

SPRING 2019

# Livestock



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In the Hudson Valley



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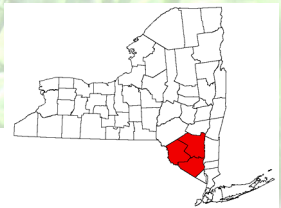
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Look to the Sky!



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Calendar



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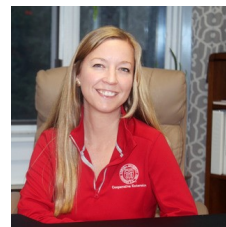
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34  
Se

Selenium is a chemical element with symbol Se and atomic number 34. It is a nonmetal with properties that are intermediate between the elements above and below in the periodic table, sulfur and tellurium.

Selenium is one of the trace elements or micronutrients vital to the biological process of all animals on earth. It is especially vital to young ruminant stock to prevent the development of white muscle disease, difficult breeding, unthriftiness, and even death. Evidence of selenium deficiencies in the soils of the Northeast United States is well documented. These symptoms are most often sub-clinical (not noticeable) in mature animals and often cause muscle tremors, motor disturbances, and hind end paralysis in animals under 8 weeks of age. The mechanism of this shortage stems from selenium's role in binding with free radicals working in conjunction with vitamin E to keep the animals muscles working properly.

The USGS survey map for our area lists the average level of selenium in the surrounding counties. Soils containing less than 0.5 ppm total are classified as Se deficient.

Ulster County: 0.29 ppm  
Orange County: 0.33 ppm  
Sullivan County: 0.24 ppm  
Columbia County: 0.44 ppm

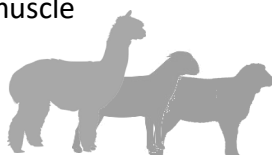
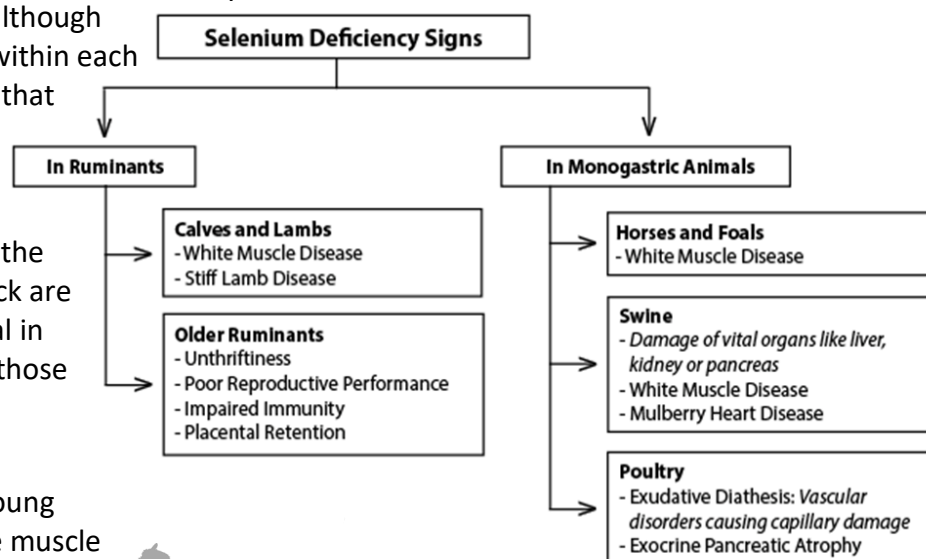
As you can see, all of the counties in our area would meet criteria for being selenium deficient although there are significant variations in the soils within each of the counties. Now that we have proved that we are growing in soils deficient in selenium, what can we do to ensure that we are doing our best to keep our animals healthy? There are a few ways to increase the amount of this micronutrient that your stock are consuming but only two are viable and legal in the state of New York so we will stick with those methods.

