FARM & GARDEN

Cornell University
Cooperative Extension
Chemung & Tioga Counties

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

February 2018

News From CCE

By Barb Neal, CCE Tioga

March—it comes in like a lion and leaves as a lamb. To me, it can be one of the more challenging months—unpredictable weather that veers from snowy and cold to mild and inviting. All of us are ready for spring to arrive, but have to hold back from working the soil—it is just too wet.

This newsletter has articles that mimic this lion/lamb dichotomy. There is an important article about recognizing stress in farmers—a growing issue in this era of historically low milk prices, unending increases in costs and the uncertainty of farming in a changing climate. Our counties depend on our farmers to grow healthy and nutritious food, yet they struggle to make ends meet. Farming is always a challenge, but it seems like the challenges grow each year.

On the brighter side, we know that spring is coming, and with it, our spirits are lifted by the greening of the earth and trees. We look forward to longer days of sunlight—which provides us the time to work the land and garden and feel once again the rejuvenating sense of working good soil.

Our CCE educators are working hard to bring you programming and expertise to help you make the most of your land and improve your community. We welcome Missy Bidwell to the CCE Tioga staff. Missy has long experience as a greenhouse grower for Cornell and a passion for growing vegetables for the community. She will be vastly increasing our outreach to school-age children and our community through programs that teach how to grow your own food.

As always, we welcome your call, email or office visit—our job is to help you, the farmer and the gardener, thrive. Happy spring!

Inside this issue:

Photo from http://climatechange.cornell.edu/tools-resources/agriculture-resources/

Barb Neal, CCE Tioga Agriculture and Horticulture Educator, ban1@cornell.edu

Missy Bidwell, CCE Tioga Community Food Systems Educator

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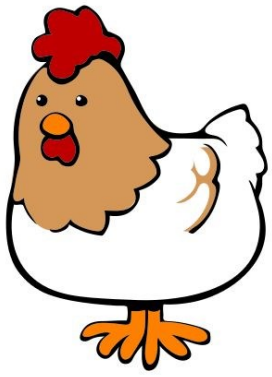
Homesteading Series in Tioga County



Join us to learn how to be more self-sufficient this year! Learn how to grow your own fruits and berries, enjoy farm fresh eggs and meat, and even process your own produce!

Saturday, March 10th 9 am to 11 am **Starting Your Home Apple Orchard**

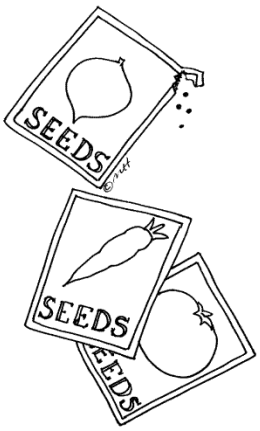
Saturday, March 31th 9 am to 11 am **Pruning Young Apple Trees** (a hands-on, outdoor workshop)
Note—this class is at a new date.

All classes will be held at the CCE Tioga Offices (56 Main Street in Owego). There is a fee of $5 per class., except for the seed swap, which is free. Bring your kids—the can attend for free.

If you wish, join us at a local Owego restaurant for lunch after the classes wrap up for the day. Buy your lunch, then join us around a table for conversation, sharing and connection. Meet with other homesteaders in the county! Share stories and tips.

Register for the classes at: 607-687-4020

For more information and to see the latest list of classes, visit: http://tioga.cce.cornell.edu/



Seed A Rama!

Free Seed Starting Open House—Go home with a tray of seeds for your garden!

Want to learn how to start your own seeds? Would you like to have a free tray of seeds and seed starting materials? Join us April 28th anytime between 9 and noon at the Tioga County Fairgrounds Youth 4H Building.

Bring your friends! Children welcome and encouraged!

Everyone goes home with a tray or two of started seeds. Bring your own seeds to start, or we will provide some veggie seeds.

Workshop: Seed Starting
Starting your own seeds is a cost effective way to grow a greater variety of plants for your garden. Join Cornell Cooperative Extension of Chemung County to learn how to start seeds successfully. The topics we will cover include techniques for starting seeds indoors, proper care, lighting and watering, and how to prepare your seedlings for transplant.
This workshop will be offered on: March 9th, 2018; 2:00 – 3:00 PM

Place: CCE Chemung, Conference Room. 425 Pennsylvania Avenue, Elmira, NY
Workshop fee: Free, but a $3 suggested donation helps support our Horticulture program.

Registration is required. Please contact Chemung CCE at 607-734-4453, or jy578@cornell.edu, and mention your preferred workshop date.

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.

Seed-to-Supper – Teach people how to grow their own food

Are you passionate about growing vegetables? Are you interested in helping beginning gardeners in Tioga County to grow their own food as well?

Cornell Cooperative Extension of Tioga County will train volunteers to become Seed-to-Supper volunteer educators to lead free gardening classes in their own communities. The training program will prepare Seed-to-Supper volunteer facilitators to teach free vegetable gardening classes in their own communities.

Volunteer facilitators will gain familiarity with the Seed-to-Supper curriculum and learn hands-on activities that they can use when teaching the classes in their communities.

Seed-to-Supper volunteers will work in small groups to lead the classes, and receive all the materials needed to run the classes. Topics include planning the garden, soil preparation, composting, planting, garden maintenance, pests and diseases, and harvesting.

There is no cost for the training, and the gardening classes held in Tioga County communities will be offered for free as well. For more information, call Missy Bidwell at 607-687-4020.

See page 4 for a series of Seed to Supper gardening workshops in Chemung County!

Why houseplants suffer in winter

By Sue Gwise, Horticulture Educator, CCE Jefferson

Why do my houseplants look so dull during the winter? Sometimes they even die. What can I do?

