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Cornell Cooperative Extension

Southwest NY Dairy, Livestock and Field Crops Program

swnydlfc.cce.cornell.edu

A partnership between Cornell University and the CCE Associations of Allegany, Cattaraugus, Chautauqua, Erie and Steuben Counties.

CROPS COWS & CRITTERS newsletter

Crops, Cows & Critters Newsletter

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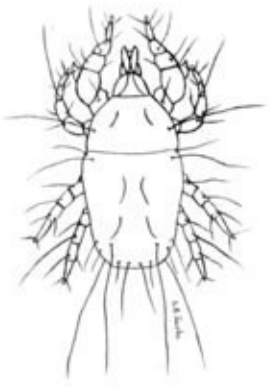
For accommodations or accessibility concerns, please contact our specialists at least one week prior to the scheduled event. If you need information provided in a different format, call 716-640-0522.

My Feed Dust is Moving!? Grain Mites and How to Manage Them

By Amy Barkley, Livestock Specialist



Every summer, I get calls from folks wondering why there are nearly microscopic bugs covering the walls and floors of their feed storage areas and their feed buckets. Looking for a cause, many easily trace it back to their bags of grain. The dust on the exterior of the affected bags appears as if it's moving in a gentle breeze, and there may be a thick layer of dust coating the inside of the feed bags. On closer inspection, it's apparent that the dust is actually hundreds of thousands of nearly microscopic grey-brown looking mites. These are grain mites.

What are grain mites?

Grain mites are very small arachnids that live in processed grains, such as cracked corn, ground wheat, and finished feed pellets, crumbs, or mash. They live in very large populations, with females laying upwards of 800 eggs over their lifetimes, or 30 eggs per day.

Why are they a problem?

Grain mites eat the most nutritious parts of the feed, such as the germ, prior to feeding on other parts of the seed and/or any mold growing on the grain. This consumption decreases the concentration and quality of nutrients in the feed for livestock, which may result in deficiencies. Additionally, they release disagreeable odors that may discourage feed consumption by animals. They are easily transmitted by insects, the wind, and people to other feed storage areas.

How did they get in the grain and what conditions do they need to survive?

The mites either transfer from a feed store, warehouse, mill, or from the environment. It's also possible for these mites to come from contaminated grains in the home pantry, such as flour or cornmeal. Grain mites are not particularly choosy about the grain they inhabit, so long as it's processed. That means that they can transfer back-and-forth between the home pantry and the feed storage area.

The shred of good news is that these mites need specific temperature and humidity ranges to flourish. They thrive in conditions with high temperatures and high humidity (55% or more). Under optimal conditions, the mites can complete their lifecycle in 9-11 days, infesting a feed storage quickly. Research indicates that their lifecycle is completed in 16 days at 71°F and 28 days at 50°F - 60°F.

How do you get rid of them?

If you find that your feed is infested, discard all feed that may have been in contact with the affected bags as well as the affected bags themselves. Alternatively, you can feed out the less infested bags, but this is not recommended because the mites quickly destroy the nutritional value of the feed. If you have a small number of feed bags and the infestation is mild, you can freeze the feed for several days to kill off the mites.

Once the infested feed has been removed, clean the area with soap and water or use an miticide as per the manufacturer's instructions. Eggs and juveniles can bear a protective coating that resists insecticides and soapy water washes. Therefore, repeated treatments may be needed to control an infestation. That all said, the best control strategy is prevention.

Cleaning and sanitizing grain bins prior to adding more feed can help reduce mite numbers. If grain is to be stored in bins or areas for more than 6 months, pre-treating the area with an arachnicide as a preventative can be helpful. The same goes for buildings where feed is stored in bags.

Check feed storage areas at two-week intervals during the warmer months and once a month during the cooler months to identify and treat early infestations. The colder winters of SWNY can act as a layer of control, so long as the grains are exposed to areas with cold temperatures and low humidities.

Another way to manage mite loads is to only purchase the amount of grain that you'll use within 2 weeks in the warm, humid months and enough that you'll use within a month during the cooler months at a time. Clean and sanitize between grain shipments for an added layer of prevention. In addition to keeping mites at bay, the shorter storage time helps to reduce natural nutrient degradation from environmental exposure over time. ▪

These two resources were used to help compile this article:

ENTFACT-629 Grain Mites, University of Kentucky
https://entomology.ca.uky.edu/ef629

Flour and Grain Mites, Penn State University
https://extension.psu.edu/flour-and-grain-mites

Article photo from Penn State University.

If you're unsure if you're working with grain mites or excessive amounts of dust, you can crush some dust between your fingers. If it feels moist, it's likely mites.

Feed that is severely infested will start to have a cobwebby quality to it, and pellets or crumbs may break apart into dull-looking fines.

Managing Feed Storage

By Katelyn Miller, Field Crop and Forage Specialist

Harvesting forages at the correct time is one step toward creating a quality feedstuff, but the job doesn't end in the field. Ensuring your feed is properly stored, whether in a drive-over pile, bunker, bag, or tower silo, will ensure continued feed quality and reduced spoilage.

Inadequate packing in any storage system results in problems with both ensiling and feed out, increased dry matter loss, and reduced quality. Ensuring that oxygen is forced out of the silage will ensure better fermentation and proper packing. See below for feeding rates on exposed forage to ensure high-quality feed and to prevent overheating.

	Feed Rate/Day	
Silo Type	*Winter*	*Summer*
Bunker	3"	4"
Bag	2"	2"<
Tower	2-4"	4-6"

Bunker silos

Advantages	Disadvantages
High capacity	High initial investment
Smaller footprint	Filling/packing influences dry matter loss
Relatively low annual "out of pocket" costs	Labor for packing and covering is critical
Fast unloading rates	Safety concerns

Before chopping, old silage should be removed from the bunk. Lining the walls of your bunk will prevent water from seeping in at the edges creating uniformity in dry matter and silage quality throughout the pack. Sealing and covering your bunk is an important step; a 40-foot by 100-foot bunker can return approximately $2,000-$4,000 in improved silage dry matter recovery from proper coverage. Covering a pile ASAP assists with the desired fermentation process. Be sure to use plastic at least 5 millimeters thick along with tire-to-tire placement. Also, remove spoiled silage and keep the silage face vertical and tight to ensure quality remains for feed out.

This article is continued on the following page….

New York Soil Health Field Day

When: Thursday, August 25th, 9:00 am - 3:00 pm

Registration: Participants must register by August 19th at *https:farmland.salsalabs.org/ny_soilhealth_2022/index.html*

There is no cost to attend and a complimentary lunch will be served.

Where: Gary Swede Farms, 1054 Peoria Road, Pavilion, NY

Participants can expect to learn about:

- Building healthy soils for crop resiliency
- Implementing soil regenerative practices to increase farm profitability; real-life case studies from local crop and vegetable farms
- How the host farmer is evaluating planting green on their western New York farm while learning to minimize herbicide use and maintain productivity

Feeding rates should vary based on the type of silo/storage and the season. If you can't keep adequate feed outs, feed and forage quality will decline.

You're invited to August 25th's FREE Soil Health Field Day in Pavilion, NY. Registration is required using the link above.

Bag Silos

Advantages	Disadvantages
Flexible storage system (quantity and types)	Must be routinely monitored for damage
Small feed-out face to manage (disadvantage if feeding out high quantities)	High plastic use: non-reusable
Fewer safety hazards	Specialized equipment necessary
Feed can be inventoried relatively easy	More land area than bunkers or piles

Ensure you have a clean, flat surface to fill your silage bags and place them at least 4 feet apart. Proper spacing between bags allows the silage to settle and will also help facilitate better feed-out management. Be sure to check your plastic frequently for damage; holes can create drastic dry matter loss and reduce feed quality. Keep the surrounding area clean and ensure you are not getting plastic in your feed.