On one hand you can administer selenium injections and this is most often used for young animals that are at risk of developing white muscle

disease. You will need to contact a veterinarian for this service as there is a real risk of toxicity with this method. Although effective, this is not a long term solution as the injectable form is not as long lasting as the organic form.

The other option is to provide the trace element via mineral blocks or as part of their total mixed ration. These organic forms of selenium allow the chemical to build up in the animal and are longer lasting and less toxic than synthetic forms of the supplement. The biggest drawback to this method is that you really don't know how much each animal is taking in, which can lead to variable amounts in your herd or stock. It is also important to make sure that your mineral supplementation is covered from the rain as selenium is at risk of quickly leeching out of the blocks or free range mixes when exposed to the elements.

I know this seems like just one more thing to worry about but this issue has come to our attention here at CCE for two reasons. One is that we are deficient in selenium in this area and this could be contributing to some producers calving or lambing issues. Secondly, the symptoms of white muscle disease in young animals can mimic the clinical signs of certain parasite infestations. This has led us to include this factor when we are investigating parasite problems on area farms. So as we all head out to pasture and onto the verdant grasses created by the last couple of rainy weeks, remember to plan ahead to combat selenium deficiencies before they become a problem for you and your stock.





Stereotypic behaviors such as weaving, cribbing, and stall-walking occur commonly in high-performance horses as well as many companion horses. In addition to being unsightly, potentially damaging to the barn, and raising welfare concerns, stereotypic behaviors also result in important health issues such as dental disorders, temporohyoid joint damage, poor performance, weight loss, and colic.

“Cribbing is the most troublesome of these compulsive behaviors. It involves grasping a fixed object with the incisor teeth and aspirating air with an audible grunt,” explained Kathleen Crandell, Ph.D., a nutritionist for Kentucky Equine Research.

The exact reason horses crib remains unknown. Some suggest that cribbing horses have unmet dietary or management needs. Others believe that altered biological functions are the culprits, such as decreased antioxidant levels or increased oxidative stress.

Because trace elements such as selenium, zinc, manganese, and copper protect the body from oxidative stress, one research group\* recently explored the hypothesis that oxidation status may contribute to cribbing. To test this theory, researchers collected blood samples from horses during or immediately after an episode of cribbing and when cribbers were resting. Control horses with no known history of cribbing were also tested. The scientists then analyzed the samples for various markers of oxidation.

“The most important finding in this study was that serum selenium concentration was significantly lower in cribbing horses than in controls, with the lowest levels measured while horses were actually cribbing,” Crandell said.

Based on these data, the researchers concluded



“that alterations in serum selenium, an important component of the antioxidant system, may play a role in the pathophysiology of cribbing behavior in horses, adding further evidence to the theory that cribbing may be related to increased oxidative stress and alterations in essential trace elements.”

Micronutrient imbalances can affect many physiological processes, which is one reason why Kentucky Equine Research nutrition advisors are available for free consultation. They can help with feed analysis, recommend ration fortifiers containing vitamins and minerals, and antioxidants such as Nano-E, a water-soluble, natural-source of vitamin E.

“Management also plays an important part in minimizing stereotypic behaviors. Strategies such as providing environmental enrichment tools, offering free-choice hay or prolonged grazing, and allowing direct visual contact or prolonged turnout time in groups are thought to improve the welfare of affected horses,” Crandell mentioned.

*Reprinted courtesy of Kentucky Equine Research. Visit [ker.com](http://ker.com) for the latest in equine nutrition and management, and subscribe to [Equinews](#) to receive these articles directly.*

I was recently on a farm speaking with a rancher and we were talking about the upcoming calving season. It was early March and we were standing in a sacrifice paddock near the barn in about 2 feet of deep mud. He mentioned that he was expecting the calves to begin dropping any day now and sure enough, a couple of the cows were already bagged up and getting that restless look in their eyes. I then asked him a question that he was not expecting. I asked him why he calves at this time of year. He looked at me and said because that's the way his father did it. Now, I respect the ranchers that came before me with a reverence reserved for religious epiphanies or near death experiences, but at this time, in this weather, I couldn't help but think that this gentleman would be better off moving his calving date to later in the season.

