Cornell Cooperative Extension | Northwest NY Dairy, Livestock and Field Crops Program

AG FOCUS

June Dairy Month: Celebration and Opportunity

by Margaret Quaassdorff

June Dairy Month is a time to celebrate the dairy community, recognize our nation's hardworking dairy farm families, and enjoy the wholesome, nutritious milk and delicious dairy foods they produce. It is also a time to recognize the excellent care dairy farms give to their animals, and the environmental stewardship they practice year round to maintain a healthy productive farm, and food for communities for generations to come.

This year June Dairy Month seems extra special since milk has found its way back into the hearts and homes of the American people. For all the ups and downs we have had, we can truly celebrate all that is June Dairy Month with a new opportunity. People (consumers) are seeking out their local farmers and farm products. They want to know us, and support us. Our chance to show our best is now. Processors and cooperatives of all sizes are working with volunteers, community members, and government to get bountiful dairy products into the hands of those in need. Small processors are stepping up in local communities, and some dairy farms are considering the opportunity to diversify and vertically integrate their own businesses to connect directly with consumers. Cornell Cooperative Extension has resources and knowledgeable specialists to help dairies look into new opportunities. Reach out for details.

Though there is great opportunity, there is also hardship and complex challenges surrounding the current dairy industry. In these times, I find myself remembering an excerpt of words I wrote, for an article in the October 2013 issue of the William H. Miner Agricultural Research Institute *Farm Report*, titled, "It Takes A Village". I was beginning my career in the industry, and was a dairy management intern at the time. The lessons learned there still apply, and are a good reminder for all of us in the dairy industry today.

Lessons learned from life on the farm:

- *Manure happens. Machinery breaks down, fields flood, cows get sick, the barn cleaner backs up. You have to keep going, and not give up.*
- *Ruminate often. A cow spends 7-10hrs/day ruminating (Grant and Albright, 2000). Problems arise in any task, but if you take time to think about the solution (ruminate on the issue), you can push past any obstacle in your way.*
- *Life balance. Working on the farm has helped me become comfortable with the fact that there is a time for everything: A time to plow, plant, and harvest. A time for calves to be born, heifers to grow, and a time for cows to be culled. A time to work, a time to think, and a time to relax. All of these things are necessary for the health and well-being of the farm and its workers.*

Dairy farmers and dairy foods are (and have been) there when we need them, and when we want them. We owe the dairy farmers and all involved in getting dairy products in the hands of families and communities, our highest appreciation. This June Dairy Month, let's all raise an ice cold glass of milk to good health, farm families, cows, and communities. Cheers, and stay healthy!

Milk and Cookies. *Photo: B. Waite / CCE NWNY Team*

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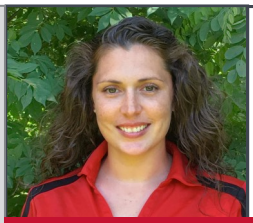

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For more information about our program, visit us at:
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Upcoming Webinars

June 4, 2020 - Noon (EDT)
USDA COVID-19 Relief Programs and Impacts to the US Food System
Please join Farm Credit East and American Farm Bureau Federation Chief Economist, John Newton
www.FarmCreditEast.com/webinars

June 8, 2020 - Noon (CST)
Milk: What can lactation teach us about diet and health?
Bruce German, University of California-Davis
https://hoards.com/flex-309-Webinars.html

June 11, 2020 - Noon (EDT)
Feed & Grain Markets and Dairy Outlook
Featuring Ken Zuckerberg of CoBank and Dr. Chris Wolf of Cornell University
www.FarmCreditEast.com/webinars

June 18, 2020 - Noon (EDT)
U.S. & Northeast Animal Protein Market Outlook
Featuring Will Sawyer of CoBank and Dr. Michael Baker of Cornell University
www.FarmCreditEast.com/webinars

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Navigating Farm Management Changes with Employees

by Libby Eiholzer

We knew we were in for some changes in 2020 with the passing of the Farmworker Fair Labor Practices Act. For most farms in our region, paying overtime after 60 hours was a huge change that required careful consideration and planning. Many farms began looking at the potential impacts on their operations over the summer and fall of 2019. Some farms began making immediate changes to their employee scheduling and pay, while others waited until January 2020.

What none of us could have predicted in 2020 were the far-reaching effects of the Coronavirus pandemic. Financial and management plans made while expecting a much higher milk price in 2020 are now being re-evaluated. As I've talked with farmers and employees undergoing significant management changes over the past year, I've noticed some key strategies that lead to smooth transitions. If you're considering a management change on your farm, no matter how minor, consider the following before implementation.

1. **Do your homework** before making any changes. Think through it thoroughly from your employees' perspective. How might a change in schedule affect their personal lives? How will it affect them financially? Try to anticipate their questions so that you can answer them readily. Run your ideas by a key employee, other farmers, or a consultant; getting another perspective will help you consider multiple options. And by all means, make sure that what you tell your employees is in fact true! Don't assure your employees that their pay won't decrease unless you're sure that it won't.