Tower Silos

Advantages	Disadvantages
Minimize weather-related risks	Lower quality forage can occur between filling periods
Tends to pack well due to their weight	High initial cost
Lower storage losses	Unloads more slowly
Greater mechanization during filling and feed out	Silage moisture is lower than in other silo types

As overall herd size increases on farms, fewer tower units are built. Regardless, upright storage can still be a logical and economical choice for some farms. Best results for this system will be achieved when herd numbers and storage size is matched for optimal feeding rates. Ideally, this system will work best with herd sizes of less than 200 cows plus young stock.

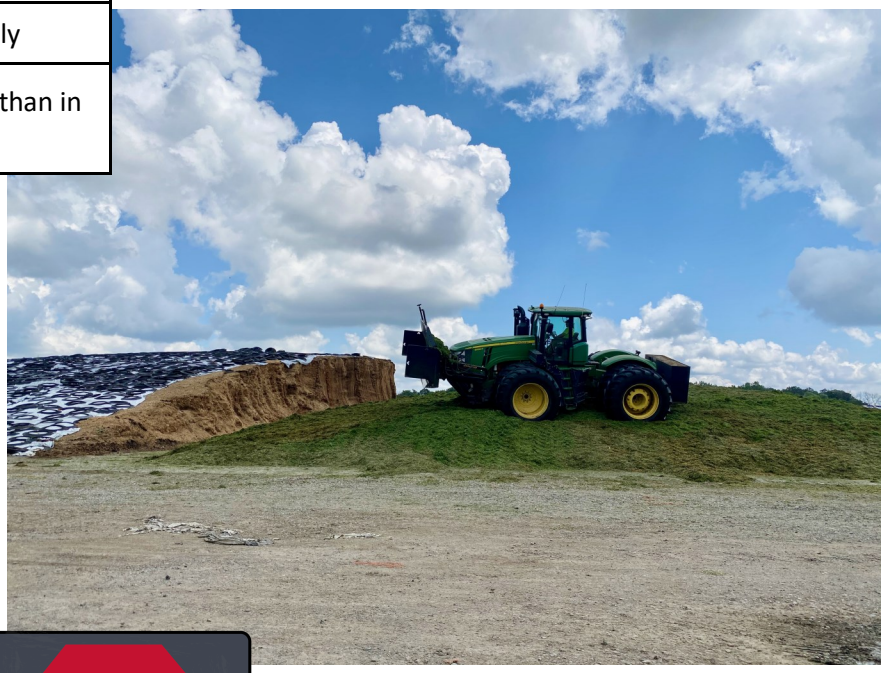
Chart information in this article retrieved from Oregon State University and Lallemand Silage Management Guide.

Drive-Over Pile

Advantages	Disadvantages
Flexible in pile quantity	A large amount of surface area
Fast unloading rates	Potentially high investment in flooring/base
Low capital investment (compared to bunkers)	Safety concerns
Can use conventional farm equipment	Labor for sufficient packing/ covering

This storage system creates flexibility in feed quantity for short-term storage needs. It is more difficult to pack, creating greater loss of dry matter in the long term. Because of this, ensure that your fill rate matches your packing tractor's weight to reduce dry matter loss from inadequate packing and cover immediately. The formula for this is provided in the "Resources for Forage Management in a Drought Situation" article. Utilize plastic at least 5 millimeters thick and use tire-to-tire placement to achieve the highest quality. The slope should not exceed 30%. If it does, the sides of the pile will not pack well and tires will not remain on the pile. Remove spoiled silage and keep the silage face tight to ensure good feed-out quality.

Creating a quality feedstuff is essential to your operation. Ensure that you are taking the proper steps with your feed storage to maintain the quality of your feed. ▪



Depending on the number of animals you're feeding, your equipment, and your forage harvest schedules, one type of silo will be better suited for your farm.

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For more information about forage and field crop harvest and storage, contact Katelyn Miller by calling 716-640-2047.

Resources for Forage Management in a Drought Situation

Provided by Cornell PRO-DAIRY

Agronomic Considerations: Short Term

Fertilizer

Nitrogen on Grass for a late summer/fall cutting can be beneficial IF you receive moisture for the crop. Plants require moisture to take up most nutrients and there is a low likelihood of efficient nutrient utilization or crop response to fertilizer during dry conditions.

Plant Health Inputs

Fungicides with plant health labels have shown to be beneficial under certain growing conditions, particularly when plant diseases are present but are unlikely to provide any sort of economic response to a crop that is simply lacking moisture.

Harvest Management

If the crop has "shut down" significant new growth is unlikely in the event rain does come. Any chance for new growth with rain will come from clipping the old growth to encourage new growth when moisture arrives. Grasses – Cut High (4"). Cutting height is always critical but can have an even greater impact on a crop that is under stress. Do not overgraze pastures. Move animals frequently and leave adequate stubble.

Potato Leafhopper

This pest tends to prefer dry, hot conditions and routine scouting should be performed. By the time the damage to the plants is visible it is too late to treat. These fields should be clipped to control the pest and encourage new growth.

Rotational Considerations

The prospect of obtaining additional forage from late planted summer annuals, such as oats planted in early August, or winter forages, such as triticale or rye planted in September, will be dependent on late season moisture for establishment.

Agronomic Considerations: Long Term

Fertilizer

Proper fertility will promote overall plant health and production in all conditions, including stress conditions such as drought. Harvesting corn as whole plant silage removes a larger amount of nutrients from the field than grain harvest.

Harvest Management – Fall Cutting

With perennial hay fields already under stress consider your current forage needs with the rotational status and future expectations of the fields. Alfalfa is particularly sensitive to fall harvest timing and there is a need to weigh the need for extra forage with the potential long term persistence of a field.

Rotational Considerations

While it is unconventional to plant a winter grain crop into a sod field if you have gravely underperforming hay fields that are scheduled for rotation planting a winter forage into them this fall may provide greater early season production next spring than the existing sod crop.

Soil Management

While tillage will dry the soil in the short term, dry soil conditions lend themselves to proper utilization of compaction alleviating practices such as deep ripping to address on-going field problems. Reduced and no-till practices promote soil health and resiliency, including moisture management in wet and dry conditions.

Feed and Feeding Considerations: Short Term

Forage Inventory

It is critical to accurately calculate current forage inventories and continue to track them with usage rates. While the exact impact on the corn crop is still somewhat unknown projecting yields and addressing expected shortfalls should start now.

Harvest Management

Continue to strive for top quality feed. Even if quantity is short it is generally easier to source lower quality feeds, to build inventory, than high quality feed. Avoid Ash in Feed - Low cutting height can increase DM yield but they can also increase non-forage DM (Ash) which will impact several aspects of forage quality. Closely watch the stage of crop development to assure proper harvest timing.

Feed Storage

Harvest at the correct stage and dry matter Corn - Assure adequate processing of kernels present . Bunk Silos - Pack thoroughly , Cover with two layer

Grazing is an art and an essential component of this art is estimating the forage needs of the animal with pasture forage availability in the pasture.

Having more animals than the pasture can support will lead to overgrazing which leads to compaction and weakening the soil's health and its ability to support the higher-yielding pasture species.

oxygen limiting plastic, Manage face at feed out . Consider use of inoculants. Sample and test forage early and often to assess feed quality.

Nitrates in Forage

Forage Nitrate issues warrant attention but are most generally only an issues in feeding green chop or when harvested immediately after a "drought ending" rain event.

Water Supply

Have your water tested, in addition to adequate supply changes in the water table can affect water quality throughout the year. This could also exacerbate nitrate issues in total diets.

Purchasing Feed

These situations often make pricing difficult in respect to both supply and quality. o Assess local supply & demand dynamics. Request forage quality analysis .