The most common reason for calving early is to put more weight on the animal prior to selling it off in the fall. More time on the ground should translate to more weight on the frame and a healthy calf should be gaining between 1 and 2 pounds a day. But this additional weight does come with a price. The fact that you are calving in the middle of winter means that all the feed provided to the lactating cows and growing calves will have to come from your stored reserves. By calving later, when the flush of grass is in full swing, you can save both money and resources. Making and feeding hay or silage costs you money in machinery upkeep, fuel costs, storage costs, and labor. In other words, less hay to feed means more money in your pocket. The tradeoff in this situation is that you may have a smaller calf at finish time, but on the other hand, you have invested less time and resources into that animal. It may be possible to hold that calf over, wean it late, and have a heavy weight animal that costs less to produce overall and can command a premium price later in the year. This is

especially true after most of the premium animals have already sold. Your larger animal will be very appealing to those who are looking for a high-end Christmas steak.

Another reason that producers tend to calve later is that they may be busy with other aspects of farm production, such as planting or harvesting hay. This can certainly be a problem, but timing your hay production to begin right after your calving ends can alleviate this problem.

There are other benefits to calving later in the season as well. When you are feeding a cow in her third trimester of pregnancy, in the middle of the cold winter, you not only have to make up for the nutrient drains from the calf growing inside of her, but the extra energy needed to maintain body condition in extreme winter weather. By moving the season later you can count on the hay that you are feeding to go further because the fetal calf



requires much fewer nutrients in the earlier development stages, leaving more nutrition to keep the cow healthy during the most trying time of the year. There have been some studies conducted by the University of Wyoming on late season calving:

[www.uwagec.org/farmmgt/PUBS/B1076.pdf](http://www.uwagec.org/farmmgt/PUBS/B1076.pdf)

They found that not only are supplemental feed costs and overall labor costs reduced, but calves born later in the season have lower incidence of disease, scours, and rates of infection. They also found that there is less dystocia with late season calving. Not having to pull calves or perform cesareans can save a producer a lot of time and vet bills.

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Sheep are ideally suited to a small-scale or part-time farming operation due to their nutritional versatility and adaptability. Sheep can be fed a very high concentrate diet (similar to swine), solely a forage diet, or any combination. Spring lambing uses the ewe's natural breeding cycle (breeding October through December and lambing March to May), which improves breeding efficiency and potential pasture utilization.

### Marketing

Marketing opportunities are plentiful for lamb in the Northeast. Lambs can be marketed at any age and often vary in weight from 20 to 160 pounds, depending on the time of year and market conditions. Although the vast majority of ewes lamb in the spring, lambs can be born from September through May.

Most lambs marketed in the Northeast are spring lambs. These lambs are usually sold at around 110 pounds and are marketed through local auctions, slaughterhouses, brokers, and individuals. In recent years, direct markets, niche markets, and cooperatives have become popular for selling lambs. Wool is sold through local and national markets, brokers, and wool cooperatives. Although prices for late summer and early fall marketed lambs are generally lower, producers may be able to increase prices received by direct marketing lambs to consumers. Spring lambs are marketed in a period of low demand and high supply, so prices received are the lowest of all sheep enterprises. In the Northeast, a four-year-average price for 110-pound lambs during August through October would have yielded about \$10 to \$30 per cwt less than the same lamb marketed at other times of the year.

### Getting Started

A variety of production and management strategies can be used in a sheep enterprise. But before starting to raise sheep and lambs, you should consider your situation relative to land, labor, capital, markets, and potential costs. Then you can decide on the size of your intended flock that best matches your marketing plan. The smallest production unit to consider for spring lambing is a flock of up to 30 to 35 ewes serviced by one ram.