Once the days begin to get shorter and autumn approaches, houseplants respond in much the same way trees do. Their growth slows down, flowering stops and some may even drop large numbers of leaves. All of these "symptoms" are natural reactions to changes in the environment.

In the spring and summer, houseplants are growing. In the winter, they are "at rest." This rest period is a good thing that is needed by many plants. Unfortunately, many problems also can crop up during the winter. Low humidity is the biggest problem. In the spring and summer, the heat is off and windows are open. There is more moisture inside our homes. In the winter, with furnaces on, homes may have a relative humidity that is only 10 to 20 percent. Houseplants like the relative humidity to be in the 40 to 50 percent range.

There are several things you can do to overcome this problem. Group plants together to create a mini-environment that is higher in humidity. You can also place plants on top of saucers filled with gravel, then add water to the saucer. Just make sure that the bottom of the pot is not sitting in water. Move plants away from heat sources.

During the winter, plants generally require less water in because they are not growing. But, if the air is extremely dry or the plants are near a heat source, they may require more water than in the summer. Remember that watering is dependent on location, humidity and the species of plant.

It is better to keep the plants on the dry side. Water when the soil is barely dry to the touch. Also, water thoroughly so that water runs out of the bottom of the pot. Any extra water that remains in the saucer should be poured off. I place all of my houseplants in the bathtub when I water them so that they can drain freely.

Houseplants look poorly in the winter because of lack of sunlight. Come spring they will develop a healthier color.

Temperature is another issue. Houseplants like daytime temperatures that are between 65 and 70 degrees and night temperatures of 60 to 65 degrees. Temperatures below 50 degrees may damage some houseplants. Remove plants from cold windowsills and unheated rooms.
Resist the temptation to fertilize them. Many plants need the winter rest period and stimulating their growth may lead to other problems. Start fertilizing again in April or May. The plant will let you know when it is time. You'll see a flush of new growth.

Cornell Cooperative Extension
Chemung County

Master Gardener

Free Gardening Classes for Beginners

Learn to grow your own produce!

Topics include: Garden site and soil development, garden planning, planting, garden maintenance, and harvesting.

What:	**Seed to Supper** A 5-week beginning gardening course for adults
Where:	CCE Chemung County, Conference Room (Room 110) Address: 425 Pennsylvania Avenue, Elmira, NY
When:	1st session: April 3rd (Tuesday); 2nd session: April 10th (Tuesday); 3rd session: April 17th (Tuesday); 4th session: April 24th (Tuesday). Time: 9:30 – 11:30 AM. The 5th session will be held in mid-August. Date and time will be determined later.
Who:	Free and open to the public (free child play care is available if needed, but please RSVP two weeks ahead). Taught by Chemung County Master Gardeners.
How:	To sign up, contact 607-734-4453 or jy578@cornell.edu, and mention "Seed to Supper". Sign up by March 30th.

Helping You Put Knowledge to Work

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.

Accommodations for persons with special needs may be requested by calling 734.4453 prior to attending a program.

Age-Friendly CHEMUNG COUNTY

United Way Community Partner

Early Blooming Flowers

By Pat Curran, Master Gardener, CCE Tompkins

Winter aconite

The two earliest spring flowers often bloom in March depending on how warm and sunny the site is, and they are both deer-resistant! Winter aconites (*Eranthis hyemalis*) have bright yellow flowers that resemble crocuses, but the foliage is a ruffle of green rather than linear. Mine were in bloom when the snow melted on March 11. Rodents and rabbits don't bother them either. However, the tubers may dry out in the store in the fall; soak first before planting. I collect seed in mid-May and sprinkle it where I want more (and avoid digging or planting there). They sprout the next spring, and two years later, they bloom and self-sow profusely.

Snowdrops (*Galanthus* species) are white with touches of green or yellow. Their foliage is linear like many other spring bulbs, but I have never had any animal problems. They come from true bulbs, and they will also self-sow into colonies. They look especially nice with the early-blooming rose or purplish flowers of Lenten 'roses' (hellebores).

Both of these flowers (like all bulbs) should be left to mature their foliage, but it will be dormant by mid or late May. They are especially suited for doorway gardens, I think, where they can be appreciated even in cold or drizzly weather (as one runs to get out of the snow or rain!)

Snowdrops

Northeast farmers weigh warm climate, drenched fields

By Blaine Frielander, Cornell Chronicle December 13, 2017

Farmers in the Northeast are adopting production habits tailored to longer, warming climate conditions, but they may face spring planting whiplash as they confront fields increasingly saturated with rain, according to a new Cornell-led paper in the journal Climatic Change, November 2017.

Climate change in the Northeast could present two faces. “Climate change can easily intensify agricultural susceptibility, but also present fresh, surprising opportunities,” said David Wolfe, professor of plant and soil ecology and senior author of the paper.

For the past two decades, the Northeast has been getting warmer for longer periods of time. Concurrently, the region has seen a 71 percent increase in the frequency of extreme precipitation events – more than any other region in the United States, according to the paper. Heavy rainfall, for example, increases the likelihood of foliar diseases, such as potato and tomato late blight, and plant root fungal problems that stress carrots and other root vegetables.

Precipitation data collected from Cornell’s Northeast Regional Climate Center indicate that summer rainfall averaged 133 percent (2013), 111 percent (2014), 118 percent (2015) and 92 percent (2016) of normal conditions – which uses the

Article continues on page 16

Grazing Cover Crops

By Nancy Glazier, Cornell Cooperative Extension Small Farms Specialist

I think everyone knows (or should know) the value of planting cover crops – soil health, erosion reduction, and nutrient capture. How does rotational grazing fit with cover crops? It can extend the grazing season for livestock producers and provide gain on fresh forage. But, does it save money? It can be an excellent collaboration between a livestock farm and cash crop farm.