2. **Communicate early and often.** Few things are worse from an employee's perspective than getting last minute news about something that will affect them significantly. If you are considering a change, let them know ahead of time so they're not caught unawares. Open communication goes a long ways towards building trust.

3. **Be open and honest.** When farmers make changes to employee pay and scheduling, they usually aren't doing so to be cheap and make as much money as possible. Rather they make these decisions in an effort to provide a good living for their employees while also making sound businesses decisions that will lead to long-term success for the farm business. Right now, most farms are making changes in order to comply with changing state regulations and to withstand a challenging economic environment. Help your employees understand why you're making the changes, and they're more likely to support them.

4. **Include your employees in the decision making process when possible.** After brainstorming possible solutions, run them by your employees to see what they think. They might come up with an even better solution that you hadn't considered, and they are more likely to take ownership of the solution if they feel that they have been able to weigh in. Alternatively, providing them with a solution that they probably won't like first could make them more receptive to the solution that you want to end up implementing!

With stress levels high and demands in every direction, a farm manager's first instinct can sometimes be to just make a decision and stick with it. Yet when people are involved, it's often better to take the time to do your homework, seek input and communicate openly in order to see your team through to the other side.

Performance of NYS Dairy Farm Businesses in 2019 - Preliminary Results by John Hanchar and Joan Sinclair Petzen

At this point, consider these results preliminary – we expect the sample size to increase over the next month prior to final reporting of results.

Summary

- While milk sold per cow rose 2 percent to 26,336 pounds for 2019, milk receipts net of milk marketing expenses per hundredweight (cwt.) rose 13 percent to $18.19 in 2019.
- In 2019, the total cost of producing a cwt. of milk was $19.15, an increase of $0.18 per cwt. relative to 2018.
- As of April 3, 2020, results suggest that the same 131 New York dairy farms in Cornell University Cooperative Extension's Dairy Farm Business Summary (DFBS) Program achieved higher levels of profit in 2019 compared to 2018 -- for example, for 2019, the rate of return on all assets without appreciation averaged 5.4 percent compared to 1 percent in 2018.

Introduction

On April 3, 2020, Jason Karszes, Lauren Hill and Wayne Knoblauch at Cornell University compiled and released early, state level 2019 DFBS results. The results reported here represent averages for the same 131 New York dairy farms cooperating in 2018 and 2019.

Size of Business and Rates of Production

- Average number of cows per farm rose from 987 in 2018 to 1,041 in 2019.
- Milk sold per farm increased from 25,538,467 pounds in 2018 to 27,412,492 in 2019.
- Milk sold per cow averaged 26,336 pounds in 2019 compared to 25,866 in 2018.
- Worker equivalents per farm averaged 20.8 in 2019 compared to 20.3 in 2018.
- Hay dry matter per acre was unchanged at 3.2 tons, while corn silage per acre declined 2 percent to 18.5 tons per acre in 2019.

Income Generation

- Milk receipts net of milk marketing expenses per hundredweight (cwt.) increased from $16.04 to $18.19.
- Milk receipts net of milk marketing expenses per cow rose from $4,148 in 2018 to $4,789 in 2019, an increase of 15.5 percent.

Cost Control

- Dairy feed and crop expense per cwt. of milk fell from $7.16 in 2018 to $6.99 in 2019, a decrease of 2 percent.
- In 2019, total cost of producing a cwt. of milk averaged $19.15, an increase of 1 percent relative to 2018.

Profitability

- Net farm income without appreciation per cwt. of milk averaged $2.32 in 2019, an increase of about 400 percent compared to 2018.
- Rate of return on equity capital without appreciation rose from negative 1 percent in 2018 to 5.7 percent in 2019.
- In 2019, the rate of return on all assets without appreciation was 5.4 percent, an increase of 440 percent relative to 2018.

Final Thoughts

Owners of dairy farm businesses cooperate in Cornell University Cooperative Extension's DFBS Program for the

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Performance of NYS Dairy Farm Businesses in 2019 - Preliminary Results

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purpose of identifying strengths and weaknesses by comparing their results to results of other cooperators. Are you interested in realizing the benefits of DFBS participation? Call or message us – for contact information, please see information at the front of this newsletter.

Articles in recent issues of Ag Focus reviewed the topic of farm business summary and analysis. If you are interested in improving your farm business' ability to practice sound financial management, then please contact us to learn more about some of the tools available and their value and/or to discuss plans for completing a farm business summary and analysis for 2019. Owners of all types of farm businesses are encouraged to contact us. The NWNY team has the capacity and desire to work with a variety of farm businesses -- dairy (small, medium, and large; conventional; organic; grazing; and others), field crop, livestock, and others.

Lastly, once again, this time due to a health pandemic, an unfavorable economic environment challenges farm business owners' financial management abilities and practices. To successfully meet the challenges, farm financial management practices play a prominent role – farm business summary and analysis, budgeting, projections. Financial summary & analysis with emphasis on budgeting are keys to answering

- Where is the business now financially?
- Where do you want it to be?
- How will you get the business to where you want it be financially?