Breeding ewes usually costs \$100 to \$200 per head and a good ram will probably cost at least \$300. Ewes are generally bred in October through December and produce one to three lambs annually (gestation period of five months). Lambs are ready for market four to six months after birth, so it is possible to receive a return on your initial investment rather quickly. If you have little or no previous experience with sheep, starting with only a few bred ewes and going through a lambing season would be invaluable. It may help you decide whether you want to be in the sheep business, while you develop husbandry skills, investigate markets, and test profitability.

### Sheep Breeds

Develop a marketing plan for your lambs before you buy any sheep; this will help narrow your breed choices and help you project long-term breeding plans. The most significant factor affecting income potential in spring lambing enterprises is the number of lambs produced per ewe, per year. Crossbred ewes that are derived from more prolific breeds like Dorset and Polypay can help increase the number of lambs produced.

### Housing and Fencing

Housing and equipment for sheep do not have to be expensive and may be very minimal. Ideally, existing barns and sheds can be adapted for sheep, or adequate shelter can be obtained for an initial cost of about \$55 to \$60 per ewe. Adequate shelter for sheep can be provided by small, open sheds located on a well-drained site, preferably on a south-facing slope away from prevailing winds.

—Continued on Page 6—



## .....LATE SEASON CALVING CONTINUED.....

There are multiple reasons why late calving may provide these benefits. The fresh flush of grass does not only lower overall feed costs, it provides the most nutritious and beneficial feed stuffs possible to the growing calf and recovering cow. The lowered body condition score of our brood cows is quick to rebound on the nourishing and abundant green grass as opposed to stored feed stuffs.

Intuitively this makes sense. If we look to the other ruminants utilizing our pastures we would find deer calving later in the season when there is enough forage to support their increased nutrient needs. Granted there is always the possibility that the weather will turn

nasty late in the season, but by calving later, your animals will be better prepared to ride out the storm.

As producers we need to analyze every aspect of our production model to make our particular enterprise efficient and profitable. When you sit down and look at your feed costs, labor demand, health and birthing issues, and grow back of the herd, it seems like late season calving may be something to consider in the future.



## .....SPRING LAMB PRODUCTION CONTINUED.....

This type of site helps the lot dry faster and makes it easier to maintain. Consider grading and filling low spots with shale-like material to achieve desired slopes since sheep do not tolerate mud. Locate handling facilities so sheep can be easily sorted and provided routine care with minimal effort. Fencing for sheep needs to serve two primary purposes:

- Keep in the sheep
- Keep out potential predators

Perimeter fencing should be designed with these two factors in mind. Costs may vary considerably for perimeter fencing due to curves and land contours that will require additional posts. In general, a good perimeter fence for sheep will average about \$1.75 to \$6.00 per linear foot. High-tensile fence is commonly used for sheep production, but woven wire and wooden fences are other alternatives. Consider various fencing alternatives due to price, longevity, maintenance, vegetation, animal pressure, and climate.

### Labor

Labor requirements for producing spring lambs are generally low, especially if the flock has sufficient pasture. Little labor is required during spring lambing and winter feeding. Six hours of labor per ewe per year should be sufficient. Approximately 15 acres of fair to good pasture should supply 80 to 90 percent of the nutritional

needs of 30 to 35 ewes. Pasture management can be divided into three categories: continuous stocking, rotational grazing, and set stocking. Continuous stocking means the animals are present on the same pasture for several weeks or even for the entire grazing season. Rotational grazing occurs when an area of pasture is grazed quickly and the animals are moved to a new pasture. Set stocking is a special case of continuous stocking in which a fixed number of animals remains on a specified pasture for a prolonged time.

### Nutrition

Productivity and profit can be seriously handicapped by nutritional deficiencies. Sheep should be given good-quality feed. Fine, leafy roughages with low crude-fiber content are used most efficiently. Feeds such as corn silage and haylage are excellent roughages for sheep.