Feed and Feeding Considerations: Long Term

Impact on Lactation

Any feeding changes made now in an effort to cut cost or forage usage will have ramifications for the remainder of these animals lactation. Shorting young stock on nutritional needs can follow them throughout their life.

Future Forage Needs

Assess impact of current forage shortages, how they will impact the coming year's inventories and what adjustments to your crop rotation may be needed to adequately rebuild desired inventories. If you are growing BMR corns consider the yield differences associated with these crops and if the need to rebuild forage inventories with higher yielding hybrids exceeds the benefits of BMR.

Storage Management

Thoroughly examine feed storage structures and their management. Decreasing Dry Matter losses by improving storage can gain you forage in the short term and improve inventory management in the long term.

Safety!

Harvest is a busy time for farm operations. Time means money when it comes to yields, production schedules, and operating costs. However, time also ensures safety at harvest. The extra time it takes to perform a task properly can determine whether the job is completed at all. Harvest season comes with many stresses. Exposure to dangerous situations can increase the mental pressure, and your risk of injury. Follow safe practices around harvest equipment to make the most of your work time. The most important goal is to send all family members and employees home to their families SAFE … EVERYDAY!!

Planning and Teamwork

Accomplishing key field operations at the correct times can be a challenge under the best of circumstances but can be especially challenging under inclement conditions and achieving your goals might come from a different way of thinking. Consider the 5,000-foot view of the land that you and your neighbors work and think of the inventory of people and equipment potentially available to accomplish the needed activities for the collective land base. Are there opportunities to share equipment and time even where you haven't done so before?

Calculate adequate packing weight

It is critical to match forage deliver rate to packing weight to achieve adequate densities in the silo. Adequate density will increase the tons of storage within the given footprint and provide a better environment for up front fermentation and long term forage stability.

MINIMUM packing weight needed (tons) =
800 lbs packing weight * Delivery Rate (tons/hour)

While Harvest Season is a hectic and stressful time of year, ensuring and prioritizing the safety of your crew will make sure everyone gets home.

Knowing your adequate packing weight is important to increase your storage capacity and improve fermentation/stability.

To Retrofit Or Not To Retrofit, That Is The Question!

By Tim Terry, Pro-Dairy

Dairy farming is a constantly changing business. Farming for the long-term will require a facility that can change, as well. Expansion, new technology, and new enterprises may all be in every sustainable farm's future. Planning for a new, or remodeling and retrofitting an existing facility, is best done carefully and thoughtfully. We have all seen farms laid out in a chaotic array of buildings, and driveways that are inefficient now and make future improvements difficult or even impossible. Why retrofit?

Figure 1 – Robotic milking units retrofitted into an existing holding area.

The short answer to this question is often, "Efficiency."

For the sake of production efficiency, the farm is trying to incorporate a new technology, for the sake of investment efficiency they are trying to do so in an existing structure. Most of the time this a sound business strategy, unfortunately, if all aspects are not carefully and dispassionately considered, this could lead to a false economy.

Regarding new versus retrofitting an existing facility consider first the condition of the facility. If it is not meeting expected standards in terms of animal comfort and ventilation or lacking in any manner of internal environment then that's a deal breaker. The only job of many of these new technologies (robotic milkers, calf feeders) is to perform rote tasks and collect data. So, then the question becomes: Do we remodel / renovate or build new?

A helpful guideline is: If the retrofit/remodel is 50% or more of a new facility, go for the new facility. The 50% is not a hard line and there can be a certain amount of discretion included in that, however, there are three reasons that support this:

1. We tend to overestimate the value of the existing structure. There is almost always the sentimentality factor, and it can be very hard to walk away from, let alone raze, the building Great Grandpa constructed with his own two hands from the raw materials he found on site. However, we need to see this as sunk capital. Just as if it were sitting on the bottom of the ocean, it is gone, the investment is unrecoverable, and throwing more good money after it is not a wise use of resources.
2. We tend to underestimate the cost of remodeling and/or upgrading the facility to accept the new technology. Quite often we can't appreciate the full scope of the project until we start peeling back the layers and exposing the hidden structure. We may not even be able to install the new system without compromising the structural integrity of the facility. Many may feel they can reduce expenditures by doing it themselves but fail to consider the disparity in skill levels between themselves and the professionals, the amount of tinkering required to retrofit 21st century technology into a 19th century building, the availability of the necessary tools and materials, and lastly, how they're going to fit it in with daily chores, planting, harvesting, etc.
3. We fail to properly value the cost of long-term inefficiencies that remain with the old facility. Even if it takes only five minutes per day that's over a half hour per week and 30 hours per year. However, it's rarely just five minutes or only one person. Add to this the potential reduction in animal performance.

Other Considerations

Space - Is there enough available space to install the new technology, allow it to work effectively, and be able to maintain it efficiently? Will there be room for upgrades and/or expansion? It is very short-sighted to shoehorn a system into an old facility with no room for future improvements. Moreover, local codes may specify space requirements and/or minimum separation distances.

Layout and number of units - Can we install the correct number of units required to service the current number of animals? Will the layout be logical and efficient? Many systems will use a common controller for multiple

Why retrofit? The short answer to this question is often, "Efficiency." technology. However…

We tend to underestimate the cost of remodeling and/or upgrading the facility to accept the new technology.

Whenever possible, entry and exit should be straightforward. It should also allow for them to fully pass through a one-way gate before changing direction.

Ventilation **-** Whether the facility is naturally or mechanically ventilated, you will most likely have to provide some supplemental ventilation in and around the particular units. Circulation fans can boost air flow over a control room in tunnel and cross vented barns. Having a dedicated fan over a milking or feeding stall will keep fresh air moving in the confined space as well as deterring biting flies in the summer.

Ancillary Items

Footbaths - Footbaths should be placed where they are easy to access and easy to exclude. They also need to be narrow (24"- 32") and 10' to 12' long. This will keep animals moving while also forcing multiple submersions of all feet. At least one side should be able to open out should an animal go down and not be able to get back on their feet. Emptying, cleaning, and recharging must be easy to complete, or it may not be done in a timely manner. Drain plugs and frostless hydrants need to be included in the design. Some farms elevate a tote of premixed solution over the footbath so that it may be quickly refilled.

Figure 2 – Elevated totes of premixed footbath solution.

Segregation pens - Many may see this as wasted space since it is so infrequently occupied. However, when coupled with a robotic milking system (RMS) it allows for full use of the herdsman abilities of the RMS. Any cow requiring special attention can be redirected to this pen following

milking. Then the herdsman, vet, breeder, etc. can find the animal without having to search the entire group pen. In the meantime, the animal still has access to feed, water, a stall in which to rest, with full access to the robot.

Treatment Stall - Even in the healthiest of herds, at some point all animals will need to be vaccinated, hoof trimmed, dry treated, etc. These activities cannot and should not be completed in the milking stall. The treatment stall is usually located in or near the segregation pen for easy access. Gating should be set up such that one person can move an animal quickly, quietly, and safely with little effort. Ideally, there should be a minimum of 6' of open space around the perimeter of the stall. This provides ease of access to the animal as well as an escape zone should an animal become unruly. ▪

Timothy X. Terry—Email: txt2@cornell.edu

PRO-DAIRY seeks farm partners for greenhouse gas project

PRO-DAIRY Dairy Environmental Systems (DES) is seeking farm partners for a study of greenhouse gas (GHG) emissions from manure storage sites. Methane is an important GHG emitted from manure storages. New York State (NYS) has begun an intensive effort to reduce methane emissions in support of the Climate Leadership and Community Protection Act (CLCPA). Despite its significance in air quality and climate change, the sources and quantities of methane from dairy farms are uncertain. DES has a project to help define the existing impacts of methane from manure storage and the potential treatments to reduce it. The project aims to improve GHG emission estimates and provide observational evidence to support best practices to reduce emissions from dairy farms in NYS. Results will inform how to help dairy farms establish a baseline and then move towards sustainability. DES will measure air methane concentration using a backpackable gas analyzer around and near the perimeter of in-ground, long-term storages of dairy manure about once monthly for at least two years and up to 30 months.

