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Crops, Cows, and Critters Newsletter

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Every year farmers are injured or killed in electricity-related accidents. According to the National Ag Safety Database, every year 62 farm workers in the United States are electrocuted. To raise an additional cause for concern, 3.6% of deaths among youth under 20 years of age are caused by electrocution.

The changing face of agriculture has raised the need for concern regarding electric safety. Equipment continues to get larger and taller. Grain spouts on combines are becoming longer to get past the headers. Chisels often span forty plus feet to cover many acres on a timely basis. Larger equipment raises the risk for increased electrical line awareness. Accidents with electrical lines can happen any time of the day, but working in the dark or in low light can increase the potential for contact with electrical lines.

If the piece of equipment you are operating makes contact with an overhead electrical line, there are things the equipment operator should do:

- Remain in the vehicle.
- Warn others in the surrounding area to stay away.
- Call 911 and wait for emergency professionals or utility works to say it’s safe to exit.
- In case of fire, jump out and clear and don’t touch the equipment and ground simultaneously. Land with both feet together and keeping both feet on the ground, shuffle away in small steps to avoid shock or electrocution.

Another area of concern beyond electrocution while operating equipment includes coming in contact with overhead lines while outside of the equipment, on foot. Equipment and tools that have the greatest risk for coming in contact include ladders, irrigation pipes, and portable grain augers. Movement of these items shouldn’t be done in the dark or alone, as the potential for losing control is higher.

**Reducing Risk**

As an agricultural producer, you can reduce your risk of electrocution by:

- Always assuming all electric lines and electric equipment is energized. Never touch a power line.
- Be aware of the location of overhead power lines on your farm and choose a route for your equipment that avoids those lines.
- Avoid using ladders, portable augers, or irrigation equipment around power lines.
- When you are using a ladder, use fiberglass with non-conductive side rails, for example, near overhead power lines.
- Tools should be carried horizontally.
- Maintain 10 feet of clearance space between the power lines and your equipment. Contact your power company to determine the height of power lines on your farm.
- Review safety measures with all individuals working on your farm, whether full-time, part-time, voluntary, or family.
- Remember that even nonmetallic objects, such as tree limbs, ropes, and straw, can conduct electricity.
- Stay at least 30 feet away from down electric lines and equipment.

Don’t have an unfortunate planting or harvest season and become a farm accident statistic. Assessing your electrocution standards around your farm and fields while developing a plan, may save a life this year.
The processing regulations surrounding poultry for sale can be confusing. There’s a lot to know in regard to what birds you can process, where you can process them, and who you can sell them to. This article outlines what you need to know!

The need-to-knows of each option are below:

### 1,000 Bird Exemption

**Overview:**
This exemption allows a farm to process up to 1,000 broiler (meat) chickens or 250 turkeys (where 1 turkey is equivalent to 4 chickens) annually. You can also process spent laying hens, ducks, geese, ratites (ostrich, emu), guineas, small game birds (quail, pheasant, and partridge), and squab. These poultry can be processed on-farm with a processing set-up that can be cleaned and sanitized following best manufacturing practices. The poultry must be raised by you and be sold by you. The exemption is per farm, not per person.

**Further processing allowed?**
No. You cannot grind, marinade, add seasonings to, or cook the poultry you process for sale without a 20C licensed kitchen and associated license. You can however part out the poultry into cuts (legs, breast, things, drums, soup bones, etc.) for sale.

**Where you can sell your poultry:**
You can sell properly labeled processed poultry to the end consumer only. This means that birds can be sold off the farm, whether that be through your own farm stand or farm store and at farmer’s markets. You CANNOT sell your poultry to establishments like hotels, restaurants, or schools because the product has not been processed in an inspected facility. Your poultry cannot be sold to a farm store that isn’t yours for resale, and it can’t be sold across state lines.

### 5A Small Enterprise 20,000 Bird Processing Facility

**Overview:**
These facilities can process up to 20,000 birds a year for other farmers, and the birds they process can be resold. They process broiler chickens, laying hens, turkeys, ducks, geese, ratites (ostrich, emu), guineas, small game birds (quail, pheasant, and partridge), and squab. These facilities may offer additional services to processing, including parting out, wrapping, labeling, weighing. Unfamiliar with where your local 5A facility is? Check out this map! [https://www.ccelivestock.com/livestock-processors-in-ny-state](https://www.ccelivestock.com/livestock-processors-in-ny-state)

**Further processing allowed?**
No, unless that facility has a licensed 20C kitchen and the person working in that kitchen is licensed. If they don’t have this license, they cannot grind, marinade, add seasonings to, or cook poultry for sale. They can however part out the poultry into cuts (legs, breast, things, drums, soup bones, etc.) for sale.

**Where you can sell your poultry:**
By processing through a 20A Small Enterprise licensed facility, you can sell properly labeled processed poultry to end consumers and some institutions. However, you cannot sell your poultry across state lines. That said, there are other types of 5A licensed 20,000 bird facilities that can only process their own poultry for their sale or use and facilities that can process others’ poultry, but it can only be consumed by the person who raised the birds. Getting poultry processed at either of these two facilities does not permit resale.

