research published Nov. 14 in *Science Advances*.

The researchers analyzed 21 natural ways to mitigate climate change. They found that adjusting those natural management practices to increase carbon storage and avoid greenhouse emissions could equal 21 percent of the nation's current net annual emissions. Increased reforestation could be equivalent to eliminating the emissions of 66 million passenger cars, according to the findings.

Improved management of existing croplands has an important role to play, according to the researchers. Woodbury, who led the cropland nutrient management portion of the study, and his colleagues found that many agricultural practices can significantly reduce greenhouse gas emissions.

Widespread adoption of cover crops – plants grown on farm fields when they would normally be left bare – aids in carbon sequestration and improves soil health, crop yields and yield consistency. The researchers also pointed to improved nutrient management practices that apply fertilizer when and where the crop needs it, using precision agriculture techniques.

These improved practices could reduce nitrogen use 22 percent, leading to a 33 percent reduction in field emissions and 29 percent reduction in upstream emissions with additional benefits for soil, air and water quality. In many cases, these practices also improve profitability for farmers.

“We have demonstrated that agriculture and forestry have real potential to both avoid greenhouse gas emissions and also remove carbon dioxide from the atmosphere and store it in plants and soil. At the same time, these practices have many other benefits such as improving soil health and water quality by reducing nutrient pollution of fresh water and the coastal zone,” said Woodbury, who develops models to quantify the sustainability of agricultural and forest ecosystems. Woodbury is a fellow at the Atkinson Center for a Sustainable Future.

The researchers pointed to biochar as one method with high potential, although further research is needed to overcome cultural, technological and cost barriers. In May, Cornell opened the largest pyrolysis kiln of its kind at a U.S. university to study the uses of biochar, a solid, charcoal-like material formed by heating biomass in the absence of oxygen. Biochar can help soil retain water and nutrients, as well as promote drainage when conditions are wet.

The researchers say that, along with reducing the impact of global warming, natural climate solutions have the potential to improve air and water quality, flood control, soil health and

wildlife habitats.

Other solutions include: allowing longer periods between timber harvest to increase carbon storage; increasing controlled burns and strategic thinning in forests to reduce the risk of tree-killing fires; and reducing urban sprawl to preserve forests.

“These 21 natural climate solutions are really important because they can greatly reduce greenhouse gas emissions in the U.S. and the world while also providing other benefits including clean water, clean air and biodiversity,” said Woodbury.

Matt Hayes is managing editor and social media officer for the College of Agriculture and Life Sciences.

Big picture look at climate change impact on U.S. agriculture: Midwest at risk

By David Nutt | December 12, 2018

A new Cornell-led study shows that Midwest agriculture is increasingly vulnerable to climate change because of the region's reliance on growing rain-fed crops.

Ariel Ortiz-Bobea, assistant professor of applied economics and management and CoBank/Farm Credit East Sesquicentennial Faculty Fellow in Production Economics and Sustainability, set out to assess the impact extreme weather is having on agricultural productivity in the United States. While previous studies have looked at the vulnerability of individual field crops, which make up one-third of the country's agricultural output, researchers haven't addressed the whole scope of agricultural production, including livestock, at the national level.

“We're trying to get a big picture idea of what is going on,” said Ortiz-Bobea. “The data captures every state's agriculture over the past 50 years. If you see in the aggregate data that something big is happening, this really captures massive processes that are affecting many people at the same time.”

The resulting paper, “Growing Climatic Sensitivity of U.S. Agriculture Linked to Technological Change and Regional Specialization” published in *Science Advances*, pinpoints the specific regions in the U.S. that are growing more sensitive to extreme climate shocks. The area of greatest concern is the Midwest, where rain-fed field crops like corn and soybeans have become increasingly vulnerable to warmer summers.

To get this panoramic snapshot, Ortiz-Bobea and his team used state-level measures of agricultural productivity that capture how inputs – such as seeds, feed, fertilizer, equipment and herbicides – are converted into economic outputs. The researchers mapped that information against nearly 50 years' worth of climate data from 1960 through 2004, essentially seeing what would happen if weather was treated as an additional input.

The results show a clear escalation in climate sensitivity in the Midwest between two distinct time periods. In the 1960s and '70s, a 2 degree Celsius rise in temperature during the summer resulted in an 11 percent drop in productivity. After 1983, however, the same rise in temperature caused productivity to drop 29 percent.

While these damaging summer conditions usually only occur six percent of the time, the researchers indicate that an additional 1 degree C warming would more than quadruple their frequency to roughly one of every four years.

“Losing almost half your profit every four years? That’s a big loss,” said Ortiz-Bobea, a 2017-18 social sciences, humanities and arts fellow with the Atkinson Center for a Sustainable Future.

One of the reasons the Midwest is growing more vulnerable to drastic climate variations is because its agriculture industry is increasingly specialized in crop production, like nonirrigated cereal and oilseed crops.

“Specialization in crop production is a compounding factor,” said Ortiz-Bobea, who collaborated on the paper with Erwin Knippenberg, a Cornell doctoral student in the field of applied economics and management, and Robert G. Chambers of the University of Maryland.