If you would like to participate or know someone that would, please contact Camila Lage at cd546@cornell.edu or 607-422-6788 for more information.

A helpful guideline is: If the retrofit/ remodel is 50% or more of a new facility, go for the new facility.

If you have any questions about retrofitting a facility or building a new one feel free to contact Camila Lage at 607-422-6788 or Tim Terry at txt2@cornell.edu

The Delicate Art of Weaning Calves

By Dr. John Comerford, Penn State University Extension

The most traumatic experience for cow-calf producers is when they wean their calves—and it is not real great for the calves, either. For the producer, it is about payday for the calf business. For the calf, it is the beginning of a series of tough, and sometimes lethal, events. Losing Mom, vaccinations, new feed, new places to find water, transportation, and commingling with new cattle are all sources of stress to the newly-weaned calf, and they are additive in nature. We often see the value of preconditioned and weaned calves be significantly higher than auction calves that were often weaned on the way to the sale barn. The reason is the calf has adapted to weaning and is ready to eat and perform more quickly and with less potential for disease.

Weaning Methods

The typical weaning method is to sort all the calves from the cows, shut the calves up in a barn, move the cows as far away as possible, and then put up with the bawling for a few days. What happens if we reverse this picture?

Breaking the dam-young bond may be the most important factor in weaning. Weaned calves placed in a group will quickly bond to other calves if the dam is removed. A 2003 Penn State study showed this period of adaptation can be influenced by leaving dams within hearing of the newly weaned calf. Calves left within hearing of their dams developed new bonds with fewer signs of distress by 3 days after weaning, while calves removed from hearing of their dam took an average of 6 days to show reduced signs of distress. In this case, we may want to consider putting the cows in the barn drylot and leaving the calves in the pasture.

Fenceline weaning is a variation where cows and calves have both visual and hearing contact with the dam. The first consideration is fencing. Fencing should, of course, be substantial enough to prevent the calves from nursing and keep the cows and calves separated. One method to ease the distress for calves in fenceline weaning is to pasture the cows and calves together in the pasture where the calves will be after weaning for a few days. This allows the calves to find water and feed more easily. If this is not possible, put a yearling heifer or a dry cow in the pasture with the calves to help lead them to feed and water. Since there should be some return for weaning calves prior to marketing, it is important they gain some weight during the weaning period. Obviously, feed intake is not a high priority at weaning. For pasture-based weaning, this means the forage must be plentiful and be high quality. Additional supplements can be added to increase weight gain, but they should be limited to 1% of the bodyweight or less to be efficiently used. Can fenceline weaning actually increase weaning weight and gain?

As long as they do not get sick, traditionally-weaned calves will usually catch up to their fenceline counterparts if given enough time. However, as in the above case, having 3 of 10 calves get sick is enough reason to consider alternative weaning methods. ▪

Item	Fence-line	Traditional
Number of calves	61	61
Avg. weight (lbs) Beginning	476	481
Avg. weight (lbs) Ending	511	501
Days to 1% Consumption	5	4
Daily Consumption(lbs/head): Supplement	4.63	4.74
Daily Consumption (lbs/head): hay	3.04	8.50
Morbidity (%)	0	3.3
Mortality (%)	0	0

Whitley and Shankles, 2003.

Weaning is a stressful time, but close management can result in a reduced impact on health and gains in calves.

Having the group of dams in the pasture next to a group of calves can help them more easily find feed and water during the weaning period.

CROPS COWS & CRITTERS newsletter

Some Reminders from Your Friendly, Neighborhood, Extension Agent

By Katelyn Walley-Stoll, Farm Business Management Specialist

Renting Land (and Landowner Relationship Management)

If you haven't already, now would be a great time to take some fresh, home made (or freshly bakery bought) cookies to landowners that you're renting from. Check in with them and ask about any upcoming parties/weddings/events that they might be hosting to avoid running tractors down the road on that specific day. Make sure they're okay with everything you're doing, ask about their summer, and check in on your written lease agreements.

Monkeypox: CDC Guidance for Farm Worker Housing

From Cornell Ag Workforce Development: Monkeypox is circulating in the population. The CDC has posted guidance about the spread, symptoms, and guidance on their website. For congregate housing settings, there should be increased sanitation measures to prevent the spread of Monkeypox among the farm workforce. As a farm manager, be sure to communicate with your employees, respond to cases, and encourage increased handwashing/ cleaning. It might also be a good time to pull the personal protective equipment back out.

Fall Income Tax Planning

Contrary to how things usually work out, the best time for income tax planning isn't December 26th. While those last minute drives to pick up a new tractor are always fun, start thinking about your income tax situation NOW before you're even busier out in the fields. Give your accountant a call, tally up your current income and expenses for the year, and plan for any necessary purchases or deferments. Last Fall, our team of Farm Business Management Specialists hosted a Farm Tax School Webinar Series. The recordings are all available here: farmbusiness.cornell.edu/home/cce-farmer-tax-school/

DAP Funding for Farm Business Planning

A reminder that there is still Dairy Advancement Program Funding available for dairy producers who are looking to improve their recordkeeping (Quickbooks, DairyComp, etc.); go through the Business Planning process to prepare for succession, expansion, or changes; or to develop and implement comprehensive nutrient management plans. DAP is funded by NYSDAM and NYSDEC. To apply or to learn more, you can contact Katelyn Walley-Stoll or Camila Lage in Southwest New York. DAP funds cover 80% of the cost of the project up to $2,500 - $10,000 depending on the project.

New York State Farm Directory

NYSDAM is creating a farm directory that will connect consumers to farm products, as passed into law in February of 2022. Farms need to update their website profile OR opt-out. This includes sharing your contact information, the types of products you produce and sell, and any other details you'd like to share about your farm. You can always join back in or opt out later. You can make those adjustments by visiting surveymonkey.com/r/farmdirectory. You can also call the Farm Directory Team at 518-485-1050.

Support Your Local CCE Association

Our program, Southwest New York Dairy, Livestock, and Field Crops Team, is a unique partnership between Cornell University and the 5 CCE Associations of Allegany, Cattaraugus, Chautauqua, Erie, and Steuben Counties. We're funded through local CCE Association shares, along with State/Federal funding and research grants. It's important to support your local CCE Association in all of the great work that they do to help keep our team going. You can do this by enrolling/subscribing/joining, volunteering by serving on their boards and committees, and calling your local legislators to share all of your positive experiences with CCE.

USDA Accepting Applications to Help Cover Costs of Organic, Transitioning Producers in New York

Applications for reducing the costs of organic certification are due **October 31, 2022.** Apply by contacting your local FSA. You'll need to provide documentation of your organic certification and expenses. Your certifying agency may be able to help.

A team of CCE Specialists are working on a research project to determine the average land rental rates and custom harvest fees for NYS on a regional basis.

CROPS COWS & CRITTERS newsletter

For any questions or comments about the tidbits of information on this page, contact Katelyn Walley-Stoll at 716-640-0522.

Staying Safe Around Beef Cattle

By Rich Taber, Cornell Cooperative Extension of Chenango County

Each year, thousands of people throughout the USA are injured, and a few are killed when around cattle. Beef cows and bulls can be extremely large, heavy animals sometimes weighing upwards of a ton. After a lifetime of working around dairy cattle, beef cattle, and sheep, I have seen my share of accidents with different classes of livestock. Bulls in particular can be extremely dangerous. They can be territorial and may attack you if you disrupt them when they are breeding.