To learn more about tools and resources, including budgeting assistance, please contact John Hanchar or Joan Petzen.

Ask Extension: How Do I Deal with Pasture Compaction?

by Nancy Glazier

I was recently asked this question. After last year's wet season and this spring's wet weather at the start of the grazing season, livestock pugging occurred. Standing water also contributes to compaction. Compaction can lead to yield loss due to root growth restriction and water infiltration, and erosion. When pore space is diminished, water holding capacity declines, along with the biota, large and small. Pastures will become droughty quicker than usual.

A simple test to determine if soil compaction in your pastures is evident is to take a fiberglass post and push it in the pasture soil and along the fence line to compare the resistance. If there is a noticeable difference, then your soils are probably compacted. Usually the top 3-4 inches are impacted from hoof traffic.

Soil health is what the issue really should be about and takes into account the chemical, biological and physical properties. Healthy soils will recover more quickly from disturbances with a decline in any of these impacting soils and limiting productivity. Many studies have shown compaction from pugging can occur in one event on wet pastures with recovery taking weeks. Prevention is the ideal scenario, but not always practical. What can be done to mitigate the problem? Here are a few suggestions.

- Tillage is not the first choice as a remedy for compaction - especially for clay soils - because it is temporary remediation. This aerates the soil and increases organic matter decomposition. Aeration of pastures is a temporary fix, too. The goal is to increase organic matter.
- Graze plants at a taller height when wet. The higher amounts of forage provide a bit of a cushion.
- If at all possible, keep livestock off wet pastures. Try to graze dryer pastures.
- Remember, graze half, leave half. If more than half of the leaf volume is removed, root growth is significantly impacted.
- Make hay, if you have the option. Taller growth allows for roots to grow through compaction. There will need to be longer rest if this takes place.
- There are times when renovation is needed. Add sod-forming grasses to the mix, such as Kentucky bluegrass, perennial ryegrass, or smooth bromegrass. This provides more of a mat to protect the ground.
- Use caution with winter bale grazing. Roll out hay so livestock don't stand in the same place for an extended period. Or, set out bales and limit access with fencing.
- Move water troughs and mineral feeders to new areas in the pastures.
- Tile wet areas of pastures to improve drainage.

I'm helping Fay Benson, CCE Cortland County, with a project to measure compaction and develop a Pasture Compaction Ratio (PCR) that is independent of soil moisture level. Penetrometer readings will be collected along the fence lines and 10-20 feet within pastures. The ratio of these readings should stay the same throughout the year, regardless of soil moisture. The goal is to hold some pasture walks this summer to learn more about it. It is unknown whether we will be able to hold any events, but if you have an interest in learning more, give me a call or email. Contact information is inside the front cover.

A clump of soil from a healthy pasture. Notice aggregates and root growth. *Photo: N. Glazier / CCE NWNY Team*

June's Most Unwanted Field Crop Pests! by Mike Stanyard

Black Cutworm (BCW)

This moth usually is the first uninvited guest of the season. Pheromone traps began catching moths in early April and they continued to arrive on storm fronts into May. There were plenty of cover crops and grassy areas to lay eggs so be on the watch in late May/early June for BCW larvae activity in corn fields.

Walk the rows looking for cut, wilting, or missing plants. If you find an injured plant, dig in the soil around the base. BCW are nocturnal and will hide under the soil during the day. If 5% or more of the plants in the cornfield are cut or injured, an insecticide spray is warranted. You can view our video on how to scout for BCW at: https://vimeo.com/130331770.

Common Armyworm (CAW)

Like BCW, there were some early flights of CAW caught up in the NW counties of our region in early April. Armyworm infestations can be found each year in barley, rye and wheat. They also can cause problems in grass fields, pastures, mixed grass/alfalfa seedlings and corn. Remember to look for the blackbirds to help you find where the CAW are feeding in small grains.

With the increase in the use of cover crops, we have the potential to see more larvae injury in corn. CAW larvae feed from the outside edge of the leaf towards the midrib. Leaves look very ragged. Larvae feed at night and hide in the corn whorls during the day. Penn State recommends "Control efforts are usually not economical unless ten percent or more of the plants are infested." See their fact sheet for more detail, http://ento.psu.edu/extension/factsheets/armyworm.

Alfalfa Weevil

The adult weevils do overwinter here in NY and are usually a potential problem in first cut alfalfa. Jodi was able to find lots of weevils in alfalfa on May 6. Do not forget about second cut regrowth. If we have lots of small larvae emerged at first cutting, they can eat regrowth as fast as it emerges. If 50% of regrowth shows feeding injury, spraying is justified. Here is another team video to learn how to assess and scout for weevil larvae injury, https://vimeo.com/129583196.

Potato Leafhopper (PLH)

Since PLH fly in each year from the south it is hard to predict their arrival. There are no pheromone traps to monitor them. I have seen leafhoppers as early as May 6th and as late as June 7th. Second cut regrowth and new seedings are the most vulnerable. PLH feed by piercing and sucking the plant sap from the plant. The resulting hopper burn (yellow leaves) and stunting means that we missed our opportunity for timely management.