Mike Baker shared with me his data from grazing feeder calves on oats from the late fall 2016. He had a neighboring farm that was intending to make baleage from a field of August planted oats. Conditions were dry and the yield was not there to justify making the baleage, so the neighbor offered it for grazing. Mike took him up on it. There were 46 weaned calves averaging 484 lbs. that grazed about 75 acres for an average 73 days. They were moved to a new paddock every 3-5 days. The objective was to graze until it was not practical due to weather or no available forage.

Average daily gain was 1.6 lbs. Looking at the value of the gain, the gross return was $120/head from solely grazing, based on feeder calf prices at the time. Sound good?

Mike admitted it was a labor intensive project. Two-strand perimeter fence was set up with one-strand interior fence. He initially used polytape and polywire, the tape for visibility for the cattle and deer. Polywire carried the charge much better and switched to that as the season wore on. Calves were familiar with electric fence from summer grazing, though they went through the single strand when they thought it was time to move. Cows would most likely respect the single strand for both perimeter and interior fence. He did not utilize a back fence as he normally does with summer grazing. Water was hauled to every paddock. It was a dry fall so mud was not an issue for getting the water out to the field or pugging. An alternative energy source was needed for the fence energizer. Mike used a battery for this and needed to keep track of the charge. A solar charger would have worked.

Feeding hay was eliminated for the additional 73 days of grazing. With 46 calves at an average weight of 541 lbs. (average of start and end weights) fed 3% body weight per day, 27 tons on a DM basis would have needed to have been fed. This does not include any wasted hay from storage or feeding.
There was no manure to clean up, haul, or spread if they had been fed in confinement. The farms will need to agree on a price, whether based on per head per day or acreage. In this scenario Mike paid $0.25/head/day, about $1850.

Benefits for the cash crop farm? Grazing the oats reduced the possibility of a heavy mat on the field in the spring. In most years, oats will winterkill, but could accumulate some significant fall growth. Removing this may be a benefit depending on spring tillage and crop rotation.

Trampling could be a concern with extensive grazing (no rotation) or leaving cattle too long in one paddock. Keep in mind the original purpose of cover crops: the soil needs to remained covered for the reasons listed above. Don't graze too short, leave 3-4" residual. If the original intent was grazing it would have been beneficial to add triticale for continued plant growth.

What about the benefits of animal impact on soil health? This includes feces, urine, trampling and salivation. This is a topic for another article! This is a brief overview of an opportunity. It may not work every year and there are many cover crop options for grazing. A key point is remaining flexible and being able to adapt to what is available in the current year.

Raising Waterfowl

March 28, 2018

6 - 8 pm

4-H Building

Chemung County Fairgrounds

If you would like to learn more about raising waterfowl please join us on March 28, 2018 from 6-8 pm at the Chemung County Fairground in the 4-H Building. We will be going over the basics of raising waterfowl. Topics to be covered in this workshop include purpose, regulations, breeds, brooding, housing, nutrition, health, predator control, breeding, egg production, meat production, marketing, and more.

Cost to attend is $5 per person. Pre-registration is suggested in order to ensure enough handouts and refreshments. For more information and to register, please contact Shona Ort at 607-734-4453 ext. 227 or sbo6@cornell.edu.

Cornell University
Cooperative Extension
Chemung County

Building Strong and Vibrant New York Communities

Deer Worm Factsheet

Prepared for sheep and goat producers , Courtesy of Cornell Sheep & Goat Program and Cornell Ambulatory Veterinary Services

Funding provided by the Beakman Fund and the Hatch & Smith-Lever Federal Capacity Fund Grant "Application of New Concepts for Control of Internal Parasites in Sheep and Goats".

What is deer worm? Parelaphostrongylus tenuis (abbreviated P. tenuis), also called deer worm or meningeal worm, is a parasitic worm of ruminants. It is very common in white-tailed deer in the northeastern United States (up to 90% of deer harvested during hunting season have been shown to be infected), but does not cause disease in this species. The worm has an indirect life cycle, requiring land snails or slugs as intermediate hosts before being able to infect a ruminant.

What animals are affected by the deer worm? Although meningeal worm is best suited to white-tailed deer, many other animals that share grazing land with the deer, including sheep and goats, can be infected. In all species, except the white-tailed deer, infection with meningeal worm can cause serious neurologic disease.

What is the life cycle of P. tenuis/How do sheep and goats become infected? Immature deer worm larvae are shed in the feces of white-tailed deer and are either ingested by or burrow into a passing intermediate host (land snail or slug); over 2 to 3 months, they develop into a more mature, infective larval form. They will either remain in the snail or slug or can be left behind in its mucus trail. Sheep and goats that eat forage contaminated with the snail/slug or its mucus trail can become infected.

Once ingested by the animal, the mature larvae migrate out of the true stomach into the abdomen and follow nerves in the body wall until they reach the spinal cord. In the definitive host (white-tailed deer), the larvae then follow an orderly pattern of maturation in the grey matter of the spinal cord before migrating to the head where they live, reproduce, and lay eggs in the tissues surrounding the brain. However, in small ruminants (because they are not the definitive host) the larvae are unable to 'orient' themselves and thus follow an unpredictable and erratic course around the spinal cord and nearby nerves. This, in conjunction with the body's inflammatory response, causes damage to the central nervous system and leads to the external signs of disease discussed below.