### USDA Processing Facility

USDA facilities offer the greatest flexibility in terms of sales options. There are no restrictions around who you can sell to if you process through these facilities. However, I’m not familiar with the existence of one of these facilities Upstate at the time this article was written.

For further reading to explore 1,000 bird processing, food safety, and labeling regulations, check out the Cornell Small Farms’ On-Farm Poultry Slaughter Guidelines: [https://smallfarms.cornell.edu/resources(guides/on-farm-poultry-slaughter-guidelines/](https://smallfarms.cornell.edu/resources(guides/on-farm-poultry-slaughter-guidelines/)


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**PHOTO CREDIT:** Amy Barkley

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There are limitations for sale when processing on-farm or through a 5A facility. You’re not able to grind, marinate or add seasonings OR sell to anyone other than the end consumer.

Following food safety recommendations when processing on-farm helps you produce a safe, wholesome product that is safe for sale to consumers off of the farm.

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4 - June 2023
The answer is yes, with good management. I’ve had a few calls recently regarding outdoor production. I can’t cover all the details in a phone call but can attempt to provide an overview in an article.

**BREEDS**
Choose breeds that are not from commercial production lines. They won’t perform well outdoors. Look for these breeds or crosses: Yorkshire (not from a production system), Large Black, Gloucestershire Old Spot, Berkshire, Tamworth, or Hampshire. There are a few other breeds that are touted as pasture breeds; some farmers have tried them and gone back to the ones listed. There are some hybrids which have been developed for pasture production. Beware of the sun with the light skinned breeds as they will sunburn.

**FENCE**
Electric fence is most commonly used, but farmers have also used woven or welded fences. Training needs to begin early, sometimes as early as 3-5 days of age. You'll need a secure perimeter with 2 strands of polywire or tape with step in posts. One strand 6", second strand at their chin height with both electrified. You'll need a back fence to keep them off where they have grazed. They need to be kept secure so there are no escapes; pigs and cats are the top two animals that can quickly go feral!

**ROTATION**
Pigs cannot get their full nutrition from pasture as they are simple stomached mammals, like humans. They cannot be left in the woods for the summer and be expected to survive. Anyone looking to get into outdoor production needs to be environmentally conscientious and prevent runoff and erosion. Bare ground can lead to concentrated manure/ponding areas that can lead to increased parasitism and slower growth. Pigs need to be rotated to a new paddock when 70% of the vegetation remains. Some farms will do mob grazing, moving a group to a new paddock a few times a day. As an example, the Rodale Institute in PA raises 80 pigs a year on about 7 acres of pasture. A conservative estimate is 1 lb of pig/sq ft on perennial pastures, ¼ lb. of pig/sq ft on annuals.

**PASTURE PLANT SELECTION**
Do you have perennial or annual plants in the pasture? A mix of legumes and grasses works well for a robust pasture and diverse nutritional profile. Annual planting mixes could consist of a small grain and a type of peas or soybeans. Some farmers will allow the pigs to root and develop wallows in an annual crop prior to reseeding. Make sure you have tillage equipment to handle ruts and rough ground.

**FEED**
I’ve read pasture can reduce concentrate feed by 15-50%. That said, it’s important to reiterate that pasture is a supplement feed, not vice versa. Feed is the largest cost with feeding any livestock, and they will consume more feed when raised outdoors, and heritage breeds may be less efficient with feed conversion. Feed according to the stage of growth. Waste products, such as distillers or brewery spent grains, bakery waste, apple seconds, and vegetable scraps can be fed, but no meat! This can lead to disease transmission. NYS Ag & Markets law (Article 5 Sec. 72a) states, "...certain discarded foods are NOT considered garbage: dairy and cheese waste, including outdated foodstuffs removed from supermarkets (except meat products); outdated eggs, stale baked goods; discarded vegetables and fruit". If food waste is fed on pasture, pigs will still need some purchased feed to fill in the nutritional gaps.

**SHELTER**
This is a key piece to outdoor production; it reduces the risk of sunburn in the summer and provides a place to keep them warm in the winter. In cold months they will need deep bedding. Hay works well since they will eat some of it, but they need lots to snuggle down in.

**WATER**
Pigs always need a clean, constant supply of water. Use of nipple waterers works well for warmer months. Water will need to be warm in colder months.

**MARKETING**
Remember, you are raising a premium meat product, so charge accordingly. Track your costs to have a handle on pricing. Your marketing should begin early in the process.

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**Pasture is a supplement since it doesn’t provide pigs with the complete nutrition they need. They will still need grain or other energy sources.**

**Rotating pig pastures can help with parasite burdens and lessen pasture rutting. Bare ground will lead to issues and slower growth.**
As corn gets planted and feed enters the bunk, it’s a great time to think about a few pests that impact common crops grown here in Southwest NY. In this article, we’re going to focus on insect and animal pests that create damage to corn, soybeans, and alfalfa early in the growing season.