Several years ago, a former FFA student of mine was killed by a belligerent Jersey bull. That same year, I was attacked by a young Jersey bull that I was using to breed some dairy heifers. The bull had been fine and acted just like any other animal in the herd. Then one day out of the blue he came after me while I was in the back of an old manure wagon feeding hay. I came out of this unscathed; however, the bull soon left the farm.

As a rule, beef bulls are not as dangerous as dairy bulls, but still can never be trusted. Cows with newborn calves can be very aggressive towards humans and you must never turn your back on them. If you're going out into the pasture to ear tag or check on baby calves, a bawling calf can trigger very hostile reactions from the mama cow, and its best to take someone with you for assistance.

Before we delve further, I am going to suggest that you investigate the docility of the breed of cattle that you are working with. Some breeds are much more docile, and "laid back" if you will. Artificial insemination studs have docility indexes for different breeds; docility can vary between breeds as well as within breeds. I have a crop of calves this year that "go ballistic" when we try to handle them; I will not be retaining any of them for breeding replacements. I will be looking for a different sire breed next year for my replacement bull. As you get older, dealing with wild, unruly animals gets old quickly! If genetics can help, avail yourself!

I have some information here excerpted from Gempler's Tailgate Training Tip Sheet #98. "Dangers of Bulls and Other Cattle" and embellished with some of my own experiences.

- Often, injuries occur because an animal, such as a cow, appears to be gentle, and the person working with the animal is caught off guard. This is the old "familiarity breeds contempt" concept. I recently read of an animal sanctuary farm taking in a mature bull that for about a year was the hit of the farm, as he let visitors rub his nose and forehead. Then the day came when he maimed and almost killed his handler in a twist of personality.
- Bruises, broken bones, crushed limbs, or even death may occur from falling or getting knocked down or run over by an animal.
- Cattle are unable to see directly behind them, because of that, they can be easily startled. Speak gently and don't yell or scream at your cattle.
- As mentioned, if a cow has a newborn calf, be sure to keep your distance because the mother will be very protective and avoid walking between the cow and her calf.
- Its critical that you use extreme caution when you are around a bull. I make it a practice of always keeping note of where the bull is when I am out feeding my herd. I have to get off the tractor to peel the remaining net wrap off of the round bales. I try to remove as much plastic outer wrap and net wrap or strings before going into the field. Generally, I can't cut the net wrap off until I am right at the bale feeder or else the bale will fall apart before I want to deposit it. But the bull's location is always on my mind!
- If you're in a weather pattern with endless rain and subsequent mud, muck, and sloppy conditions being the norm, I move my feeders every few days to limit the formation of quagmires which are unsafe to work though. You don't want to be stuck in a quicksand like, boot sucking nightmare that impede your movements

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When working with cattle, always know where they are in relation to you and your equipment.

Always identify a safe area where you can quickly get away from the herd should you need to.

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- Never beat your cattle with clubs, sticks, canes, etc. Keep your voice low and make loud noses that can startle animals. NEVER EVER run or chase animals!
- If the cows get out, and people unfamiliar with cattle handling techniques come to help you round them up, instruct them NOT to chase, yell, or run after cattle! I have had better success in rounding up cattle with one or two experienced handlers rather than a bunch of people running around stirring up a disaster!
- Always plan an escape route in case you run into trouble.
- Know that cattle have a "flight zone." This is the animal's personal space. When you come within that zone, the animal will move.
- Never mistreat cattle! If you see a co-worker beating or hurting an animal take remedial action!

Beef cattle sooner or later require management activities to occur; this necessitates that the animals be restrained. Castrations, vaccinations, pregnancy checking, artificial insemination, and ear tagging are a few examples. If you're in the beef business for the long haul, you will need to invest in a handling system. A squeeze chute will be at the top of the list, as well as a corral system to handle the animals.

"Bud boxes" have become quite popular in recent years to handle cattle in; they funnel the animals safely into the squeeze chute. Veterinarians will be much more conducive to coming to your place when needed if the animals can be safely restrained.

Temple Grandin is a world-famous teacher and author concerning the safe, humane handling of farm animals. Her knowledge has been influential in retrofitting animal facilities to safer and more humane facilities. Two excellent books that she has authored are "Humane Livestock Handling" and "Working with Farm Animals".

Learn About Organic Farming and

Join in on a Tomato Tasting with Other Beginning Farmers

Join the Northeast Organic Farming Association of New York and the Young Farmers Coalition of Western New York at Dirt Rich Farm in Springville for a two-part event on Wednesday, August 24th: an educational presentation about making a living in farming at 4:30pm - 6:00pm, followed by a tomato tasting from 6:00pm - 7:30pm. You're welcome to attend just one portion of the event or come for the whole thing!

What does it take to make a living from farming? At 4:30pm, farmers Laura Colligan and Ryan Leggio will talk about the history of Dirt Rich Farm, which Laura started in 2015, and how they grew the farm business to the point where they were finally able to make a living from farming without off-farming jobs by 2021. Dirt Rich Farm is a Certified Organic vegetable farm with 2 acres in production, growing for a 150 member CSA, a farmers market, a farm stand, and sales to local businesses. You'll also hear from USDA NRCS about NRCS programs that support small and beginning farmers and NOFA-NY Certified Organic, LLC about organic certification.

Dirt Rich Farm grows 20 different varieties of tomatoes, so at 6:00 pm, we'll do a tomato tasting to try all the different varieties and choose our favorites as a group. If you're a farmer or gardener, we encourage you to bring some of your top varieties for the group to taste, too! A light meal with Dirt Rich Farm vegetables will also be served. Please bring your own plates, cups, utensils, and something to sit on.

The event will be held at Dirt Rich Farm, **12318 Springville Boston Rd, Springville, NY 14141**

Please RSVP to Amy Barkley at amb544@cornell.edu or 716-640-0844 so that we can get a head count for dinner. Thank you, and looking forward to seeing you there!

Farmers young and old and of any enterprise are invited to join in on the event on Wednesday, August 24th.

Cattle are prey animals, so they obey the "fight or flight" mentality. Most will choose flight, but some may fight.

Dairy Market Watch

July 2022

PRO DAIRY Education & Applied Research
prodairy.cals.cornell.edu

Prepared by Katelyn Walley-Stoll.

An educational newsletter to keep producers informed of changing market factors affecting the dairy industry.

Milk Component Prices			Milk Class Prices				Statistical Uniform Price & PPD				
Month	Butterfat	Protein	I (Boston)	II	III	IV	Jamestown, NY		Albany, NY		Albany $/gal. to farmer
June 21	$1.96	$2.53	$21.54	$16.66	$17.21	$16.35	$17.35	$0.14	$17.95	$0.74	$1.55
July 21	$1.89	$2.49	$20.67	$16.83	$16.49	$16.00	$16.91	$0.42	$17.51	$1.02	$1.51
Aug 21	$1.85	$2.45	$20.15	$16.51	$15.95	$15.92	$16.54	$0.59	$17.14	$1.19	$1.48
Sep 21	$1.93	$2.60	$19.84	$16.89	$16.53	$16.36	$16.81	$0.28	$17.41	$0.88	$1.50
Oct 21	$1.94	$3.01	$20.33	$17.08	$17.83	$17.04	$17.29	($0.54)	$17.89	$0.06	$1.54
Nov 21	$2.15	$2.75	$21.23	$18.40	$18.03	$18.79	$18.39	$0.36	$18.99	$0.96	$1.64
Dec 21	$2.29	$2.59	$22.42	$19.84	$18.36	$19.88	$19.34	$0.98	$19.94	$1.58	$1.74
Jan 22	$2.95	$2.35	$22.96	$22.83	$20.38	$23.09	$21.59	$1.21	$22.19	$1.81	$1.91
Feb 22	$3.02	$2.31	$24.89	$23.79	$20.91	$24.00	$22.52	$1.61	$23.12	$2.21	$1.99
Mar 22	$3.09	$2.71	$26.13	$24.76	$22.45	$24.82	$23.59	$1.14	$24.19	$1.74	$2.09
Apr 22	$3.41	$3.42	$27.63	$25.71	$24.42	$25.31	$24.92	$0.50	$25.52	$1.10	$2.20
May 22	$3.10	$3.86	$28.70	$25.87	$25.21	$24.99	$25.42	$0.22	$26.03	$0.82	$2.24
June 22	$3.33	$3.41	$29.12	$26.65	$24.33	$25.83	$25.83	$1.50	$26.43	$2.10	$2.28

June Utilization (Northeast): Class I = 27.5%; Class II = 23.4%; Class III = 30.5%; Class IV = 18.6%.