What are the signs of infection with deer worm? There are two common signs that an infected sheep or goat may show. Many affected animals will have trouble moving around; early signs of deer worm infection include mild stumbling, knuckling and/or dragging the toes of one or both hind limbs, and general weakness of the hind limbs. In more advanced cases, the sheep/goat may suffer total paralysis of the hind limbs, leaving it in a dog-sitting posture or down and unable to get up. The front limbs are less commonly affected, but can have the same problems as the hind limbs. Fortunately, even in a case of total limb paralysis, some animals still recover fully given proper treatment and/or time.

Another common sign of deer worm infection is excessive itching and rubbing of one area on the side of the body. Migrating larvae can irritate an individual nerve where it merges with the spinal cord, making the animal rub and/or bite incessantly at the area of skin to which the nerve runs. This leads to hair loss and occasionally a wound in the skin. Less commonly, infected animals will show signs of brain disease such as a head tilt, walking in circles, rapid eye flickering, and difficulty chewing. Appetite and body temperature typically remain normal in animals affected with the deer worm, which is not often the case with other common diseases of the brain in sheep and goats. It is important to note that not all affected animals will show all these signs. There can be a wide range of manifestations of deer worm infection, so it is important to be vigilant in watching for any problems with your animals.

How do we know that an animal is infected with deer worm? To make the diagnosis of deer worm, we rely heavily upon the grazing history of the animal as well as the signs of disease it is showing. The fluid that surrounds the brain and spinal cord (cerebrospinal fluid) will also often have characteristic changes to it when viewed microscopically. An absolute diagnosis is made by examining the spinal cord of an affected animal after a necropsy has been performed.

How do we treat? There exist many approaches to treatment of P. tenuis, largely because no studies have previously been conducted to demonstrate what is most effective. Many have used ivermectin to treat migrating larvae, but this is thought to only be effective when the larvae are traveling in the stomach or abdominal cavity and not once they have reached the spinal cord. Ivermectin should not have the ability to cross the blood-brain barrier into the cerebrospinal fluid and thus may not have any effect on larvae already in the central nervous system (CNS). It may remove additional larvae that have not yet entered the spinal cord. Fenbendazole (Safe-guard®, Panacur®) is often used because it can penetrate into the CNS, killing larvae already in the spinal cord or brain. To help reduce inflammation and further damage to nervous tissue, steroids such as dexamethasone, or non-steroidal anti-inflammatory drugs such as flunixin meglumine (Banamine®), are also commonly utilized in treating infected animals. Some animals recover without any treatment, and not all treated animals inevitably recover. Withdrawal periods (the number of days after treatment that an animal's milk or meat cannot be used) vary widely for different drugs and need to be considered when deciding on a treatment.

What is Cornell's involvement with deer worm research? A four year study by the Cornell Sheep & Goat Program and Cornell Ambulatory Veterinary Services investigated the effectiveness of two different treatment pro-

tocols for naturally infected sheep and goats. Participating goat and sheep farmers knowledgeable about deer worm contacted the researchers when they observed a suspected case of deer worm infection; the veterinarians then determined if the animal qualified for the study. Enrolled animals were randomly assigned within herd to a treatment or control group with treatments alternating for succeeding animals from the same farm. The treatment group received 5 days of oral fenbendazole (25 mg/kg), intramuscular dexamethasone (0.2 mg/kg for 3 days followed by 0.1 mg/kg for 2 days) and subcutaneous ivermectin (0.5 mg/kg); the control group received the same 5 day course of fenbendazole and dexamethasone with a similar volume of placebo vehicle in place of ivermectin subcutaneously. Farmers and study veterinarians were blinded to treatment. Neurologic examinations were conducted at time of enrollment and after the 5 days of treatment to assign animals a neurological score from 1 (unable to stand) to 5 (no detectable neurologic deficits or only an expert would notice) scale, with a score of 4 indicating likely to function in the herd for breeding though noticeably impaired.

Twenty goats and 18 sheep from 10 central NY farms were enrolled in the trial with 9 goats and 9 sheep in the control group and 11 goats and 9 sheep in the treatment group. After the 5-day treatment period, animals were classified as recovered if they required no further treatment to potentially remain in the breeding herd (score of 4). Six of 9 sheep treated with ivermectin recovered without further treatment but 3 had to be euthanized. Five of 9 sheep treated with the placebo recovered without further treatment; 2 required additional treatment, and 2 had to be euthanized. All 11 of the goats treated with the ivermectin recovered, while six of the nine treated with the placebo recovered without further treatment, and 3 required additional treatment.

Statistical analysis indicated that higher pretreatment neurological scores improved outcome ($P = 0.002$). The effect of ivermectin was almost significant ($P = 0.073$). However, all 11 goats treated with ivermectin were categorized as recovered. Therefore, differences between species on the effect of ivermectin could not be tested with the binary logistic regression used for analysis. The better outcomes for goats are probably explained by closer observation of goats (coincidentally all goats were returned to barns at night while all sheep were left in pastures 24/7) which resulted in higher pre-treatment neurological scores. Given the importance of pretreatment score on the odds of recovery, close observation of animals at high risk for P. tenuis infestation is warranted to ensure early treatment. Studies with larger numbers of animals are needed to definitively state whether including ivermectin in the treatment protocol improves outcome. Inclusion of ivermectin for 5 days increases the drug withdrawal period for the standard protocol to 96 days or more according to FARAD, the Food Animal Residue Avoidance Databank. If there is no concern about the withdrawal period, we cannot rule out the possibility that ivermectin may be beneficial in the treatment of highly valuable animals.