The grazing season can be extended into winter by using stockpiled perennial grasses, annual crops such as small grains and brassicas, and corn fodder. This works especially well with a spring lambing operation because the ewes' nutritional needs are low during the time when the grazing season is being extended. Extending the grazing season may have a very positive impact on the profitability of the enterprise. Nutritional needs for ewes vary according to weight and stage in the breeding cycle. -Adapted from Penn State Extension- <https://extension.psu.edu/spring-lamb-production>



Fodder or animal feed is any feedstock used specifically to feed domesticated livestock such as cattle, goats, sheep, horses, chickens, and pigs. "Fodder" refers particularly to food given to the animals (including plants cut and carried to them), rather than that which they forage for themselves in pasture and grazing land. It includes hay, straw, silage, compressed and pelleted feeds, oils and mixed rations, and also sprouted grains and legumes. The fodder system we are focusing on here today is a hydroponically grown, quick turn over, and cost effective system.



- Drain and spread into shallow trays that have drain holes
- Water a couple times per day, keep moist and drained for the duration of growing cycle at a temperature range of 60 to 75°F (the lower end of the range helps to reduce mold production)
- Harvest at the desired stage of

growth and feed to the animal

With many regions of the world experiencing record droughts and peak water becoming more of a concern for many businesses and individuals who own and raise livestock, seeking options and solutions to maintain the health and growth of their animals can be a challenge. Sprouting fodder on site can be a dependable and low-cost source of feed and nutritional supplementation, creating a local, on demand feed source that can build great resiliency and independence for homesteaders and those in agricultural industries.

The technique is not new and has been used and investigated for many years but has started to see a resurgence in use. Not only do fodder systems use less water than field grown hay, they also offer many other advantages, including higher productivity through increased nutritional value.

### The Basics of Sprouting Fodder

Like sprouting grains for human consumption (wheatgrass, beans, alfalfa, etc), growing fodder as sprouted grains is relatively easy and has a rapid turnover from start to finished product. The typical sprouting time for fodder is 6 - 8 days and can be adjusted depending on what stage of growth you want to harvest at and the type of animal you are feeding. Many different grains can be used - wheatgrass, barley, oats, etc. Barley is the most popular. The basic method of growing fodder is as follows:

- Soak the sprout grains or seed mix you wish to sprout for about 6-8 hours

- The fodder will grow from a dry seed to a 6 -7 inch plant in as little as 6 days. With multiple trays being rotated on a daily basis, one can grow a continuous supply of fresh feed with very little space, power, and water requirements. The great part is that it is digestible by a great number of animals, from chickens and rabbits, to goat, horses, and cows, this living food can complement the diets of most farm animals.

### Benefits of Sprouted Fodder

There are many benefits to be found from using fresh barley grass and sprouted grains that have been organically and hydroponically grown. When barley is sprouted, it releases many vitamins and minerals as well as converting hard to digest starches in easily digestible proteins. Some of the benefits include:

- Water use reduction and conservation compared to field irrigation
- Reduction in overall daily feed costs.
- Significant reduction of feed waste - the entire root mass is consumed with the grass
- Increased nutritional value in the feed
- High yield in a very small area
- Increase your independence by growing food for your animals with no need for cultivated land
- High digestibility
- Vitamins & mineral saturation
- On-demand availability of fresh green feed 365 days a year - all season access

### Issues and Considerations

Mold and fungus growth can be a problem. Sterile equipment, a low humidity environment, good temperature regulation, clean water, and good air circulation can all help avoid mold and fungus problems.