**CORN PESTS**

**Black Cutworm**
There are several species of cutworm found in NYS, but black cutworm (BCW) is the most common. The adults migrate from southern overwintering sites on spring storms. They lay eggs on cover crops, grassy weeds, and winter annuals like chickweed and purple deadnettle. Although several generations can occur, the first generation causes economic loss in the state.

BCW larva are nocturnal and feed at night on young corn plants. Their damage is characterized by missing, cut, or wilted plants. If you notice this damage, try digging near the affected plants to look for the larvae. The key to managing BCW is to scout for damage. Fields that favor outbreaks include late planting, weed infestations, low, wet areas in the field, and those that were previously sod. Typically, the threshold for cutworm damage is 5% feeding to warrant an insecticide application, but this can vary with corn development.

**Seedcorn Maggot**
Seedcorn maggot (SCM) adults lay eggs in the early spring near food sites or in soil cracks. Because they lay eggs in specific locations, heavily manured fields, or those with lots of green manure are at the highest risk. The eggs then hatch and feed on germinating seeds reducing the chance of a healthy plant emerging, often killing it. Damage is more severe during cool, wet springs because of delayed seedling emergence. For more information about SCM, check out the “Seedcorn Maggot Risk Assessment” article in the May issue of Crops, Cows, and Critters.

**Birds**
Birds can be a pest to young plants because they pull the corn out of the ground. They do this because they are looking for the seed at the base of the root. Indicators that birds have been feeding in the field is evidence of feces, rows of plants pulled from the ground like shown in the picture below, and clipped plants.

**SOYBEAN PESTS**

**Soybean Aphids**
Soybean aphids are small yellow-green insects that feed on soybean plants throughout the season. They begin feeding in mid-June, which makes scouting important. If you are experiencing stunted plants, misshapen leaves, or see ants and lady beetles, these are signs that aphids are present in your field. Aphids are usually found on the underside of the plant and on uncurling leaves, so pull plants and evaluate these areas. The threshold for aphids is 250/plant. Avoid tossing in an "insurance" application of insecticides because it will kill many beneficial insects that keep other insect populations such as spider mites, in check.

**Slugs**
Slug damage can be present on both corn and soybeans. Typically, slugs will feed on plants in fields with high residue such as weedy fields, no-till, and fields that were sod the previous year. Slug damage is often more present during cool, moist springs. There are no economical treatments for slugs, so preventing their presence through factors like residue management can help to reduce damage.

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**Do you have concerns about pests in your field or need assistance identifying who the culprit might be? Reach out to Katelyn Miller at 716-640-2047.**

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**Crops Cows & Critters newsletter**

There are many pests that can damage your crops early in the season, so be sure to get out and scout! By scouting, you can avoid using “insurance” insecticide applications.
ALFALFA PESTS

Potato Leafhopper
Potato leafhopper (PLH) is a green insect that is 1/8” long. They feed on newly established fields and regrowth, making them a serious economic pest in NY. The pest arrives in mid-May to late June on spring storms and feeds on alfalfa by removing sap from the plants. This feeding reduces the plants’ ability to photosynthesize but also injects a toxin into the plant. This injection of toxin is how the characteristic “hopper burn” develops. Scout for PLH with a sweep net throughout the summer, making a few sets of 10 sweeps throughout the field. Compare your findings to the threshold chart below and make an insecticide application if warranted. If you are experiencing consistent PLH feeding damage on your farm, consider planting a resistant variety.

<table>
<thead>
<tr>
<th>Average stem length</th>
<th>Leafhopper/sweep</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 3 in.</td>
<td>0.2</td>
</tr>
<tr>
<td>(new seedlings)</td>
<td></td>
</tr>
<tr>
<td>3 to 7 in.</td>
<td>0.5</td>
</tr>
<tr>
<td>8 to 10 in.</td>
<td>1.0</td>
</tr>
<tr>
<td>11 to 14 in.</td>
<td>2.0</td>
</tr>
<tr>
<td>15 in. or above</td>
<td>If leafhoppers exceed 2.0 per sweep and if regrowth is within 1 week of harvest, no action needed. If not, use a short-residue insecticide.</td>
</tr>
</tbody>
</table>

Alfalfa Weevil
Alfalfa weevil overwinters in NY, and in mid-May the adults lay eggs on the lower stem of the plant. Their development is completed by late May to mid-June, making second cutting regrowth vulnerable to damage. Typically, alfalfa weevil feeds on established stands instead of new seedings, so focus scouting efforts on those fields. While walking through a field, pick 50 stems at random. Look for their feeding patterns, characteristically known as a “shot hole” in the buds and upper leaves. If you notice that 50% of plants show signs of feeding, an insecticide application may be warranted.