“Most of the agriculture in the Midwest is corn and soybeans. And that’s even more true today than it was 40 years ago,” Ortiz-Bobea said. “That has implications for the resilience to climate of that region, because they’re basically putting all their eggs in one basket, and that basket is getting more sensitive.”

Meanwhile, growers in the west, southwest and southern plains generally cope better with climate shocks due to their intensive use of irrigation. Those regions are also relying on livestock production and have developed effective methods for helping cows cope with heat stress, like fans and sprinkler systems. In effect, it’s easier to care for your cow than your crops.

“If you’re in the Midwest and it doesn’t rain and you don’t have irrigation, you’re in trouble, right?” Ortiz-Bobea said. “There’s nothing you can really do about that in the middle of a drought.”

One important caveat Ortiz-Bobea notes is that his team was not able to capture the effect of prolonged multiyear droughts, therefore possibly understating the true long-term sensitivity of irrigated agriculture and animal production.

“The advantage of having this type of aggregated data is that it summarizes so much information, but obviously we may be losing many nuances,” he said, adding that such a big-picture view has equally big implications for policymakers. “You want regions that are more productive in a particular activity to specialize in those activities, but that could make the overall system more risky. So you have to think about risk-sharing across different regions in the U.S.”

In addition to analyzing past and present impacts of climate change on agriculture, Ortiz-Bobea is also looking to the future.

A separate paper he wrote with Jesse Tack of Kansas State University, published last month in *Environmental Research Letters*, examines the rise of maize yields in the U.S. resulting from the widespread adoption of genetically engineered seeds beginning in the 1990s and asks whether another such revolution will be needed to offset the projected yield losses under climate change. The short answer is yes.

“If these things materialize like the climate models are saying, you would need to have a sustained growth in yields that will need to exceed the historical rates we’ve seen over the past several decades,” Ortiz-Bobea said. “Otherwise you would have to increase more inputs – more fertilizer, more land – in order to have the supply to meet the demand of our rising population. Because the changes are coming – changes in temperature, changes in precipitation, and at a different magnitude than what we’ve seen.”

Both studies were partially funded by the Atkinson Center for a Sustainable Future through its Faculty Fellowship for the Social Sciences, Humanities, and the Arts program.

Ariel Ortiz-Bobea, assistant professor of applied economics and management; vid Nutt is managing editor of the Atkinson Center.



Above: the Pounder Garden at Cornell Botanic Gardens. The garden uses a high tunnel to study and demonstrate what gardening in a warmer world will be like.

CALLING FARMERS & FARM WORKERS



Do you live or work in Tioga County as a farmer or farm worker? If so, we need you!

WED., JAN. 9, 2019

THE CANDOR FIRE HALL



6:00 - 7:00PM

74 OWEGO RD, CANDOR

TIOGA TELLS FOCUS GROUP DISCUSSION

Open to all farmers and farm workers in Tioga County! We want to hear your stories about quality of life in Tioga County. A meal & refreshments will be provided, and the session will be very casual. Your stories will contribute to the completion of an assessment project intended to identify the strengths and challenges impacting life in our County.

INTERESTED RESIDENTS CAN SIGN UP BY:

CALL 607.687.8614

TEXT 607.761.4848

OR EMAIL

DHUTCHISON@RHNSCNY.ORG



Tioga Tells is a quality of life assessment project supported in partnership by Tioga Opportunities, Inc., Tioga County Public Health, and Rural Health Networks of SCNY



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News, Notes and Workshops for Tioga and Chemung County Farmers and Gardeners

Grow Your Farm Business Course Series

What: Grow Your Farm Business Course Series

When: Wednesdays 6 – 9pm, January 16 – March 20, 2019

Where: Just Be Cause Center, Ithaca NY

Course Fee: Sliding Scale

Register: <https://groundswellcenter.org/farmbusiness>

Ithaca, NY – Enroll in Groundswell Center for Local Food & Farming's *Grow Your Farm Business Course*, which includes presentations, activities and farmer panels aimed at teaching students the core pieces of planning a farm business. Session topics include goal setting, assessing financial feasibility, marketing, and more in order to create a business plan! Woven into the curriculum are topics of equity and food justice in the food system, including examples of realistic ways to approach these within the scope of your business models. Also hear about resource opportunities from local and Federal farm support agencies. This course is designed as a 10-week *intensive*, however, sessions are also available for *individual* enrollment.

Students enrolled in the 10-week intensive gain access to individual business guidance and consultation from course instructors, develop a strong farmer to farmer network and have the opportunity to present the business plan developed in this course to instructors and peers.

This course is taught by a team of business instructors, farmers and social justice leaders. Check online to learn more about this year's instructors and course schedule.

Register by January 2nd at <https://groundswellcenter.org/farmbusiness> or by calling 607-319-5095.