PLH management is based on plant height and leafhoppers per sweep. Cornell recommends taking five sets of sweeps with a sweep net (10 sweeps per set) per field and calculating a PLH (adults & nymphs, see picture) per sweep for each set.

Plant Height	PLH per Sweep
< 3 in.	0.2
3 to 7 in.	0.5
8 to 10 in.	1.0
11 to 14 in.	2.0
15+ in.	> 2.0

Soybean Aphids

We are still not sure what soybean aphids are going to do yet. The winter was cold but probably not cold enough to kill the overwintering eggs on buckthorn. In most years I observe the first winged females flying to soybeans during the first week of June. A high percentage of our soybeans are being treated with a systemic insecticide seed treatment which will reduce the success of this initial flight. This seed treatment will not be effective against later summer flights. Always look at the newest growth for the first colonies. Hopefully, natural enemies like lady beetles can take over and keep aphid populations in check. If not, foliar insecticide applications are very effective. The unpredictability of this insect makes scouting your beans even more important! Remember: treatment threshold is 250 aphids per plant. Here is another video on how to scout for early soybean aphids: https://vimeo.com/131208222.

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Evaluating Corn and Soybean Populations by Jodi Putman

A chilly weather pattern for May set some cold temperature records in the Northeast. May temperatures were mildly warm within the range of 53.6º F and 69.8º F. The late-season cold air might have harmed any sensitive spring vegetation and plant emergence where a frost or freeze occurred. Corn and soybean plants that are viable would have emerged by now. As we wait for some fields to dry out enough to continue planting, now is the time to go out and assess your current stands.

Corn Stand Assessment

Fields typically have some stand variability between well-drained areas and the poorly drained areas. For corn planted on 30" rows measure 17 feet 5 inches, which represents 1/1000 of an acre. Count the plants in that distance. The number you get multiply by 1,000 to get your plants per acre. For example you count 25 plants x 1,000 = 25,000 plants per acre. Do this in multiple areas of the field to determine your average for the field. Knowing the planting times as it relates to yield potential is key when deciding whether to replant. If replant is necessary, it would be better to plant a shorter season hybrid to aid in a more uniform field dry down.

Soybean Stand Assessment

The soybean plant has the ability to branch and fill in, however, there are limits to the lowest population establishment without losing high yields. The other thing to consider is that the yield penalty isn't as severe for planting soybeans in late May and early June as compared to corn. However, don't be too quick to replant a field with reduced emergence.

Alright, so how do you assess soybean stands? Soybeans are more difficult than corn since there are multiple row width options. For 30" rows it's just like the example above. Soybeans planted on 15" rows, you double that distance and measure off 34 feet 10 inches and count the plants. Again, the number of plants x 1,000 = plant population per acre. You'll want to take multiple counts of adjacent rows in different areas of the field to get an overall stand for the field. For drilled soybeans, you can use a hula-hoop method by randomly tossing the hoop and counting the plants inside the circle. Convert the plants per hoop to plants per acre by multiplying the number of plants by the appropriate factor. A 28 inch hoop is the easiest to calculate since the multiplication factor is 10,000, so 13 plants in the circle x 10,000=130,000 plants per acre.

This article draws heavily from PSU Extension. For more information visit: https://extension.psu.edu/assessing-corn-and-soybean-populations-and-replanting-decisions

Assessing soybeans with the hula-hoop method.
Photo: Purdue Extension Entomology YouTube Channel

June's Most Unwanted Field Crop Pests!

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Slugs

There are three species found in our soybeans but the most common is the gray garden slug. This species overwinters in the egg stage and hatches in the spring right when young seedlings are emerging. The young slugs feed on the leaf tissue. They hide where it is moist and cool during the day and will come out in the evening to feed. Their slime trails are a sure sign that they are present. Even a little bit of tillage seems to be enough to disturb their feeding. Many farms are running over their fields lightly with one of the vertical tillage implements and getting good results. Pelletized slug baits containing metaldehyde (Deadline® M-P™) can be very effective at reducing slug populations quickly but they do not last very long in the field, are pricey, and difficult to apply.

Perseverance, Gratitude and Contingency Plans Help Business Leaders Navigate Forward by Joan Sinclair Petzen

As our society begins to move about, more businesses reopen and travel becomes acceptable, farm business leaders will continue to evaluate the risks to their business and adjust risk mitigation practices as the situation in their surrounding community changes. Going forward be vigilant in modeling and reminding staff of the safety procedures in place for your farm. Practicing grateful leadership will to help build confidence among your employees and recognize how you value the actions each one taken to help protect the safety of employees, their families and customers. Lastly, the situation we are presently living through reminds us of how critical it can be to have an emergency plan in place and have contingency plans for leadership should something unexpected happen to prevent key leaders within the business from making decisions and guiding others on your team.