If you’re interested in more information about thresholds, want more information about scouting for these pests, or you have concerns about these pests in your fields, reach out to Katelyn Miller at 716-640-2047 or km753@cornell.edu.

PHOTO CREDIT: University of Wisconsin
PHOTO CREDIT: Iowa State University
PHOTO CREDIT: Purdue University
PHOTO CREDIT: Unless otherwise stated, all photos in this article were taken by Katelyn Miller

Potato Leafhopper feeds on newly established fields and regrowth, making them a serious economic pest in NYS.
Farmers: what’s in your weed seedbank?

We have funding to analyze weed seedbanks of 50 farms in this region. As a participant, you would get:

- a weed seedbank density and composition analysis of one field at your farm
- photos of identifying characteristics of each species
- a tailored weed management plan that addresses your seedbank based on your current equipment and crop selection
- a bar graph depicting the seedbank density of your farm compared to the other anonymous participating farms
- soil nutrient test results from the sample we collect
- a one-time participation payment of $550

We would need to collect a half-gallon soil sample in 2023; some info about your crop/weed management; an hour of your time in 2025 to discuss the results; and 5 minutes for a phone evaluation. We’ll select participants by July 1st. There will be a couple forms to fill out, but we’ll try to make it as easy as possible for you.

This work is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number LNE23-470-AWD00001024.

JOIN NANCY GLAZIER, NWNYDLFC TEAM AND AMY BARKLEY, NWNYDLFC TEAM FOR A SUPPER AND PASTURE WALK AT HORIZON RIDGE FARMS IN EAST AURORA, NY

JULY 6, 2023, 6PM - 8PM

BOB KOZLOWSKI HAS BEEN WORKING FOR 8 YEARS TO IMPROVE HIS 30 ACRES OF PASTURES TO GRAZE 30 BEEF COWS. SOIL AMENDMENTS, FROST SEEDING, AND INTENSIVE ROTATION HAVE HELPED MANAGE THE FORAGE QUALITY AND QUANTITY WITH HIS HIGH STOCKING DENSITY.

WE WILL EXPLORE:
EARLY SEASON FORAGE QUALITY AND YIELD COMPARISONS
CLOVER VS NITROGEN FERTILIZER
SOIL TEST REPORTS - PAST AND CURRENT
THE "TIGHTY WHITIES" TEST

THIS EVENT WILL INCLUDE DINNER, AND IS FREE OF CHARGE. REGISTRATIONS ARE REQUESTED BY JULY 5TH TO GET A HEADCOUNT FOR DINNER. TO REGISTER, CONTACT AMY BARKLEY 716-640-0844 OR AMB544@CORNELL.EDU

Reach out to Bryan Brown at bjb342@cornell.edu or Katelyn Miller at km753@cornell.edu to apply!
Pasture walks provide the opportunity to learn new concepts and build relationships with other farmers in the area.

Heaven Scent farm is a pasture-based dairy in Bath, NY that raises Jersey cows. We’re grateful for them opening up their farm to host this summer’s pasture walk!

Pasture Walk
Heaven Scent Farm
Bath, NY

Thursday
July 13, 2023, 12pm - 3pm

Join our interactive pasture walk that will focus on soil health and its impact on forage quality, density, fertility, and weed management. Farms of all types are welcome!

A light lunch and refreshments will be provided. Please bring your lawn chairs!

TO REGISTER ONLINE:

This event is one in a series hosted by CCE Allegany; CCE Chautauqua; CCE Livingston; CCE NWNY Dairy, Livestock and Field Crops Team; & CCE SWNY Dairy, Livestock, and Field Crops Team.

This is a FREE event but registering or RSVP is appreciated. For registering or questions reach out to Kelly Bourne at 585-268-7644 or klb288@cornell.edu

SUPPORTED BY:

Cornell Cooperative Extension
South Central NY Dairy and Field Crops Program

The SWNY Dairy, Livestock and Field Crops Program offers educational programming and research based information to agricultural producers, growers, and agribusinesses. Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunity.
June is an exciting time as it marks the arrival of summer, but it is also Dairy Month! There’s nothing better than finding a noble excuse to enjoy delicious food! This annual celebration started in 1937 and continues as a way to pay homage to the remarkable contributions of the dairy industry to our economy, culinary delights, and the community.

Although I was not raised on a dairy farm, I was born in the largest dairy-producing state in Brazil (Minas Gerais) and had grandparents from both sides of my family milking cows at some point in their lives. As a kid, I was always amazed at how much food was prepared and eaten every time I visited my relatives’ farms. I did not understand then, but feeding and caring for people and animals are farmers’ love languages. The warm feeling every time I had a traditional homemade meal prepared with ingredients from the farm is a big part of my childhood’s fond memories - and why I decided to pursue a career in agriculture.