The Cornell Sheep & Goat Program and Dr. Judith Appleton's lab at the Baker Institute for Animal Health also cooperated on a study to determine if sheep can become resistant to P. tenuis when established infections in early life are followed by later exposures. In October 2013, 12 ewe lambs in the Cornell sheep flock were each orally dosed with 20 L3 (stage 3 larvae) of P. tenuis to induce immunity (Infected). Twelve cohorts of the treated ewes were orally given the suspension medium only (Control). Due to a shortage of L3 to challenge the Control and Infected ewes in October 2014, only 4 of 12 Control ewes and 5 of 12 Infected ewes were challenged (given 100 L3 orally); the unchallenged ewes were given the suspension medium. All trial ewes were kept in a barn for the entire 2-year experiment to prevent natural exposure to P. tenuis. Results (Figure 3.) support the potential effectiveness of vaccines developed from killed P. tenuis L3. Alternatively, recombinantly-produced proteins found on the surface of P. tenuis L3 might be used to make effective vaccines.

Can infection be prevented? Regular, frequent deworming to prophylactically treat for deer worm is costly and time-demanding; perhaps more importantly, it inadvertently selects for stomach and intestinal worms resistant to the drug, rendering that dewormer ineffective at controlling these damaging gastrointestinal parasites. There is no selection for resistant deer worm larvae because they never complete their life cycle in sheep and goats.

The most effective way of preventing infection from deer worm is to reduce exposure of sheep and goats to infected snails and slugs and to limit deer access to grazing pastures. Pastures bordering woodlands are more likely to be frequented by deer and low, moist areas provide a more conducive environment for deer worm larval development. Fields the first year after forest clearing are especially high risk. Avoiding these areas, especially in wet seasons or after the leaves have fallen, will help reduce exposure and may decrease the chances of deer worm infection. Daily patrolling by guardian dogs during the winter and grazing season and other deterrents such as human activity and/or deer-proof fencing to discourage deer from bedding down in pastures will also reduce the incidence of disease.

Thank you to the Beakman Fund for Research in Meat Goat Health for funding to prepare this factsheet.

NY FarmNet
350 Warren Hall, Ithaca NY 14853
1-800-547-3276 nyfarmnet.org

Identifying Signs of Stress in Farm Families

By Extension Associate Daniel Welch and Extension Support Specialist Kate Downes

New York State farm families are experiencing higher levels of financial and emotional stress due in part to several years of low commodity prices. This is an especially difficult time for dairy farmers because regional conditions in dairy markets have further reduced farm revenues. Farm families can also experience stress as the result of a sudden event—such as crop loss, an accident, a personnel change, or family death. In other instances, it may be a gradual change from a prolonged physical illness, excessive working hours, or relationship difficulties.

Warning Signs of Stress:

- **Change in routines**: Farmers or members of the farm family may change who attends a market, stop attending regular meetings or religious activities, drop out of other groups, or fail to stop in at the local coffee shop or feed mill.
- **Decline in the care of domestic animals**: Livestock or pets may not be cared for in the usual way.
- **Increase in illness**: Farmers or farm family members may experience more upper respiratory illnesses (cold, flu) or other chronic conditions (aches, pains, persistent cough, migraines).
- **Increase in farm accidents:** The risk of farm accidents increases with fatigue or loss of ability to concentrate. Children may be at risk if there isn't alternative child care.
- **Decline in appearance of farmstead**: The farm family no longer takes pride in the way farm buildings and grounds appear.
- **Signs of stress in children**: Farm children may act out, show a decline in academic performance, or be increasingly absent from school. They may also show signs of physical abuse or neglect, or become depressed.
- **Decreased interest**: Farmers or farm families may be less willing to commit to future activities, sign up for gatherings, or show interest in community events.

Signs of Chronic, Prolonged Stress

When farm families are under stress for long periods of time, members of the family may exhibit:

- Headaches, backaches, etc.
- Irritability
- Depression
- Ulcers
- Anger
- Passive-aggressiveness
- Frequent sickness
- Exhaustion
- Loss of humor
- Memory loss
- Self-judgment (e.g., "I blew it.")
- Lack of confidence (e.g., "Why can't I...?")
- Sadness
- Bitterness
- Withdrawal
- Sleep disturbances
- Loss of spirit
- Substance abuse
- Violence
- Lack of self-confidence (e.g., "I'm a failure.")
- Lack of concentration
- Difficulty making decisions

Cornell CALS College of Agriculture and Life Sciences
Dyson Cornell SC Johnson College of Business

NY FarmNet
360 Warren Hall, Ithaca NY 14853
1-800-547-3276 nyfarmnet.org

Selected New York Resources to Support Stressed Farm Families

NY FarmNet
NY FarmNet provides completely free and confidential on-farm services for farmers and farm families in New York. Specializing in personal wellbeing, stress management, family communication, financial analysis, business planning, transition planning, and estate planning, FarmNet financial and personal consultants guide farm families through periods of transition, opportunity or challenge.
1-800-547-3276, www.nyfarmnet.org

National Suicide Prevention Lifeline
1-800-273-8255 (TALK), www.suicidepreventionlifeline.org

Crisis Text Line
Text "START" to 741-741, www.crisistextline.org

New York State County Mental Health Directory
http://www.clmhd.org/contact_local_mental_hygiene_departments/

Adapted with permission from Associate Extension Professor Leslie Forstadt and Associate Extension Professor Tori Jackson, University of Maine, "The University of Maine Cooperative Extension Bulletin #4805, Recognizing Signs of Farm Family Stress."
www.extension.umaine.edu/publications/4805e/

Asian Tiger Mosquitoes

(excerpt from this article)

Editor's Note: This mosquito is a bane of gardeners in the south. I used to spend ten minutes in the afternoon picking tomatoes and would have 10 bites on my legs. I hope it NEVER gets to the Southern Tier!