Pause NY, implemented in March, disrupted everyone's personal and work life for ten weeks or more so far. As essential businesses, farms have "marched on", implemented safety measures and continued to press through a cool, wet spring season. Most everyone feels like they have had enough of the inconveniences, isolation and frustrations of the COVID-19 world in which we live today. Right now as a business leader, continue to model precautionary safety measures. Be vigilant about the people engaged with your farm practicing sanitation. Wearing cloth face coverings and social distancing going forward is important to managing the risk of a resurgence of the virus impacting your farm adversely. Richard Stup at the Cornell Agricultural Workforce Development Program eloquently relates the fight against COVID-19 to a war in his recent blog post.

Grateful leaders are more effective. Being mindful of what you are grateful for on a regular basis helps leaders to communicate that gratitude to the people they lead. When opportunities present themselves, a leader with a grateful attitude is more likely to see the abundance that can come with acting upon the possibility. Being grateful fuels generosity. Think about giving a gift to someone who expresses genuine gratitude. You as the giver feel good and are more likely to give to that person or cause again. Conversely, if someone shows no real gratitude when they receive something from you, you are less motivated to give again. Teams gravitate toward gratitude. People are motivated to give their all when they feel appreciated. Gratitude neutralizes anger and jealousy. Showing each member of your team that you are grateful for their contributions to the organization helps them to feel valued and therefore less likely to be angry or jealous. Mary Kelly with PositiveLeaders.com recently shared "The 5 Minute Gratitude Plan". Use the plan daily as a framework for gathering things for which you are grateful. Take a few minutes at the end of each day and either physically or mentally take a walk around your farm business and capture the things your farm team has done or accomplished for which you are grateful. Employ this list as a reminder to thank individuals for specific things, little things, they have done to help your business remain strong. This will build a committed and generous attitude among your team.

Business leaders must plan for situations where a decision maker or middle manager is unavailable to work in the business for an extended period. The goal of contingency planning is to reduce business disruptions when something adverse happens. Is your business prepared should someone test positive for COVID-19 and is required to quarantine or is unavailable to participate in the business for a period of weeks? What will happen if a COVID-19 positive person lives in housing with other employees? How many people will be required to quarantine? What role does the person have in the business? How unavailable will that person be - completely out of commission or available only by phone? It is important to have a plan in place for how to replace the skills, decision-making and leadership provided by each position/individual in the business before a crisis arises. We all think more clearly and are able to make better decisions when we are not in crisis.

What tasks or management decisions are critical? If a number of people are affected, a triage plan may need to be implemented to address only critical tasks. Which tasks are the most critical? Are there tasks that can be delayed during a workforce shortage? All of these questions and more were addressed in a recent webinar developed by the Cornell Agricultural Workforce Development Program and Pro-DAIRY. A recording of the one-hour webinar is available at: https://vod.video.cornell.edu/home.

Agricultural business leaders, keep your focus on maintaining a safe and healthy work environment. Model the behavior you expect from your family and employees. Show your gratitude for all the little extra things people in your business are doing to help each other adjust to the new situation we find ourselves in during the pandemic. Be specific, tell individual people you noticed. Continue working on and communicating contingency plans that will propel the business forward should disaster, injury or illness disrupt daily activities or leadership. Preparation and planning help businesses weather "storms" caused by unpredictable external forces.

Summer Heat Abatement by Timothy X. Terry, Farm Strategic Planning Specialist

The following is a re-issue of an article I wrote in 2015. Based on the phone calls and emails I have been receiving the subject bears revisiting.

As I begin writing this in early April I am looking out my office window as yet another coating of the white stuff is falling and at such a rate that I can barely see beyond the parking lot. Will it ever end!? So it seems kind of strange to be talking about heat abatement strategies when for the last six months we've seen crippling snowstorms (a Snow-vember to remember), weeks of immobilizing, single-digit (or less) temperatures, and keeping the barn thawed and driveway plowed was the order of the day – all day.

However, the sun will climb higher in the sky, the temperatures will rise, the snow will melt, and our flocks and herds will be experiencing some heat stress. The symptoms of heat stress usually show up as increased respiratory rate, body temperature, reduced feed intake, as well as reduced productive and reproductive performance. Moreover, the effects of the excessive heat usually come back to haunt us as an increased incidence of lameness about two months after the fact due to extended standing times and rumen acidosis from slug feeding.

Praemonitus praemunitus

Which is Latin for "Forewarned is forearmed." We know it's going to get hot (unless it's the summer of 1816 all over again). We know that dairy cows are going to be crowded into holding areas or close-quartered stall barns at milking time. We know a lactating dairy cow will produce upwards of 4,500 BTU's/ hour, so now is the time to begin planning and implementing a strategy to combat heat stress.

1. Maintain What's Existing – Turn off the proper circuits at the breaker box then go over every fan blade, motor, and thermostat. Built-up dirt and dust should be removed from the blades and motors with a stiff bristle brush. This will improve efficiency and prolong motor life. On the name plate on the motor under the heading "Enclosure" you will likely see "TEFC". This stands for "**T**otally **E**nclosed, **F**an **C**ooled", and means that the motor enclosure (housing) is sealed against the elements and is cooled by the air passing over (vs. through) the motor. If the motor is encrusted with dust, dirt, cattle hair, etc. it can't be cooled by the air passing over it and may lead to premature failure of the bearings, bushings, and /or brushes. Motor and fan mounts should be tightened at this time, too.