Moving to Southwest New York and working with farmers and the surrounding communities is a privilege I try not to take for granted. The picturesque landscapes, rolling hills, and vibrant farmlands reminds me of home. But more than that, nestled within this scenic beauty are over 680 dairy farms. These farms care for approximately 75,000 dairy cows and produce enough milk to feed 2 million people every day. In addition to making food, dairy farming provides other economic benefits for the area. Studies show that for every $1 a farmer receives, $2.29 is generated in the local community, creating a huge ripple of positive economic impact.

June is the perfect time to celebrate our dairy industry and its impact on our lives. There are plenty of ways to show our appreciation:

- If you know a dairy farmer, ask them about what support looks like to them. They’ll be more than happy to guide you.
- During Dairy Month, watch for special events such as farmer’s markets and farm tours. These opportunities allow you to connect and learn more about these dedicated individuals who work tirelessly to bring us the dairy products we love.
- Whenever possible, buy local products such as artisanal cheeses, chocolate milk, butter, ice cream, and others. That is a great way to support local businesses and the dairy industry as a whole.

Finally, the best way to celebrate Dairy Month is by embracing the flavors, traditions, and stories that come with dairy products. If you have a favorite family recipe, find a good time to make and share it with family/friends. Enjoying the warm feeling of sharing a meal with your favorite people is the best support a farmer will always want.

Speaking of flavors, let me introduce you to my favorite snack from my home state of Minas Gerais, Brazil. It's called "Pão de queijo," or as it's known here in the United States, Brazilian Cheese Bread (It was a big hit after appearing on Shark Tank. This gluten-free bread is made with tapioca flour, eggs, and cheese, creating a unique flavor.

If you’re feeling adventurous this month, I encourage you to try this recipe (see below). It’s sure to be a hit with your family and friends. And trust me, it pairs perfectly with a fresh cup of coffee for a fantastic breakfast. I hope you enjoy it as much as I do!

Camila Lage, from Cornell Cooperative Extension’s SWNY Dairy, Livestock & Field Crops Program, shares her appreciation for dairy farmers.

In May 2023, Pão de queijo was a big hit after appearing on Shark Tank.

This gluten-free bread is made with tapioca flour, eggs, and cheese, creating a unique flavor.

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Camila Lage, from Cornell Cooperative Extension’s SWNY Dairy, Livestock & Field Crops Program, shares her appreciation for dairy farmers.

Small dairy farm nestled within the rolling hills of Southwest New York.

PHOTO CREDIT: Unless otherwise stated, all photos in this article were provided by Camila
In 1939, June became the official “dairy month” and is still celebrated today. Let’s celebrate our region’s dairy farmers by bringing everyone together!

PÃO DE QUEIJO
(Brazilian Cheese bread)

SERVINGS: 25 BALLS  PREPARING TIME: 15 MIN  COOKING TIME: 40 MIN

INGREDIENTS

3 cups Sour Manioc Starch
(Polvilho azedo - you can find on amazon)
1 cup milk
1/2 cup of oil
1 cup shredded Cheddar cheese
1/2 cup shredded Mozzarella cheese
4 large eggs
3 teaspoons of salt

DIRECTIONS

1. Preheat oven to 400°F degrees with a rack in the middle
2. Combine the milk, oil and salt in a saucepan and bring to a boil over medium heat
3. Add the tapioca flour to the bowl, once the milk mixture boils, pour it over the flour. Using a Wooden spoons mix it well. The texture will be fondant-like but rang in there and it will be flourily after well incorporated. Wait until the mixture cool down before adding the eggs.
4. Add the eggs, one at a time. You will think they won’t mix, since the tapioca flour mixture is so sticky, but hang in there because they will.
5. Once the eggs are incorporated, add the cheese, a little at a time, until fully incorporated. The dough is supposed to be soft and sticky.
6. To shape the balls, wet your hands with cold water/oil and, using a spoon, scoop some of the dough to shape balls that are a little smaller than golf sized.
7. Place the balls on a baking sheet covered with parchment paper. Bake on 400°F for 20 to 30 minutes or until they are golden and puffed. Serve them warm! :)

NOTES: To freeze them, shape the balls, place them on the baking sheet and bring to the freezer. Once they are frozen, transfer to a Ziplock bag and keep them in the freezer up to 3 months. Once you’re ready to use them, preheat the oven to 400 as usual and bake the frozen balls for 25 to 30 minutes or until golden and puffy! You can also use air fryer to bake. 6 balls at 400°F for 15 min.
Too Hot To Handle: Episodic Heat Stress Can Be Tough On Cows

By Camila Lage, Dairy Management Specialist

It is still spring, but you are probably already observing some signs of discomfort in your cows when we see days in the 80s. I always believed the Northeast weather wouldn’t be so bad on cows, but that’s not true. Since it takes weeks for cows to acclimate to the heat, episodic heat stress is tough for cows to handle. Investing in heat abatement is a cost-benefit, even in our "moderate climate" area.