***Class I** = fluid milk; **Class II** = soft products, cream, and yogurt; **Class III** = cheese (American, Italian), evaporated and condensed products; **Class IV** = butter and milk powder.*

Dairy Commodity Markets (Excerpt from USDA Dairy Market News – Volume 89, Report 29, July 22nd, 2022)

Dry Products: : Low/medium heat nonfat dry milk (NDM) prices dipped lower this week. High heat NDM prices are down. Inventories are snug across regions, muting spot trading. Dry buttermilk prices are steady to lower. Some ice cream makers are purchasing condensed buttermilk, limiting supplies for dryers. Dry whole milk prices are unchanged.

Cheese: Throughout the country, milk production is declining, but Class III milk remains available for cheesemaking. In the Northeast and West regions, cheese production is steady. Cheese inventories are available in the Northeast and West, but curd and barrel inventories are tight in the Midwest. Some Northeastern contacts are, reportedly, concerned about supplies outpacing demand amid soft retail sales and steady to lower food service demand.

Friday CME Cash Prices					
Dates	6/24	7/1	7/8	7/15	7/22
Butter	$2.91	$3.01	$2.97	$2.93	$2.90
Cheese	$2.09	$2.17	$2.11	$1.99	$1.91

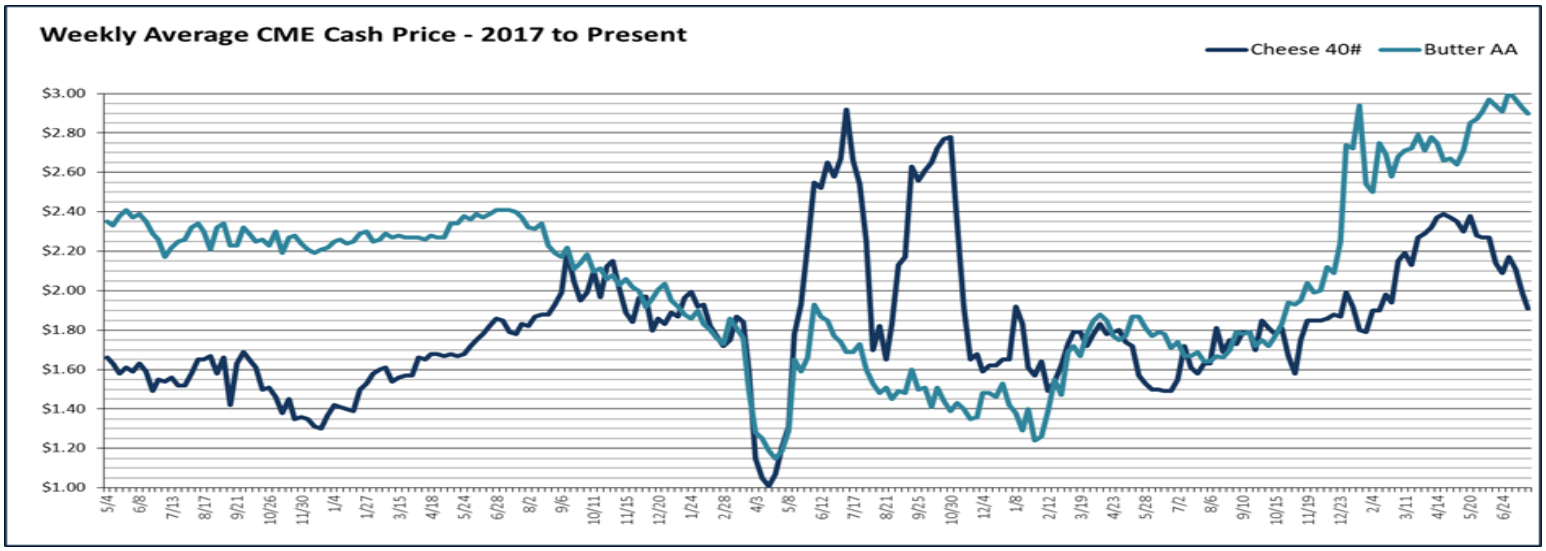
Butter: Cream is available in the Central region, though contacts report inventories are tightening in the Northeast and West. Butter and ice cream makers are keeping demand robust, in the West. Some butter makers in the Northeast are running active schedules, while others are running below capacity due to labor shortages, high cream multiples, and softening domestic demand. Butter inventories are tight in the Northeast. Inflationary pressures are affecting some grocery shoppers in the Northeast and West, who may be reducing their consumption or utilizing some butter alternatives.

Fluid Milk: Milk flows are generally trending level to lower across the country. Summer heat and lack of precipitation in some areas, particularly in Southern states, are imperiling pasture conditions and impacting cow comfort. Cream availability is tightening in all regions, according to stakeholders.

June's Albany $/Gallon paid to the farmer was $2.28. This is, again, a new record high. We will continue to see high milk prices through the rest of the year.

CROPS COWS & CRITTERS newsletter

For more information on Dairy Business Management and Market Analysis, contact Katelyn Walley-Stoll, Farm Business Management Specialist, at 716-640-0522 or kaw249@cornell.edu.



Inflation's Effect on Consumer Purchases and Dairy Farm Expansions

By Katelyn Walley-Stoll, Farm Business Management Specialist with Cornell Cooperative Extension

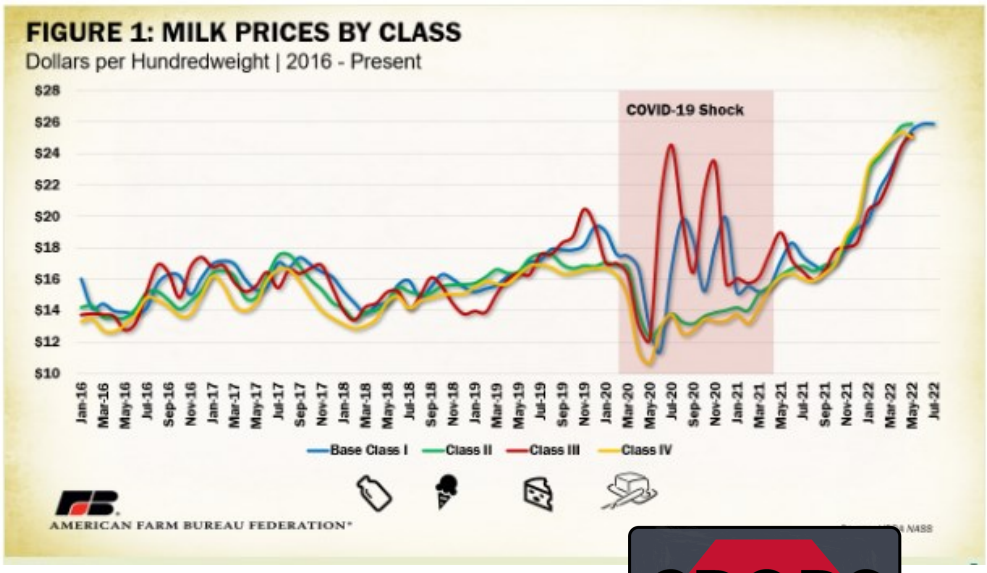
June's Milk Production was up by just 0.3% from 2021.New York saw a decrease of 7,000 head from 2021 to 2022 and a just a 1% increase in milk production per cow. Typically, we see a chain reaction when milk prices are high. Prices go up —> farms add cows —> milk production goes up —> prices go down. However, as we're seeing currently, year over year milk production increases of less than 1-2% can indicate strong or rising milk prices.