Dr. Laura Harrington research group in Entomology is tracking what could become a vector for outbreaks in the United States—the Asian tiger mosquito. An invasive species introduced to the United States in the 1980s, the Asian tiger mosquitoes lay their eggs in manmade containers, tires or shipping bins, all over the world. The embryos can stay dormant for six months or more, until the conditions are right for hatching. The scariest thing about the species is that they're excellent vectors of disease.

"In other parts of the world, they're very important in the transmission of dengue, yellow fever, and zika," Harrington says. "In New York state, they've been found infected with West Nile virus, and they're very important in heartworm transmission in dogs. In the laboratory, at least, they're known to transmit 20 or more different viruses that affect human and animal health. It's actually the best overall mosquito vector of viruses."

The species has already spread throughout the southeastern United States and is moving north. PhD student Talya Shragai is tracking this expansion, working with Cornell's Cooperative Extension to enlist the help of gardeners in New York State. She's trained groups to trap mosquitoes and their eggs, giving her a much broader sampling effort than she could accomplish herself.

Shragai is also exploring the types of containers the mosquitoes are breeding in and how they adapt to cooler temperatures, with an eye toward limitations in the species that scientists can exploit.

Mosquito Biology for Homeowner (pdf)

New York State Tiger Mosquito Education Network (TigerNET) includes results from summer 2016 trapping effort

News, Notes and Workshops for Tioga and Chemung County Farmers

Northeast Sheep Shearing School

March 10 and 11, 8am-5pm.

Shepherds Way Farm LLC, 623 Bird Cemetery Rd., Locke, NY 13092

A two-day sheep shearing school will be held at Shepherds Way LLC Farm in Locke, NY on March 10-11, 2018. Instruction will include the shearing pattern, blade sharpening techniques, physical fitness, hand piece maintenance and more. This school is for both beginners and advanced shearers. This school was previously known as the Cornell Sheep Shearing School. To register for the shearing school send your name, mailing address, phone number, email address and a check or money order in US funds made payable to Doug Rathke and mail to Doug Rathke, 61231 Hwy 7 W, Hutchinson, MN 55350. Call (320) 587-6094 if you have any questions.
Email info@lambshoppe.com to get a registration form.
Visit Lamb Shoppe's website to learn more about the event.

Improving Agriculture Labor Management Workshops in March

Cornell Cooperative Extension will be hosting a series of four workshops across New York related to hiring, training, retaining, and working with employees within a farm business. Coming up on March 6, "Keeping Good Staff When Money is Tight" will cover research on rewards and incentives in the workplace to learn tools to attract and retain staff and reduce staff turn-over. Click here to register online for this or other events in the series, or if you would prefer to have a paper registration form sent to you, contact Liz Higgins at emh56@cornell.edu or (518) 949-3722. The Cornell Small Farms Program has funding from NYS to provide scholarships for NYS Veterans to attend this program. To learn more about this opportunity, and determine if you are eligible for a scholarship, please contact Kat McCarthy at kmm485@cornell.edu or (607) 255-9911. Check out the Ag Labor Management flyer for more detailed information.

Farm Credit East 2018 Industry Outlook Report

Farm Credit East, a farmer-owned cooperative, recently released its 2018 industry outlook report. This report, titled *Northeast Agriculture: 2018 Insights and Perspectives.,,* addresses market outlooks for multiple industries, including dairy, grain, vegetables, fruit, greenhouse and nursery, commercial fisheries, and forest products. It also provides information on crop insurance, consumer buying behavior for ag retailers and an update on the Food Safety Modernization Act.

New Farm Meadery License in FY 2019

Governor Andrew M. Cuomo recently announced the FY 2019 Budget includes a proposal to create a license for farm meaderies, a new license similar to those already available to farm wineries, breweries, distilleries and cideries. As with other New York farm licenses, farm meaderies will have the privilege of self-distribution, in addition to the ability to market and sell their products through existing wholesalers. Farm meaderies will also be permitted to open restaurants and gift shops, and have the ability to operate up to five no-fee offsite branch stores anywhere in the state. As with New York manufactured hard cider, New York mead will be sold in both grocery stores as well as liquor and wine stores. The annual cost for the new license is $75. Currently, only farm wineries, which must be located on a farm, and commercial wineries, which cost $3,025 in licensing and bond fees, may produce mead.

Let's Write Your Business Plan

Thursday evenings, March 8th through 29th, 5-7:30pm.
840 Upper Front St, Binghamton, NY 13905

The keynote speaker for this event will be Rob Salamida, owner/founder of The Rob Salamida Co, Inc. Rob will talk about his experience in starting his marinade business, working through NYS and local regulations, and lessons he has learned along the way. The morning will focus on farm to institution & restaurant as an emerging opportunity for fruit, vegetable, and meat producers. Come and learn how you can start selling to schools, what's required and talk with buyers and chefs. The afternoon will focus on starting a successful value-added food business. Come and hear from local and state agencies, Nelson Farms (a co-packer) and a local blueberry farmer who has started making blueberry bbq sauce at a commercial scale. You will also hear from TASTE NY, the Broome County Regional Farmers Market and the Broome County Commercial Kitchen. Learn more and register online here.

Emerging Opportunities for Established Beginning Farmers

March 13, 9:30am-3pm.