Like us, cows have a temperature and humidity range in which they are comfortable, called the thermal neutral zone. The combination of temperature and humidity better shows the environmental effects than each factor individually. For example, we can have a hot day (90 F) that's not humid (0% humidity), and it will feel the same as a moderate day (75 F) with 65% humidity. Looking at the figure below, you can see that the THI, or Temperature-Humidity Index, is 72 in both examples. As I write this article, the temperature outside is 86 F, and the humidity is 30%, which gives us a THI of 75. Research shows that cows, especially our high-producing ones, start experiencing heat stress when THI is around 68. Some researchers are already proposing this number to be lower (65).

Data from St-Pierre et al. (2003) estimated that cows in NY spend 8.2% of their hours during the year heat-stressed, which is enough to generate losses of $23 million per year when we account for the loss in DMI, milk production, fertility, and increased cull rate and death rates. A study by Miner Institute 2016 observed that cows producing more than 77 lbs per day lost at least 5 lbs of milk/day when the average THI was 68 or higher for more than 17 hours daily.

Cows’ heat load is composed of the heat produced by their metabolism and the heat gained from the environment. When the temperature rises, cows must stand longer to control their body temperature since it increases 2x when they lying down compared to when they are standing. Therefore, one of the first signs of heat stress, especially sporadic heat stress, is a higher proportion of cows standing, moving from the side of the barn, and bunching.

More classic signs of heat stress include rapid breathing, open-mouth panting, increased water intake, decreased activity and feed intake, and/or reduced milk production. When you notice cows breathing with 60 or more movements per minute, this indicates that they are struggling to cope adequately with the heat, and additional cooling would be beneficial.

During the 2023 Cornell Herd Health Conference, Dr. Katie Ballard from Miner Institute shared that, based on Miner heat stress studies, cows under sporadic heat stress have a greater risk of acidosis. This is related to a reduction in rumination, slug feeding, and reduced buffer capacity due to panting (losses of CO2 when breathing rapidly)

As temperature and humidity rise, let’s not forget about the basic principles to help animals stay comfortable and profitable:

• Make sure animals have access to fresh water.
• Provide shade to all animals.
• Make sure you have enough ventilation (pens and holding pens).
• Invest in fans that move air – 4-6 mph continuous air speed recommended.
• Position fans that move air across cows when they are standing and lying.
• Don’t forget to clean and perform periodical maintenance on fans to maximize peak efficiency.
• Don’t turn fans off – Cows have their highest body temperature at night.
• Consider adopting water cooling (sprinklers/misters) for more effective cooling.

A higher proportion of cows standing, moving from the side of the barn, and bunching can be the first sign of sporadic heat stress.

12 - June 2023
The Importance of Hay Moisture
by Paul Vining, OSU Department of Animal and Food Sciences Graduate Research Assistant

Cutting and bailing hay sometimes becomes a "hurry up and wait" process, while waiting on passing rain showers. Hay should be baled when it has dried to the point of containing approximately 14-18% moisture. Bailing hay that contains elevated moisture may lead to an excessive amount of heat and possibly combustion then fire. Excessive moisture content allows for increased growth of bacteria and fungi. The presence of oxygen causes these microorganisms to go through chemical reactions which release heat. This continuous heat release increases hay bale temperature, which causes a risk of combustion and the possibility of fire. Even when fire is avoided excessive moisture content will cause a substantial loss of dry matter and decrease hay quality.

Hay Temperature and Fire Risk
If hay must be baled during unfavorable conditions a hay thermometer (36-inch compost thermometer) is a useful tool for measuring hay bale temperature. If hay reaches an internal temperature of approximately 135°F, it is recommended to remove it from the barn. For these suspect bales, check the temperature twice per day and do not place the bales back inside the barn until the temperature has fallen to at least 120°F.

Increased Hay Moisture Content Leads to Decreased Hay Quality
Elevated hay moisture levels (>18%) will decrease hay quality. Hay bales go through a "sweat" following cutting and baling. During this period heat is generated by the increased activity of microorganisms that consume forage sugar and starch. Increased hay moisture content allows for an increase in microbial activity, leading to greater consumption of forage nutrients and a reduction in forage quality. A study conducted at the University of Kentucky evaluated the daily hay temperature and ambient temperatures of two cuttings of alfalfa. The fall cutting was baled at 20% moisture and the spring cutting was baled at 16% moisture. The spring cutting, baled at 16% moisture slowly increased in temperature for 20 days after baling but never reached 120°F. The fall cutting (20% moisture) spiked to 140°F 3 days after baling and returned to a baseline temperature around day 8. The initial spike in temperature for the fall cutting due to increased moisture content would have caused a reduction in forage quality.

Hay does not have to be bone dry to make quality hay without risk of hay fire or heat damage to nutritive quality. Baling excessively dry hay makes bales with low density and contributes to loss of leaves and quality losses. But when moisture is too high, spontaneous heating is problematic for hay quality and risk of hay fires.

Reference:

To decrease the risk of barn fires resulting from improperly dried stored hay, monitor the hay's internal temperature to confirm that it's below 135°F.
Wildfires are an annual occurrence in many areas of the world. New York typically doesn’t experience wildfires, but with the wildfires raging in Canada, smoke has been drifting into the state for the past few days and may continue to do so until the fires are extinguished. The smoke has resulted in air quality concerns, which can affect livestock as well as people.