Motor plate showing **T**otally **E**nclosed, **F**an **C**ooled.
Photo: T. Terry / PRO-DAIRY

Check each drive belt for the proper tension and replace any that are worn or show signs of flat spots or fraying. Look over each pulley and drive shaft -- tighten all set screws, lubricate all bearings, if applicable. If there is an idler pulley involved, make sure it is adjusted and functioning, properly.

Thermostats, especially the sensor coils, need to be clean. Like the motor, if it, too, is encrusted it won't be as responsive to temperature changes resulting in excessive heat build-up in the facility before the fans engage. An old toothbrush is great for this. It can get into tight places and loosen any build-up. You may wish to remove the cover and blow out any cobwebs inside. The cans of compressed air you buy for electronics work well here.

2. Clean the Inlets – You can't ventilate a Coke bottle. In order for there to be an exchange of air there must be a way for fresh air to get in and stale air to get out. If one or the other is missing or compromised the exchange won't happen. Freestalls usually have large curtain sidewalls, open ends, and an open ridge so ventilation can happen naturally – warm air rises; cooler, fresher air replaces it. In tunnel ventilated systems, or stall barns using exhaust fans, the inlets need to be clean and properly sized. I was in an 80-cow tiestall in central NY many years ago in response to a call of a "foggy barn". When I tried to enter the main barn from the milkhouse it was all I could do to open the door. Once inside I noticed four large Vent-O-Matic® fans running full bore on the opposite wall. Further investigation found all windows closed and, what few inlets I could find,

(Continued on page 14)

Summer Heat Abatement

(Continued from page 13)

were undersized and plugged with chaff. Opening the windows and cutting some strategically placed inlets solved the problem.

Similarly, with tube ventilation make sure the fans are up to snuff (see Item #1) and that the tubes are in good shape. If the tube is torn or pinched the fresh air coming out of the holes will not achieve the designed velocity and the air will not properly mix or exhaust.

3. Placement – Ideally, exhaust fans should be placed on the leeward side (away from prevailing wind) of the building – work with nature instead of against it. Circulation fans should be placed over feed alleys and stall sections every 20'-24' and at a height that it won't be hit by cattle or equipment – usually about 8' to the bottom of the fan. This may not be possible in stall barns so fans should be enclosed by a grille. These fans should be tilted down about 15° from the vertical. You won't need a protractor for this. Just aim the fan at the floor or stall bed directly below the next fan. (See Fig. 1)

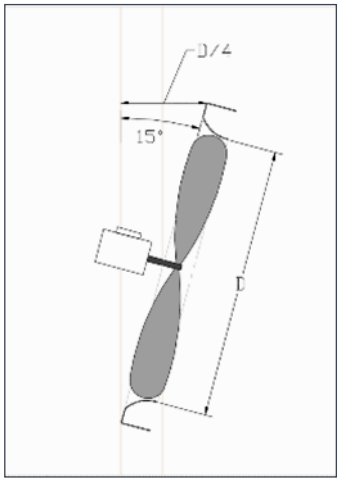

Fig. 1

In the holding area maintain the same height as the circulation fans, but tilt the fans down 30° instead of just 15°. Because of the close quarters, however, you will need to provide a minimum of 1,000 cfm of fan capacity per cow (roughly equal to one 36" fan for every 10 cows).

4. Just Add Water - If you already have sprinklers or misters the nozzles may require service as well. The hard water frequently found in NYS will leave hard mineral deposits on the nozzles that may eventually plug it or at least prevent it from properly atomizing the water droplets. Just like on the crop sprayer, remove the nozzles and open the supply valve to flush the system. (Just don't get feed or stall beds wet). A dilute acid solution will help remove deposits from the nozzles. Since the nozzles are more than likely to be made of brass a full strength acid bath may cause pitting and/or change the size and shape of the orifice. You may use standard dairy acid diluted to 25% or less (3 parts water: 1 part acid) White vinegar straight from the bottle is usually mild enough, but always use gloves and protective eyewear when handling any of these compounds. A bronze or stainless steel detail brush from the local auto parts store can help remove even the most stubborn deposits. Rinse well and re-install. Don't forget to check the timer, pressure regulator, and line filter (if applicable). In the holding area the soaker nozzles should be providing 1 gal. per 150 ft^2 per 1 minute cycle – equal to a 25 gal./hour rating. A typical on:off cycle is 1:5 or 2:10. However, this can be varied as the temperature rises and falls.