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Spotted Lanternfly a learn more session

January 15th, Tuesday from 9-11AM in Room 120 Human Services Complex Montour Falls. Guest speaker, Mark Whitmore is a Forest Entomologist in the Department of Natural Resources at Cornell University. Mark started his career at the University of Washington studying the natural enemies of Spruce beetles in Alaska. He then studied at UC Berkeley, focusing on Biological Control of forest pests, researching parasitoids of pine bark beetles. Mark has been at Cornell since 1989 and currently works with professional land managers, state and federal agencies, local government officials, and concerned citizens to help them understand the issues and strategies for minimizing the impact of non-native invasive insects such as the Emerald Ash Borer and Hemlock Woolly Adelgid. Mark is currently the director of the New York State Hemlock Initiative and the Hemlock Woolly Adelgid Biocontrol Research Lab at Cornell.

Contact: Roger Ort RLO28@cornell.edu for more information

Beginner Maple Production Workshop

January 17, 2019, 6:00 PM - 8:00 PM. Mr. Stephen Childs, New York State Extension Specialist in the Department of Natural Resources at Cornell University; will be the presenter. The workshop will cover a variety of aspects of maple syrup production including: why make maple syrup, tree identification, tree health, tapping, sap collection and handling, boiling, energy efficiency, finishing and grading syrup, canning, marketing and regulations. This workshop is aimed at the small or beginning maple producer and would be useful to the homeowner looking to tap a few trees in the backyard or someone wanting to start small-scale commercial maple production. Registration is required. To register, call Seneca County CCE at (315) 539-9251, email seneca@cornell.edu, or register online at: https://reg.cce.cornell.edu/SenecaMaple2019_245 Location—Vince's Park Corner of Rte 318 and 5 & 20 Seneca Falls, New York 13148

Save the Date for the 2019 Becker Forum on Farm Labor

Farm worker housing, labor law compliance, and the federal guest worker program (H-2A) are key themes for the 2019 Becker Forum. The event will take place on Monday, January 14 at the Holiday Inn in Liverpool, New York. Employer compliance with new sexual harassment prevention laws will also be a prominent topic.

Featured speaker Lynn Jacquez, from the CJ Lake law firm in Washington, DC will address what policy positions to expect from the new Congress and the Administration in the year ahead. She will also address immi-

gration enforcement trends and worksite issues that are important for farm employers.

Three presentations will focus on farm-provided employee housing. Nancy Hagopian from the NYS Department of Health will provide recommendations for improving existing housing. Ed Urbanick from Farm Credit East will discuss financing for construction and renovation of housing. A featured farm employer panel will discuss best practices for managing worker housing.

The forum will also provide information related to the H-2A guest worker program, including how some dairy farms successfully using it to access workers. Current changes in the H-2A program will be reviewed and information will be provided on how to effectively hire foreign-born workers through the program.

Attorney Michael Sciotti from the Barclay Damon Law Firm in Syracuse will inform farm employers about what they must do to comply with New York's new regulations on sexual harassment prevention policies and training.

At the end of the afternoon there will be an opportunity for questions and discussion regarding critical workforce issues. For a complete agenda and to register go to <http://nysvga.org/expo/information/>, or email nysvegetablegrowers@gmail.com.

Podcast by Cornell Cooperative Extension Explore NY Farming Topics

The "Extension Out Loud" podcast features CCE agriculture specialists across the state discussing topics like growing conditions, the Farm Bill, and more. [Listen now.](#)

2019 New York State Maple Producers Winter Conference

January 4 and 5 at the NY State Fair Grounds in Syracuse. A producer-focused 2019 NYS Maple Conference with practical and hands-on sessions for maple farms to enhance existing and expanding operations. Features 40 educational sessions on a wide variety of topics and a trade show with 110 vendor booths. Friday night workshops focus on marketing and maple candy production followed by a maple equipment auction. For more information visit www.cornellmaple.com

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2019 PESTICIDE TRAINING AND RECERTIFICATION CLASSES

February- A series of pesticide training and recertification classes are being offered by Cornell Cooperative Extension. Anyone interested in obtaining a pesticide certification license and meets the D.E.C. (Department of Environmental Conservation) experience/education requirements or current applicators seeking pesticide recertification credits should attend. This training is NOT a 30-hour certification course for commercial licenses. The Pesticide Training and Recertification classes will be held at Cornell Cooperative Extension – Ontario County, 480 North Main Street, Canandaigua, NY 14424. The classes will be on Wednesdays, February 6, 13, 20, 27, 2019 from 7:00 pm to 9:30 pm with the exam being offered on Wednesday, March 6, 2019, from 6:30 pm – 11:00 pm. To receive registration material or for additional information, contact Cornell Cooperative Extension of Ontario County at (585) 394-3977 ext. 427, email nea8@cornell.edu or ext. 436, email rw43@cornell.edu The registration form and more information is available on-line at www.cceontario.org

Respirator Fit Testing- By the DEC Region 8, Finger Lakes- For Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne and Yates. Held at CCE Ontario County, 480 North Main Street, Canandaigua, NY. To make appointments please call 607-547-6023. For more information please visit: https://flgp.cce.cornell.edu/events.php?date=05_2018

Ithaca Native Plant Symposium—check here for conference information: <https://www.ithacanativelandscape.com/>



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