The particles that we’re most worried about are known as PM2.5. These particulates can cause eye and respiratory tract irritation. Animals with weakened immune systems, such as the very young, old, and sick, may develop symptoms that include the following, shared by Oregon State University:

- Coughing or gagging
- Difficulty breathing, including open mouth breathing and increased noise when breathing
- Eye irritation and excessive watering
- Inflammation of throat or mouth
- Nasal discharge
- Asthma-like symptoms
- Increased breathing rate
- Fatigue or weakness
- Disorientation or stumbling
- Reduced appetite and/or thirst

If you see any of the above conditions in your animals, please consult a veterinarian for assistance and treatment.

Research for livestock wildfire smoke inhalation is ongoing in wildfire prone states, and most of the data is from studies where animals were exposed to high levels of smoke near the perimeter of a wildfire. Because of the distance we are from the Canadian wildfires, it can be extrapolated that there will be some effects on NYS livestock, but they won’t be nearly as severe or long-lasting as what we see in other areas of the country. Poultry will be more affected than mammals because of their unique respiratory system design.

Given what’s currently going on, livestock owners wonder if there is anything they can do now to keep their livestock safe and healthy. The following are best management practices to reduce the effects of being in a smoky environment or environment where the air quality index is poor:

- Move the animals into an area with filtered air, if possible.
- Modify the environment to reduce dust in the air, which can help offset some of the challenges caused by smoke exposure. Dampening bedding or feeding pellets instead of mash feeds are two ways to reduce dust.
- Reduce stress in the animals’ environment.
- Limit working animals’ work, including running, pulling, or herding, especially when smoke is visible. This will help reduce the amount of small particulate matter that makes its way into the respiratory system.
- Provide feed and water in abundance in accordance with the animals’ nutritional needs. Full and hydrated animals are healthier and more prepared to experience these types of environmental health challenges.

Following exposure to a smoky environment, allow time for the animals to heal. This can mean limiting handling or transporting animals, especially those which are showing symptoms or distress from smoke inhalation. Research indicates that in heavy exposure scenarios, it may take 4-6 weeks for the animals’ respiratory system to fully heal, especially for those that are experiencing any of the symptoms listed above.

### References:

- How to Protect Pets and Livestock from Wildfire Smoke: [https://extension.oregonstate.edu/animals-livestock/beef/how-protect-pets-livestock-wildfire-smoke](https://extension.oregonstate.edu/animals-livestock/beef/how-protect-pets-livestock-wildfire-smoke)
- Wildfires, Smoke, and Livestock: [https://cecentralsierra.ucanr.edu/files/220420.pdf](https://cecentralsierra.ucanr.edu/files/220420.pdf)

The conditions that we experienced earlier in the month were not as severe as being in the direct area of a wildfire.
Fun Facts to Celebrate Dairy Month
by Marlene Kouba, Guest Author for American Farm Bureau Federation

June Dairy Month started out as a way to distribute extra milk during the warm months of summer. The commemoration was established in 1937 by grocer organizations sponsoring “National Milk Month.” By 1939, June became the official “dairy month” and is still celebrated today.

Whether it’s in coffee, cereal, or smoothies, adding one more servings of milk to your family’s day can help ensure they get the nutrients they need to build strong bones and teeth. Trusted for decades, dairy farm families pride themselves on producing wholesome dairy foods that help their families grow up strong and healthy.

BY 1939, JUNE BECAME THE OFFICIAL ‘DAIRY MONTH’ AND IS STILL CELEBRATED TODAY.

A few interesting facts about dairy foods and farming are below.

- America’s favorite ice cream flavor is vanilla; chocolate is second.
- The scientific term for “brain freeze” is sphenopalatine ganglioneuralgia. But you can keep calling it brain freeze (or frozen headache) when you eat ice cream.
- Farmers measure milk in pounds, not gallons - 8.6 pounds per gallon is the standard.
- It takes about 10 pounds of milk to make one pound of cheese and just over 21 pounds to make a pound of butter.
- Wisconsin is the only state where Limburger cheese is produced.
- Dairy cows eat about 100 pounds of food every day and drink 25-50 gallons of water.

Chew on these historical tidbits about milk and dairy...how many did you know?

- Home delivery of milk started in 1942 as a war conservation measure.
- Early cheese-makers shaped Edam into balls to roll down the gang planks of ships for export.
- Little Miss Muffet’s curds and whey (from the nursery rhyme) were an early version of cottage cheese.
- Presenting newlyweds with a pot of butter, symbolic of wealth and fertility, was once common in England.