75 - 82° F once every 15 minutes (1:15)
83 - 87° F once every 10 minutes (1:10)
>87° F once every 5 minutes (1:5)

5. Water, Water Everywhere – And while we're on the subject make sure clean water is available EVERYWHERE – in the barn, out in the pasture, and near the return alley, if possible. If you're using a water jacket or plate pre-cooler direct the outflowing water to a tank or trough near the parlor exit (careful not to compromise cow flow). Cows exiting the parlor may have been away from water for 30-60 minutes and they will really tank up on the stuff that has had the chill taken off of it. Moreover, this slightly warmer water doesn't seem to have quite the chilling effect on the rumen bugs as water straight out of the plumbing system. Lastly, if the tanks in the barn or out on pasture look more like a failed science experiment than the elixir of life it's probably time to dump / drain them and scrub them out with a little detergent and plenty of elbow grease.

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2008 MACK GU813; Mack 485 HP; 18-Spd. Manual; Clean Tanker Truck w/4,400 Gal. Steel Tank and Pump; 236" WB, 20K F/A, 46K Locking Rears on Air Ride; Will Separate Tank from the Chassis. 21' Frame behind Cab; 170" CT; 337,914 Miles; Stk # 5838 - $49,900

2004 MACK GRANITE CU713; Mack 460 HP; 18-Spd. Manual; Double Frame Crane Truck w/Weldco WHL23CT75 23-Ton/75' Crane; Cranesmart LMI System; 20k Front Axle; 46K Full Locking Rears; 300" WB; 22'6" Frame Behind Cab; 212" CT; 165,000 Miles; Stk. #5628 - $54,900

1997 FORD L9000; Double Framed 6x6 Flatbed/Knuckleboom Truck; 330 HP Cummins M11; 18-Spd. Manual; w/Fasse F270 Knuckleboom Crane; 18,740# F/A; 46K Rears; 13,200# Rear Mounted Lift Axle; 23'6" x 102" Flatbed; 248" WB; Will Separate Bed & Crane from Chassis; 29' Frame Behind cab; 208" CT; 111,244 Miles; Stk. #6157 - $26,900

2006 KENWORTH T800; Flatbed Winch Truck w/Braden 30-Ton Winch; 550 HP CAT C15; 18-Spd. Manual; 16K F/A; 46K Full Locking Rears; 284" WB; 18'6" Deck; Air Ride Susp.; Flip Over 5th Wheel; Will Separate Deck & Winch from Chassis; 21' Frame; 208" CT; 4.30 Ratio; 295,224 Miles; Stk. #6148 - $45,900

2004 PETERBILT 320; CAT 330 HP; Allison Auto.; Refuse Truck w/180" WB, 18K F/A, 44K Rears; Can Separate Compactor From Chassis; 17' Frame Behind Cab; 148" CT; 14,873 Engine Hours; 69,512 Miles; Stk. #6209 - $37,500

2004 WESTERN STAR 6900 XD; Detroit Diesel 430 HP; Allison Auto. Trans. w/PTO Pump & Tank; Triple Frame Cab & Chassis; 20K F/A; 50K Full Locking Rears; Air Ride Suspension; 26' Frame Behind Cab; 168" CT; 256" WB; 8,530 Miles!; Stk. #6245 - $54,900

2007 PETERBILT 357; 475 HP CAT C15; 18-Spd Manual; Clean Daycab w/Tulsa Winch; 20K F/A; 46K Full Locking Rears; Chalmers Susp.; 224" WB; 496,503 Miles; Stk. #6241 - $39,900

2003 KENWORTH T800; 475 HP CAT C15 6NZ Turbo; 8LL Manual Trans.; Clean Daycab w/12,800# Front Axle; 46K Rears On KW 8-Bag Air Ride; 4.11 Ratio; 186" WB; Wetline; 447,898 Miles; Stk. #5925 - $49,900

2010 PETERBILT 365; 350 HP Cummins ISM Engine; Allison Auto.; Long, Double Frame Cab & Chassis w/300" WB, 227" CT; 31' Frame Behind Cab; 18,000# F/A; 60,000# R/A On Hendrickson Susp.; 87,267 Miles; Stk. #5907 - $59,900

1999 MACK RD688S DUMP TRUCK; 400 HP Mack E7; Engine Brake; 8LL Trans.; Rubber Block Susp.; Tri-Axle; 19' Steel Body; 20,000# F/A; 46,000# R/A; 22.5 Tires; 248" WB; Spoke Wheels; EXPORT PRICED!!!; 777,148 Miles; Stk. #5902 - $19,500

2005 PETERBILT 357; 370 HP Cummins ISM; 8LL Trans.; Quad Axle Cab & Chassis w/Double Frame; 18K F/A; 44K Full Locking Rears; (2) 11K Steerable Lift Axles; Air Trac Susp.; 22' Frame Behind Cab; 212" CT; 302,500 Miles; Stk. #5831 - $41,500

2005 PETERBILT 357 6x6; Clean Double Frame 24'6" Flatbed Truck; CAT 350 HP; 8LL Trans.; 23K F/A; 46K Full Locking Rears; 425/65R22.5 Tires; Hendrickson Haulmaax Susp.; 5.65 Ratio; 288" WB; 218" CT; 30" Frame Behind Cab; Will Separate Bed from Chassis; 174,108 Miles; Stk. #5701 - $49,900