840 Upper Front St, Binghamton, NY 13905

The keynote speaker for this event will be Rob Salamida, owner/founder of The Rob Salamida Co, Inc. Rob will talk about his experience in starting his marinade business, working through NYS and local regulations, and lessons he has learned along the way. The morning will focus on farm to institution & restaurant as an emerging opportunity for fruit, vegetable, and meat producers. Come and learn how

you can start selling to schools, what's required and talk with buyers and chefs. The afternoon will focus on starting a successful value-added food business. Come and hear from local and state agencies, Nelson Farms (a co-packer) and a local blueberry farmer who has started making blueberry bbq sauce at a commercial scale. You will also hear from TASTE NY, the Broome County Regional Farmers Market and the Broome County Commercial Kitchen. Learn more and register online here

New York Job Development Authority Agriculture Loan Fund Program

The New York Job Development Authority (JDA) will launch an Agriculture Loan Fund Program to address and help alleviate the economic barriers faced by many New York State small agribusiness owners. JDA has provided $10 million in funding, which will be distributed as low interest loans by third party lenders. Approved lenders include:

- **Statewide** - New York Business Development Corporation
- **Finger Lakes** - Pathstone Enterprise Development Corporation
- **Southern Tier** - Delaware County Local Development Corporation & REDEC Relending Corporation

Applicants should contact lenders directly. To find out more about the JDA Agriculture Loan Program, contact Rafael Salaberrios, Vice President of Economic Revitalization, at 212-803-3219.

AgrAbility - Assistive Technology Program for Farmers with Disabilities

The AgrAbility program increases the likelihood that farmers, ranchers, farm workers and farm family members with disabilities will experience success in agricultural production. The program supports projects between State Cooperative Extension System and private, non-profit disability organizations who work in partnership to provide agricultural education and assistance directed at accommodating disability in farm operations for individuals with disabilities, and their families, who engage in farming and farm-related occupations. View the grant opportunity here for application information and eligibility requirements. **Applications are due April 30, 2018.** NIFA will host a webinar for interested applicants on March 15th at 1:30pm-3pm EST. The webinar will focus on general guidelines for the program and on the 2018 application process.

Southern Tier Growers Meeting

The Southern Tier Growers (and anyone can attend) are meeting on March 12 at 10 at the Broome County Cooperative Extension Taste of NY building in Binghamton (840 Upper Front St).

They will be touring the new Taste of NY and Farm Market Building with a catered lunch to follow along with meeting. Lunch is $10.00.

Please confirm if you will be attending and how many people by Thursday March 8th by emailing Lisa Massi at lisa@massisny.com

Homesteaders—A Conference for You!

The Lifestyle Farming Conference is back, and more comprehensive than ever. With 44 courses (up from 29 last fall) the April 7 Conference highlights spring topics to help you work your chainsaw, improve your maple sugaring, or prepare your vegetable garden. You can also learn important year-round skills including homestead site assessment, permaculture principles, and farm financial management.

Experts hailing from Schoharie County and well beyond will present hands-on workshops to advance your homesteading skills. From bees to cheese and meat rabbits to saw milling, the Lifestyle Farming Conference promises to be an intensive and fun day of learning. Classes fill up fast, so register now.

Read all about the courses and register today at: www.cobleskill.edu/lifestylefarming

WPS training requirements have changed. Be sure you know what is required in terms of who can do the training and how it must be presented. Lots of resources are available from the Pesticide Educational Resources Collaborative including the appropriate training videos

Landscape folks—Don't forget to sign up for Branching Out http://branchingout.cornell.edu/ There's a clickable subscription form and more information.

New York Certified Organic Sets 2018 Winter Program Series

Crop Rotations, Quality Forage Harvest, Pastured Hogs, Farm Startup on Agenda. March 13 spotlight on adding pastured hogs to a diversified dairy or crop business and general farm start-up opportunities. The free-to-attend NYCO meetings begin at 10 AM in Jordan Hall at the New York State Agricultural Experiment Station, 630 West North Street, in Geneva, NY, and provide organic crop growers and dairy farmers together with the opportunity to learn from speakers and network. There is no need to register for meetings. Participants are asked to bring a dish to pass at the potluck lunch. For more information, contact Fay Benson at 607-391-2669 or afb3@cornell.edu. Information on previous NYCO meetings is posted at http://blogs.cornell.edu/organicdairyinitiative/.

Farm Animal Safety and Management Training

March 12 & 13, 2018 at Alfred State College- Cornell Cooperative Extension of Allegany County is offering aspiring, beginning and transitioning farmers a training focused on understanding how to work with livestock. Farmers need to know what's normal to be able to recognize abnormal behavior in their stock. With classroom and hands-on workshops covering safe handling and restraint, safe moving & transporting, routine animal care, producers will enhance knowledge and skill to work safely with livestock. Space is limited to 35 participants, early bird registration deadline: February 28, 2018. If you are an Active or Retired Military Veteran you may apply for a stipend to cover registration, housing and travel. For more information see attachment or contact Lynn Bliven at 585-268-7644 ext. 18 or lao3@cornell.edu.

United States Farming Practices Survey

Throughout the United States, farmers are using innovative approaches to sustainably produce crops and improve soil health. However, farmers are also faced with numerous challenges, and they are often not included in decision-making that affects the way they farm.

Cornell University, University of California—Berkeley, and The Nature Conservancy are conducting a nationwide survey for all fruit, vegetable, grain, and field crop producers to identify the biggest challenges that farmers face, as well as the best solutions. Key findings from the survey will be published and communicated to grower organizations and other farmer advocates so that recommendations, actions, and outcomes reflect what growers identify as being most helpful for their operation. All responses will remain anonymous. If you choose to enter your e-mail address at the end of the survey, you will receive a summary report of the findings and you will be eligible for a chance to win $500. The survey takes about 30 minutes to complete. You can fill out the survey right now by clicking on this link: United States Farming Practices Survey Please also feel free to send to other growers and farmers for any crop!

The Tax Tips For Forest Landowners

Well managed forests produce timber and other forest products, provide wildlife habitat, recreational opportunities, aquifer and watershed protection, and other amenities. Non-industrial private woodlands comprise approximately 60% of the nation's total forests. Providing tailored tax information is one way in which the Forest Service is working to increase forest productivity on non-industrial forest lands. For the latest tax information and tips regarding private woodlands, visit: www.timbertax.org.