Today's continued slow growth is likely caused by continued economic concerns brought on by the pandemic, high input prices, labor shortages, and succession planning concerns. We're also still seeing many milk cooperatives deploy milk production controls like quotas, discounted milk sales, and tiered pricing which penalizes growth and maintains steady milk supplies.

From USDA	**2022**	**2023**
All-Milk Forecast	$26.15 (-5 cents)	$24.15 (+35 cents)
Class III Forecast	$22.80 (-10 cents)	$20.85 (+35 cents)
Class IV Forecast	$24.70 (+5 cents)	$22.30 (+40 cents)

We're starting to see a bigger response to inflation which is driving down dairy products purchases and prices. USDA market contacts report slight changes in consumer buying habits of higher costs products (yogurt, cheese). NMPF reports a decrease in overall domestic dairy product use and very recent retail dairy price hikes. Inflation on actual dairy products is historically uncommon, but rising prices for other consumer goods force buyers to make decisions which lead to decreasing dairy consumption.

USDA raised most of its price outlooks for 2023, citing higher cheese price projections, lower expected milk production, and strong exports.



More Information:

- Livestock, Dairy, and Poultry Outlook: July 2022 from USDA Economic Research Service Situation and Outlook Report.
- Dairy Market Report from National Milk Producers Federation.
- July Milk Production Report from NASS.
- USDA Foreign Agricultural Service: Dairy World Markets and Trade.

Contrary to a slowly declining domestic market, the US continues to be competitive on an international level with strong export prices.

US Dairy exports (by total milk solids production) hit a new record of 19.4% in May. Buttermilk, cheddar cheese, and American-type cheeses saw the biggest gains in export volume from 2021 to 2022.

Managing Your Earnings in 2022. Can We Impact 2023 and Beyond?

By Jason Karszes, Cornell PRO-DAIRY, and Dr. Chris Wolf, Cornell University

So far, 2022 is shaping up as a year where cash and profits may rebound within the dairy industry to levels that have not been seen for a few years. While inflation and supply chain issues are driving costs up on dairy farms, milk prices are strong and appear to have generated stronger cash positions through the first third of the year. With the strong cash positions, questions are starting to be asked about potential strategies to maximize the opportunity associated with the stronger positions this year. How long will the milk price stay strong enough to offset rising input costs? Will a smaller national heifer inventory and milk processing limitations slow the growth of milk production? Will supply chain issues continue to impact both farm production and processing capacity? With the uncertainty towards what earnings might be over the course of the year and into the next, there is the potential for earnings to decrease or turn negative.

Questions to Ask.

With an expectation for the earning levels to decrease at some point, whether driven by the increase of costs or lower milk prices, the key objective during times of strong earnings is to improve the financial health of the business, along with positioning the business to succeed when earnings decrease. To meet this objective, two questions can be asked:

- What can be done over the remainder of this year that will increase profit generation through increased production or lower costs in 2022 and beyond?
- What can be done over the remainder of the year to increase the businesses' ability to meet cash commitment challenges during the next low earnings cycle?

To answer the first question, managers need to know the current state of their business. How is revenue being generated, and how much does it cost to do so? By analyzing your business, you may identify areas in which a few changes could lower your cost to produce milk or maintain the cost to produce milk while producing more hundredweights. Examples of this are changes that affect labor efficiency, feed efficiency, fertilizer use, and culling decisions. Start by analyzing your five largest expense items to determine if you are receiving the greatest return possible from those inputs.

Before making a change, carefully analyze it to determine if it meets your long-term goals. The decision must make sense for next year and beyond, or for when the returns may be significantly lower, not just now when returns may be higher than average. You don't want to make long-term cash commitments based on short-term cash excess or cash generation. Also, you don't want to make this change for tax savings only. If an investment does not make longterm sense for profitability, then the one-year tax savings is likely not enough to justify the investment.

The second question: "What can I do now to maintain my ability to meet cash commitments throughout a low milk price cycle?" deals more strictly with cash flow budgeting and positioning your business. If you are not already projecting future cash needs, you may want to start. While they are not always accurate, budgeting future cash needs for the next twelve months allows you to identify times where you may need to generate additional income or minimize expenses.

With an accurate financial analysis of current performance and thorough monthly cash flow projections in hand, it is easier to determine the best use of cash within the business.

What Should you Do First?

With many different uses of profit, it can be difficult to prioritize. It can be tempting to pay for a capital project with cash, but this might not have the desired impact for improving the ability of the business to manage cash during a down cycle. When focusing on the use of profit within the business, it is important to think about how different investments fit into the business and how they can impact the business. There are two important objectives to keep in mind, the ability to increase the future earning potential of the business and the ability to allow the business to handle the next down cycle more efficiently. Depending on the choices made this year, you may impact one, both, or none of these areas. The following areas can help focus the decision making on where to use profits this year.

Five Uses of Profit/Cash Within the Business

To improve the financial health of the business there are five areas where cash can be invested. These areas are meeting critical needs, improving operations, building reserves, building borrowing capacity, and funding long term investments. Let's consider each use in turn.

While dairies are receiving excellent milk prices this year, history shows that this doesn't last for long. Make plans now to deal with the next down turn.

Knowing what you're currently working with is the first step to financial planning. Connect with Katelyn Walley-Stoll to participate in DFBS.

1. Meeting Critical Needs. Low dairy farm profitability over the last few years have made it difficult for some farms to meet all their cash commitments. In 2021, some dairies may have delayed investments or postponed expenses, thus hindering the farm's ability to efficiently maintain day to day operations or operate at the lowest possible cost. Catching up on delayed investments and unpaid expenses should be the first use of profit. Paying down an open account with a supplier to qualify for cash discounts is one example. Another example is repairing or replacing essential equipment, such as a skid steer, that is not fully operational. If the business is at the limit of its borrowing capacity, repaying operating credit lines could also be a priority so the business can borrow again when a need arises. This also can lead to lower interest costs, resulting in lower operating costs.

2. Improving Operations. A second area to consider is what could be done to improve the current operations by investing additional capital. Most farms have a long list of ideas for ways to increase milk production, improve labor efficiency and effectiveness, or lower costs. With the higher earnings cycle underway, you must determine investment priorities. From analysis of the current operations, where are the opportunities to improve operations? Improving cow flow leaving the milking parlor, updating ventilation systems, upgrading mixer wagons to improve mixing and reduce time spent feeding, providing additional training to boost employee performance, and implementing lean manufacturing concepts are all examples for improving operations. With so many options, the management challenge is to determine which improvements will have the greatest impact on performance.

3. Building Reserves. If the current operations are running smoothly, or the necessary changes are underway, the next use of profit can be to build reserves within the business. By building reserves, the business has something to draw against when the next low earning cycle comes along. Paying for inputs ahead of time, while also impacting taxes, is a primary way to build inventories which can be drawn down when cash flow becomes restricted. Another source of reserves is building cash balances that may be invested off the farm in accounts, such as money markets, that earn higher interest rates than savings and checking accounts but are available for use by the business when needed. This decision doesn't lead to a tax deduction for the current year, so the tax implications need to be considered when building cash reserves.