2004 KENWORTH T800; CAT C15 Single Turbo 435 HP; 10-Spd. Manual; Double Frame; 46K R/A; 16K F/A; Air Lift Axle; 4.33 Axle Ratio; 280" WB; 208" CT; 268" Total Useable Frame; 241,888 Miles; Stk. # 5959 - $48,250

2001 MACK DM688S - EXPORT PRICING SHOWN!; Double Frame Mixer Truck w/12 Cu. Yd. London Mixer; 350 HP Mack E7; 8LL Trans.; 18K F/A; 46K R/A; 20K Tag Axle; 254" WB; Hendrickson Rubber Block Susp.; 302,468 Miles; Stk. #6249/6250 - $11,500

2005 MACK GRANITE CU713; Mack 350 HP; Eaton 9LL Trans.; Low Mile Vacuum Truck w/4,000 Gallon Westech Vac Tank System; 250" WB; 18K F/A; 46K Full Locking Rears on Chalmers Suspension; 15,803 Hours; 126,829 Miles; Stk. # 6145 - $38,500

2002 MACK CL713; 460 HP Mack E7; 18-Spd.; Double Frame Cab & Chassis; 20K F/A; 46K Rears; 292" WB; 24'6" Frame Behind Cab; 208" CT; PTO; Good Rubber; Mack Air Ride Susp.; 309,234 Miles; 17,680 Hours; Stk. #5909 - $32,500

2011 AUTOCAR ACX64 GARBAGE TRUCK; 350 HP Cummins ISL; Allison Automatic; Shur-Pak 24 Cu. Yd. Side Load Packer; Double Frame; L/H & R/H Drives; 20,000# F/A; 44,000# R/A; Will Separate Packer From Chassis; 22' of Frame; 70,022 Miles; Stk. #6236 - $29,900

2006 INTERNATIONAL 5600i; Cummins 425 HP Engine; Allison Auto Trans.; Double Frame Dump Truck; 20' Steel Body w/4' Sides; 20K F/A; 46K Full Locking Rears; Hendrickson Rubber Block Susp.; Air Lift Axle; 246" WB; 313,862 Miles; Stk. #6254 - $48,500

2005 PETERBILT 357; CAT 305 HP; Allison Auto.; Clean Cab & Chassis; 20K F/A; 46K Rears on Haulmaax Susp.; 17" Frame Behind Cab; 140" CT; 216" WB; New Drive Tires; 129,217 Miles; Stk. #4894 - $59,000

2003 WESTERN STAR 4900S; 500 HP Detroit Diesel; 13-Spd. Manual; Air Slide 5th Wheel; 14,600# F/A; 46,000# Rears On Hendrickson Air Ride; 226" WB; 544,913 Miles; Stk. #5962 - $26,500

2003 KENWORTH W900; 320 HP Cummins ISM; Allison Auto.; Clean, Low Mile Cab & Chassis w/20,000# Front Axle; (2) 11,000# Steerable Lift Axles; 44,000# Full Locking Rears On Chalmers Susp.; 5.43 Ratio; 250" WB; 21' Frame Behind Cab; 156" CT; Mufler Takes Up 12" Behind Cab; Stk. #6016 - $49,900

2004 KENWORTH W900; 335 HP CAT C10 Engine; 8LL Trans.; Cab & Chassis; 20K F/A; 46K Full Locking Rears; 252" WB; 21' Frame Behind Cab; 150" CT; 4.89 Ratio; Haulmaax Susp.; 118,703 Miles; Stk. #6075 - $29,900

2004 WESTERN STAR 4900S 430 HP CAT C12; 18-Spd. Manual; Clean, Low Mile Tank Truck w/4,360 Gal. Steel Tank & Bowie 3" Pump; 16K F/A; 46K Full Locking Rears; 252" WB; Chalmers Suspension; 133,613 Miles; Stk. #5979 - $38,500

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An Important Note from our Team

Cornell Cooperative Extension's Northwest New York Dairy, Livestock, and Field Crops Program prioritizes the health, safety, and well-being of our staff, constituents, and community members. Given the uncertainty surrounding the rapidly-changing COVID-19 situation, many of our upcoming events have been cancelled or postponed. This includes on-site farm visits and consultations. Our specialists are still available to help you via phone, text, video-conferencing, email and hard-copy mail as needed. We will resume our regular programming as soon as we can. Stay up to date on all of our program offerings by visiting our website or contacting any of our team's specialists. Our direct phone and email contact information is listed on page 2. We look forward to helping you manage your farm business during this time and hope that you and your family stay safe and healthy!

COVID-19 Information Websites:

Need information? View the following Cornell CALS and CCE Resource Pages that are updated regularly.

General Questions & Links:
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Food Production, Processing & Safety Questions:
https://instituteforfoodsafety.cornell.edu/coronavirus-covid-19/

Employment & Agricultural Workforce Questions:
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Cornell Small Farms Resiliency Resources:
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