Tioga County Soil and Water Conservation District is seeking new riparian forest buffer projects!

We have several programs to seek funding assistance through and will tailor the planting plan to your preferences and stream location.

Riparian forest buffers are comprised of trees and shrubs that provide soil stabilization with their roots which keep soil from eroding away along stream banks. Buffers also reduce the impacts of floods and provide natural filtration of nutrients and pollutants, lessening impacts downstream. These buffers additionally provide valuable habitats for ecosystems. For example, stoneflies, salamanders and lichens require specific microhabitats which are found in forested buffers. Stoneflies are a great lure for brook trout and other species of game fish. The trees offer shade to the stream which regulates the water temperature, providing better conditions for cold-water fish such as brook trout. Diversifying the species in the stream, will diversity the wildlife on land which eats the fish, bugs and plants. Many species of birds such as wood ducks, kingfishers, great blue herons and even bald eagles will find refuge in riparian ecosystems.

If you are interested in establishing a buffer on your property with little to no cost to you please contact Tioga County Soil and Water Conservation District at (607) 687-3553 or email Danielle Singer at dsinger@co.tioga.ny.us.

News, Notes and Workshops for Tioga and Chemung County Gardeners

Growing Oyster Mushrooms
March 16th- Would you like to learn how to grow your own oyster mushrooms? If so, join us on March 16, 2018 from 5:30 to 8:30 pm at Chemung County Fairgrounds in the 4-H Building. In this hands-on class Ken Mudge, Agroforestry Expert from Cornell University, will be walking us through the basics of growing oyster mushrooms in straw. He will also be doing demonstrations on how to cultivate them through log inoculation and totems. Each participant will take home their own mushroom spawn inoculated bag of straw. Cost to attend is $20 per person. Class size is limited. Pre-registration with payment is required by 3/9/18. For more information and to register, please contact Shona Ort of CCE Chemung at 607 -734-4453 ext. 227 or sbo6@cornell.edu.

Pruning workshop
March 31st, 2018. 8:00am-12:30pm. Spend the morning on the farm and learn how to prune apple, pear, plum and peach. Then, learn how to bring an older tree back into production. Held at Reisingers Apple Country, 2750 Apple Lane in Watkins Glen. Hosted and lead by The Reisinger Family. Class fee is $25 and. Pre- registration is required by 3/27.For more information please contact Roger Ort, 607-535 -7161 or rlo28@cornell.edu. Please visit http://cceschuyler.org/events for additional info and required registration.

Grafting Workshop

Thursday, March 8, 2018, 6:00 PM - 8:30 PM A hands on grafting demo from Cummins Nursery. Learn how to save and reproduce fruit for the future. Pre-registration is required, the fee is $35 to attend. Register here: https://reg.cce.cornell.edu/CCESchuylerGraftingWorkshop201_244. Held at the Silverspoon (OFA Cafe) 323 Owego Street, Montour Falls, NY 14865. For more information please contact Roger Ort at rlo28@cornell.edu.

New tool forecasts spring's arrival months in advance
(excerpt from this article)

Cornell's Emergent Climate Risk Lab has unveiled Springcasting, a web tool to determine the onset of spring – a season before it occurs.

"Our Springcasting product tries to predict spring onset a season in advance. The climate is changing, and the onset of spring impacts agriculture, orchards, insects, migrating birds, pollinators, quite literally an entire suite of ecosystem responses. We're trying to get a heads-up a season ahead of what to expect each year," he said.

The new tool's map of the continental U.S. shows in color where spring will be early, late or right on time. Updated forecasts will be issued Jan. 31, Feb. 15, Feb. 28, March 15 and March 31 for this spring.

1981-2010 average as a baseline – throughout the region.

Wolfe and his colleagues note that the frost-free period has been getting longer, but excessive rainfall in either spring or fall can offset this potential benefit. “Heavy rains not only cause disease problems, but can prevent farmers from having access to the fields to plant in spring or to harvest in fall,” said Wolfe.

While warmer temperatures expand the agricultural production season, climate change warms the oceans and creates a more energetic atmosphere. This, in turn, brings more rainfall, said Art DeGaetano, professor of climatology and director of the Northeast Regional Climate Center.

For several years, the researchers examined the rainfall three weeks prior to the last frost. “What you see through time [is], the date of the last frost in the spring gets earlier and earlier. But that pushes you against the time when rainfall increases the most,” said DeGaetano.

For fresh market vegetable growers, profit is based on reaching market early, when the crop’s value is greatest. Delayed planting due to wet spring soils can have negative financial effects. Farmers can try planting a field even when it is wet, but using heavy farm equipment compacts soil and decreases its ability to hold water, diminishing yield potential.

Rainfall extremes are projected to continue through the current century, the researchers said.

The paper, “Unique Challenges and Opportunities for Northeastern U.S. Crop Production in a Changing Climate,” is part of a special issue of the journal Climatic Change, titled “Vulnerability Assessment of U.S. Agriculture and Forests developed by the U.S. Department of Agriculture Climate Hubs.” Co-authors are Gregory M. Peck, assistant professor of horticulture; Michael Hoffmann, executive director, Cornell Institute for Climate Smart Solutions; Mary Carey, Lewis Ziska and David Hollinger, U.S. Department of Agriculture; John Lea-Cox, University of Maryland; and Armen Kemanian, Pennsylvania State University.

Wolfe, DeGaetano, Hoffmann and Peck are faculty fellows at Cornell’s Atkinson Center for a Sustainable Future.

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Building Strong and Vibrant New York Communities

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Accommodations for persons with special needs may be requested by calling 607-687-4020.