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*Yes, another article on biosecurity....are you getting the hint?! Birds are migrating and backyard flocks are always at risk! I know the common thought is birds being outside and in fresh air makes them healthy. As this may be true, it also increases risk since they have potential contact with wild birds. Check out this information from the USDA Animal and Plant Health Inspection Service program.*

Biosecurity refers to everything that's done to keep diseases and the pathogens that carry them – viruses, bacteria, fungi, parasites, and other microorganisms – away from birds, property, and people. This includes:

- **Structural biosecurity:** measures used in the physical construction and maintenance of coops, pens, poultry houses, family farms, commercial farms, and other facilities.
- **Operational biosecurity:** practices, procedures, policies that are consistently followed by people.

Biosecurity is a team effort. Everyone involved in raising poultry must use structural and operational biosecurity to prepare for and prevent disease outbreaks throughout the U.S. Put simply: we have to

work together to protect our flocks.

What can you do? You can make sure that biosecurity is practiced each and every day. By practicing good biosecurity, you can reduce the risk of infectious diseases being carried onto your property by people, animals, equipment, or vehicles – either accidentally or on purpose. You will also help protect other flocks by preventing the spread of disease.

The [Defend the Flock](#) program provides practical tips and information from the USDA and other experts for keeping poultry healthy. Visit the [Defend the Flock Resource Center](#) for tools and resources to make your daily and seasonal routines do double-duty to prevent the outbreak and spread of disease. Follow *Defend the Flock* on [Facebook](#) and [Twitter](#) for up-to-the-minute news and information.

Biosecurity is the key to keeping our nation's poultry healthy. It's a responsibility that we all share. Working



#### Here are the basics:

- **Keep visitors to a minimum.** Only allow people who care for your poultry to come in contact with your birds, this includes family and friends. Keep track of everyone who is on your property at all times. Make sure everyone who does have contact with your flock follows biosecurity principles.
- **Wash your hands before and after coming in contact with live poultry.** In addition to potentially spreading disease from farm to farm or bird to bird, you can also spread germs such as *Salmonella* that can impact human health. Wash with soap and water (always your first choice). If using a hand sanitizer, remove manure, feathers, and other materials first because disinfectants will not penetrate organic matter or caked-on dirt.
- **Provide disposable boot covers (preferred) and/or disinfectant footbaths for anyone having contact with your flock.** If using a footbath, be sure to remove all droppings, mud or debris from boots and shoes using a long-handled scrub brush BEFORE stepping into the disinfectant footbath and always keep it clean.
- **Change clothes before entering the poultry areas and before exiting the property.** Visitors should wear protective outer garments or disposable coveralls, boots and headgear when handling birds, and shower and/or change clothes when leaving the facility.
- **Clean and disinfect any tools or equipment before moving them to a new poultry facility.** Before allowing service vehicles, trucks, tractors or tools and equipment - including egg flats and cases that have come in contact with birds or their droppings - to exit the property, make sure they are cleaned and disinfected to prevent contaminated equipment from transporting disease. Items that cannot be cleaned and disinfected - such as cardboard egg flats - must not be moved or reused.
- **Look for signs of illness.** Know the warning signs of infectious bird diseases.
- **Report sick birds.** Don't wait. If your birds are sick or dying, call a local veterinarian, Cooperative Extension service, or state veterinarian. USDA can be reached toll-free at **1-866-536-7593**.



A one percent bleach solution can be used to wash the grains prior to the initial soaking. This will pre-sterilize the seed. Depending on the sprouting setup, it can be labor intensive to rotate and clean trays and transport the "wet" feed. Seed quality can play a factor in the overall success and quality of the fodder produced.

### Conclusion:

When looking at starting a homestead or beginning to raise animals for personal consumption or as a commercial enterprise, the nutritional needs of the livestock being raised will become a key factor in the workload and expense of a setup. Feed availability, quality, and price are all continuous concerns. With good nutrition and supplementation at the forefront, other issues of animal care can be reduced.

By growing sprouted fodder - one can provide a great source of nutrition to a wide range of animals (goats, rabbits, sheep, pigs, horses, cows) and have the ability to locally acquire an on-demand feedstock. This feed will improve the health of your animals, reduce your overall maintenance costs, and build more resiliency into the care of your animals.