Marlene Kouba is a farmer and Farm Bureau member in North Dakota. She is a former elementary school teacher and taught Ag in the Classroom curriculum for 21 years.
Dry Products: Low/medium heat nonfat dry milk (NDM) markets are steady in the East and Central regions. Production is steady with heavy availability of condensed skim leading into the Memorial Day holiday. Mexico’s interest remains good at current market prices. Dry whey dryer time is steady with available inventory. Whey protein concentrate 34% prices shifted lower through the range. Buyer spot interest has eased as loads move through contracts. Lactose prices are unchanged. Demand is weak as buyers wait for lower prices.

Cheese: Cheese inventories are mixed, but blocks are reportedly tighter than barrels in the Western region. Milk remains widely available. Spot milk loads were priced from $11 to $4 under Class III in the Midwest this week. Comparatively, spot milk prices during the same week last year were $2.75 under to $.75 over Class. Cheese production is trying to match milk availability, as more plants are back online following updates/maintenance. As market prices shift lower, some customers are adding to orders.

Butter: Plenty of cream is widely available. A few manufacturers report lowering the amount of outside cream brought in due to planned maintenance in the coming month. Although some downtime for churn repairs was reported, butter production is strong overall. Retail butter demand is noted as strong to steady, while food service demand for butter is noted as strong to moderate.

Fluid Milk: Milk production volumes are steady to higher across the country as mild weather conditions, suitable for cow comfort, linger. Bottling demand is steady in the eastern region, but Class I sales are starting to feel the impact of schools preparing to let out for the summer. Meanwhile, cream is widely available due to heavy milk production volumes.

Dairy Commodity Markets

Dairy Market Watch is an educational newsletter to help keep dairy producers stay informed of changing market factors affecting the dairy industry.
Above a year ago milk production has slowed. Milk production January through March was 1.0% higher than a year ago. April production was just 0.3% higher. The number of milk cows increased month to month January through March but fell 16,000 in April. Each of the five leading dairy states had April production higher than a year ago except California which experienced a 1.9% decline. New York had 10,000 more cows with milk production up 2.4%.

Despite a slowdown in milk production cheese prices have declined steadily beginning in April and continuing in May. On The CME cheddar barrels averaged $1.8175 per pound in March and $1.5921 in April. As of May 19, barrels were just $1.47 per pound. The 40-pound cheddar blocks averaged $1.9372 per pound in March and $1.7574 in April. As of May 19, blocks were just $1.530 per pound. Dry whey prices have also fallen averaging $0.4449 per pound in March and $0.3709 in April and as of May 19 just $0.2650 per pound. These lower prices will drop the Class III price which was $18.52 in April to around $16.30 in May.

The latest stock report showed total March 31st cheese stocks at the same level as a year ago but still at a relatively high level. While March total cheese production was just 0.2% higher than a year ago cheddar cheese production was up 3.6%. Cheese sales are up some from a year ago. Cheese exports were up year-to-date for eighteen straight months but fell below year ago levels by 0.4% in both February and March. Increased competition from European cheese and economic uncertainty has impacted cheese exports. But year-to-date cheese exports were still 4.0% higher than a year ago. March exports of other dairy products compared to a year ago were butter down 36%, nonfat dry milk/skim powder down 3.0% and dry whey products up 8%. On a milk solids equivalent basis, the volume of March exports was 0.4% lower than a year ago, the first decline in a year. Year-to-date exports were still 5% higher than a year ago.

Looking ahead the Class III price could stay in the $16’s June and July. Class III prices are then Likely to increase for the rest of the year. The increase in milk production over the previous year should stay well below 1%. USDA forecast the number of milk cows to average for the year just 0.1% higher than a year ago with the increase in milk per cow just 0.8% resulting in 0.9% more milk production than 2022. Milk production slows in the summer. Schools start opening in August which increases beverage milk sales. The building of butter and cheese stocks starts in late fall for the seasonal increased sales thanksgiving through Christmas. All of this will push the Class III price higher.

By August, the Class III price could be in the high $17’s, increase to $18 by September and peaking out in the high $18’s by October and November. Class III futures which had Class III in the $19’s just a few weeks ago for the last quarter of the year now is in the $18’s. USDA is not even quite this optimistic about the Class III price forward. USDA forecasts the Class III price to average just $17.75 for the year compared to the $21.96 average for 2022. But all will depend upon what milk production does for the remainder of the year along with domestic sales and exports. But clearly milk prices will stay well below those of 2022. Dairy producer margins will be squeezed. Some relief in lower feed prices are expected by fall if final crop yields turn out as expected.
We’re grateful for NEDBIC’s funding of this webinar and project, which will include a Fall tour of dairy processing facilities, discussion groups, and resource development.

For more information about this webinar or diversifying your dairy business, please contact Katelyn Walley-Stoll (716-640-0522).
THANK YOU TO OUR SPONSORS!
WE APPRECIATE YOUR SUPPORT.
We value your input! Please take a minute to answer 3 questions on farm colostrum program evaluations. The survey will help us plan summer/fall programs for SWNY. If you have questions or suggestions feel free to reach out to Camila Lage at 607-422-6788.