4. Building Borrowing Capacity. In conjunction with building reserves, accelerating principal payments to build borrowing capacity within the business is an alternative to consider. Making ongoing debt payments is a normal course of operations, but during high earning cycles, the business can choose to accelerate principal payments, therefore accelerating the reduction of principal and decreasing the amount of outstanding principal that requires interest payments. When the next low milk price cycle arrives, there will be less interest being paid due to lower principal, and there is also increased borrowing capacity that can be tapped into to help cash flow or take advantage of different opportunities. Depending on which loans are paid down, or paid off, the monthly cash commitment required to service principal and interest may also be decreased, which improves the ability of the business to meet cash commitments. It is important to remember that making principal payments is not a tax deduction and accelerating principal payments may impact the farm's future tax liability.

When considering whether to build working capital or build borrowing capacity, talk with your lender and review their policies towards lending additional capital to your farm for operating expenses. If you have a good working relationship with your lender, it may make sense to accelerate principal payments when you have excess cash on hand, and borrow more money in the future, if needed. If there are concerns or high costs associated with future borrowing, then it may make more sense to pay only the scheduled principal payments and put extra profits toward building up working capital reserves.

5. Funding Long Term Investments. The last area profits can be used is for long term business investment. These are investments that are necessary for long-term success and to achieve business and family goals. However, this type of investment may have a slow payback. While they may be good long-term investments, they might also add to the cash commitments of the business. Buying land, building a new barn, adding to feed or manure storage, or building a new milking center are all long-term investments with potential to help farm families progress toward their longer-term goals. It is important to have a business plan when opportunities present themselves, so they can be evaluated in terms of how they support the business mission and progress toward its strategic goals.

Continued on the following page...

Thinking about the many things you "grumble" about on your farm ...what repairs or purchases could save you time and money?

CROPS COWS & CRITTERS newsletter

Long term investments can tie up cash in downturn situations, but smart and planned purchases can help improve your business growth potential.

Continued from the previous page...

Conclusions. By thinking about how profits can be used within the business, focusing on different areas and priorities, the manager can better use the earnings from high cycles to both impact the future success of the business, and impact the ability to navigate the next down cycles. When thinking about all uses of profits within the business, the following question needs to be asked: "Are you doing this because you can, or because you should?"

Risk management is an additional area where the farm may commit more resources when cash is available. Depending on the level of risk that the managers are comfortable with, understanding of various risk management tools, and financial risk, additional time and money can be utilized to try and minimize the impact on cash flow if there is a negative change in milk prices or various input prices.

Don't forget the tax implications that this year might build and the impact that some of these decisions will have on the amount of tax owed. Tax planning can be used to minimize the taxes that will be owed in 2023 for the 2022 business year.

Work with your tax accountant and determine what impact different decisions will have on taxes and what your total tax bill will be. With this information, you can better plan your cash needs for next year. Waiting until February or March to determine what your tax bill will be can severely impact your cash flow and disrupt your ability to meet planned cash needs. While planning for taxes can minimize the cash needed to pay the income tax bill, it is important to remember your long-term business goals. Do not necessarily focus on paying no taxes. The only way to not pay any taxes in the long-term is to not make any money, so the focus needs to be on maximizing after-tax revenue, not minimizing taxes paid.

While the focus of these areas is on improving the business, profits can also be used in support of family goals. Taking a much-needed vacation, investing off the farm for retirement or in other family needs, or pursuing something that is of value to the family should be considered also. These types of uses of profit are generally after tax so tax implications need to be considered.

Coming off of what hopefully will be a good year is no time to rest on your laurels. Projections for next year are only projections and a financial crunch may not actually occur. But a good planner prepares for every eventuality to minimize its potential impact. By planning for financial stress, you also increase your business' ability to take advantage of opportunities that arise. ▪

Don't forget about the 2022 Ag Census! This is an important tool to monitor agricultural production and secure support funding opportunities.

While many farms manage their tax liability to always claim a loss, effective tax planning with your farm accountant can help improve profitability.

The 2022 Ag Census will be an important tool for national decisions regarding agricultural program funding and productivity analysis.

It Might Not be That Chill, Even for Your Non-Lactating Cows

By Camila Lage, Dairy Management Specialist

The recent heat wave across the country got me thinking about the intensity of heat stress Northeast dairy cows face during summer. Being from Brazil and spending my last summer in Central Valley, California (HOT!), I would think that NY summers wouldn't be so bad on cows, but that's not true. There's a cost-benefit of investing in heat abatement, even in our "moderate climate" area.

Like us, cows have a temperature and humidity 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 Figure 1 below, you can see the THI, or Temperature-Humidit Index is 72 in both of those examples. As I write this article, the temperature outside is 81 F, and the humidity is 65%, which gives us a THI of 76. Research shows that cows start experiencing heat stress when THI is around 68. So, a day with temperatures in the low 70's, and humidity of 65% or greater, will cause cows to drop in production and experience discomfort.Data from St-Pierre et al. (2003) estimated that cows in NY would undergo heat stress in at least 8.2% of the year. Even this small amount translates into economic losses of $23.193 million per year because of reduced intake and lying time, fertility, or loss of pregnancy and increased health issues (including lameness).

A study by Miner Institute in 2016, conducted in Northwest NY, found that cows producing more than 77 lbs per day lose at least 5 lbs milk/day when the average THI was 68 or higher for more than 17 hours a day. They also demonstrated that this loss was lower when aggressive heat abatement (meaning fans and sprinklers over stalls and feed alley) was used. As the global temperature rises, cows will spend longer periods under heat stress, making implementing intensive cooling strategies critical. It's not just about lactating cows. A series of studies by the University of Florida demonstrated that when dry cows are heat stressed, their welfare and productivity declines, as well as the survival rates, lifespan, and performance of their daughters and granddaughters! The team calculated that these impairments would cost $595 million annually to dairy producers in the United States. In NY, which has an average of 52 heat-stressing days, it would still cost $30.81 million annually. Considering the costs of investing in heat reduction and the losses due to heat stress for dry cows and subsequent generations, Ferreira et al. (2016) concluded that investing in heat abatement for dry cows would still be a cost-effective strategy. Heat abatement strategies are becoming increasingly important for all animal categories (let's not forget about calf and heifers).

As temperature and humidity rises, let's not forget about the basic principles to help animals stay cool and comfortable:

- Make sure animals have access to fresh water.
- Provide shade
- Make sure you have enough ventilation (pens and holding pens).
- Don't forget to clean fans for better performance.
- Consider adopting water cooling (sprinklers/misters) for more effective cooling.

If you are interested in this topic and want to learn more, you can access our webinar on heat stress presented by Alycia Drwencke and Margaret Quaassdorff by scanning the QR code below. ▪

Air Temperature (°F)	Relative Humidity (%)																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
65	61	61	62	62	62	62	62	62	63	63	63	63	63	64	64	64	64	64	65	65	65
70	63	64	64	64	65	65	65	66	66	66	67	67	67	68	68	68	69	69	69	70	70
75	66	66	67	67	68	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75	75
80	68	69	69	70	70	71	72	72	73	73	74	74	75	76	76	77	78	78	79	79	80
85	70	71	72	72	73	74	75	75	76	77	78	78	79	80	81	81	82	83	84	84	85
90	72	73	74	75	76	77	78	79	79	80	81	82	83	84	85	86	86	87	88	89	90
95	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
100	77	78	79	80	82	83	84	85	86	87	88	90	91	92	93	94	95	97	98	99	100
105	79	80	82	83	84	86	87	88	89	91	92	93	95	96	97	99	100	101	102	104	105
110	81	83	84	86	87	89	90	91	93	94	96	97	99	100	101	103	104	106	107	109	110

Source: https://dairy.extension.wisc.edu/articles/animal-handling-during-heat-stress/

Cows producing more than 77 lbs per day loose at least 5 lbs milk/day when the average THI was 68 or higher for more than 17 hours a day

CROPS COWS & CRITTERS newsletter

If you are interested in this topic and want to learn more or need help troubleshooting heat stress in your facilities contact Camila Lage at 607-422-6788.

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