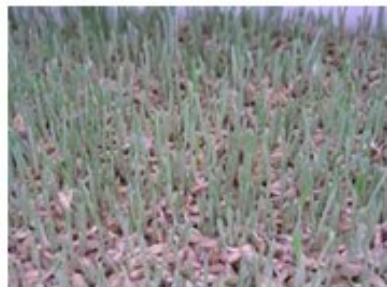
Here is what the growth cycle looks like for barley grass.



Day 1 - Soaked Grains



Day 2 - Initial Spouting



Day 3 - Initial Shoots



Day 4 - Root Mat/Stem Growth



Day 5 - Root Mat/Stem Growth



Day 6 - Root Mat/Stem Growth



Day 7 - Harvest Ready



Day 7



Goat Feeding



## UPCOMING EVENTS

For more upcoming events and information about our programs, contact your  
local county Cornell Cooperative Extension office (on front page)

### April

- 9** **Energy Opportunities on Your Farm**, 7:00-8:00 pm, Sullivan Extension Education Center  
64 Ferndale-Loomis Rd, Liberty, FREE, <http://sullivancce.org/events>
- 9** **Agriculture Career & Job Fair**, 10:00 am-1:30 pm, SUNY Sullivan, 112 College Rd, Loch Sheldrake, FREE,  
contact Michelle Proscia, 845-292-6180 X129, [mml249@cornell.edu](mailto:mml249@cornell.edu)
- 10** **Business Planning with Plans and Profits**, 5:30 pm-7:30 pm, Sullivan Extension Education Center  
64 Ferndale-Loomis Rd, Liberty, \$10/enrollee, <http://sullivancce.org/events>
- 13** **Cow-Calf On Farm Workshop**, 9:00 am - 1:00 pm, Thunder View Farms, 62 Old Brodhead Rd,  
Grahamsville, \$10/person, <https://ccedelaware.org/event/cow-calf-on-farm-workshop>
- 18** **Regional Pasture Management Program**, 5:00-8:00 pm, Crawford Town hall, 121 Rte. 302, Pine Bush,  
FREE, [cceorangecounty.org/events](http://cceorangecounty.org/events), 845-344-1234
- 23** **Sullivan County Animal Rescue Team (C.A.R.T) Meeting**, 6:00-8:00 pm, Sullivan Extension Education  
Center, 64 Ferndale-Loomis Rd, Liberty, contact Michelle Proscia, 845-292-6180 X129,  
[mml249@cornell.edu](mailto:mml249@cornell.edu)
- 25** **Business Plan Writing & Guidance to Basic Accounting Principles**, 9:00 am-4:00 pm, CCE  
Orange County, 18 Seward Avenue, Third floor, Middletown, \$25/person, [cceorangecounty.org/events](http://cceorangecounty.org/events)

### May

- 7** **Intro to Poultry Production**, 6:00-8:00 pm, Online Webinar with Michelle & Rachel, FREE, for more  
information and to sign up go to [cceorangecounty.org/events](http://cceorangecounty.org/events) or contact Rachel at 845-344-1234
- 18** **Beef Cattle Clinic**, 10 am, Stone Wall Farms, 139 Callicoon Center Rd, Jeffersonville, \$30 (includes  
membership & BQA recertification), RSVP by May 11 to 845-701-2418, [stonewallfarms93@earthlink.net](mailto:stonewallfarms93@earthlink.net)
- 28** **Making Quality Baleage**, 6:00 pm, Watswyck Ranch, 60 Sinsabaugh Rd, Pine Bush, FREE, includes  
food, contact Rachel Moody, 845-344-1234, [ram72@cornell.edu](mailto:ram72@cornell.edu)

### June

- 1** **Regional Small Ruminant Seminar**, more information to come, check your local CCE webpages

*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

