

2019 Performance of DFBS Cooperators in Central NY & the Southern Tier

By Mary Kate Wheeler, CCE South Central NY Dairy & Field Crops Team; Nicole Tommell, CCE Central NY Dairy, Livestock & Field Crops Team; and Bonnie Collins, CCE Oneida County

Cornell Cooperative Extension's farm business management educators work closely with dairy farm operators to complete the New York State Dairy Farm Business Summary (DFBS) on an annual basis. This article summarizes 2019 DFBS results for dairy producers from 15 counties across Central NY and the Southern Tier: Broome, Chemung, Chenango, Cortland, Fulton, Herkimer, Madison, Montgomery, Oneida, Onondaga, Otsego, Saratoga, Schoharie, Tioga, and Tompkins.

The DFBS is open to any farm that wishes to participate, and participation is voluntary and confidential. Forty-one dairy farms from this region completed the DFBS in 2018 and 2019. The data summarized below are from farms marketing milk conventionally. Dairies selling organic milk are not included.

Farm Size & Production Yields

In 2019, the 41 participating dairies from our region had an average of 804 cows per farm. Farm size among this group ranged from fewer than 140 cows to more than 1,600 cows. The average number of cows per farm increased by 5% from 2018 to 2019. The average number of heifers per farm also increased, yet the average ratio of heifers to cows declined slightly, from 0.86 heifers per cow in 2018 to 0.83 heifers per cow in 2019.

Dairies in our sample reported 2019 milk production ranging from fewer than 3.0 million pounds to more than 43.6 million pounds per farm. Average milk sold in 2019 was 21.4 million pounds per farm, a 7% increase over 2018. This jump reflects the 5% increase in the number of cows per farm, plus a 2% increase in the pounds of milk sold per cow. Average milk sold per cow was up 382 pounds, from 26,176 pounds in 2018 to 26,558 pounds in 2019.

Average tillable acres per farm increased by 4%, from 1,576 acres in 2018 to 1,632 acres in 2019. On average, dairy producers saw hay yields increase by 3% and corn silage yields decrease by 5% in 2019 compared to the prior year.

Farm Labor

Dairies in our region reported a 3% increase in worker equivalents per farm, on average, from 16.6 FTE in 2018 to 17.2 FTE in 2019.

Labor efficiency also increased from one year to the next. The average number of cows per worker was 46.9 in 2019, up 2%, from the previous year. Milk sold per worker increased by approximately 40,000 pounds, or 3%, from 1.20 million pounds per worker in 2018 to 1.24 million pounds per worker in 2019.

The cost of hired labor on dairy farms rose in 2019. The average cost of hired labor was \$42,887 per worker, up 4% from 2018. However, the increase in labor efficiency described above partially offset the impact of rising labor costs per worker. As a result, the average cost of hired labor per unit of milk production rose 2%, from \$2.85 per hundredweight in 2018 to \$2.91 per hundredweight in 2019.

Milk Price & Income Generation

In a boon for the dairy industry, total operating receipts rose by 10%, on average, from 2018 to 2019. Average total operating receipts were \$5,769 per cow and \$21.72 per hundredweight in 2019, compared to \$5,186 per cow and \$19.81 per hundredweight in 2018. Higher milk prices in 2019 drove this change. Gross milk sales rose 12%, on average, from \$17.17 per hundredweight in 2018 to \$19.31 per hundredweight in 2019. Gross milk sales averaged \$5,127 per cow in 2019, up \$632 per cow from the previous year.

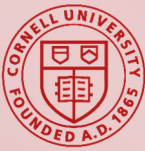
Inside this Issue:

New Podcast, "Troubleshooting Herd Health Issues..."	2
Forage Inventory: Have you taken stock of your age...?	4
Things to Consider as You Walk the Pasture	5
Dialing into your Best Dairy: Reaching your Herd's Genetic	6
Fall Webinar Series: Digging into the Data Pipeline	8
Grain Storage and Handling	9
Compaction Action—Taking Deeper Care of the Soil	10-11
Drought Insurance for Forages	14
Human Health Concerns from Grain Dusts & Molds	15
New York State Forage Exchange Announced	15

(Continued on page 12)


The South Central New York Dairy and Field Crops Program is a Cornell Cooperative Extension partnership between Cornell University and the CCE Associations in 6 Counties.





New Podcast from CCE Dairy Educators & PRO-DAIRY, "Troubleshooting Herd Health Issues on Your Dairy"

This podcast is a series about troubleshooting herd health issues on dairy farms. It features PRO-DAIRY and CCE Dairy Specialists who over the course of fourteen episodes will discuss specific areas to look at when experiencing issues in different life stages of the dairy cow. Episodes focus on preweaned calves, transition through weaning, heifer phase, calving of the transition cow, specific cow issues from mastitis, issues production, feeding behavior lameness, and problems during



pen issues, metabolic disorders fresh cow issues, lactating with reproduction, and facilities, hoof health and the dry period. Some episodes feature guest speakers and case studies, and will be released starting November 30th. Look for a new episode each week on the PRO-DAIRY website (<https://prodairy.cals.cornell.edu/events/podcasts/>) where you can find each episode along with additional resources and speaker contact information. You can also listen via SoundCloud on the CCE Dairy Educators channel, and check back for future podcast series. For more information, contact PRO-DAIRY's Kathy Barrett (kfb3@cornell.edu) or your CCE Regional Dairy Specialist.

Check Out Our New Online Platforms!



Search for

[CCE South Central NY Dairy & Field Crops Team](#)

and



<https://twitter.com/SCNYDFC>

Visit us there for all the up to the minute industry news!

We are pleased to provide you with this information as part of the Cooperative Extension Dairy and Field Crops Program serving Broome, Cortland, Chemung, Onondaga, Tioga and Tompkins Counties. **Anytime we may be of assistance to you, please do not hesitate to call or visit our office.** Visit our website: <http://scnydfc.cce.cornell.edu> and like us on Facebook: <https://www.facebook.com/SCNYDairyandFieldCropsTeam>.

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We put knowledge to work in pursuit of economic vitality, ecological sustainability, and social well-being. We bring local experience and research-based solutions together, helping our families and our community thrive in a rapidly changing world.

Building Strong and Vibrant New York Communities

"Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities"

Design Your Succession Plan



4-part remote course via Zoom with activities in an online learning platform

When: Thursdays, October 8, 15, 22 & 29, 2020 from 6:30PM - 8PM

Cost: \$60 per farm family, includes a workbook valued at \$20

Registration link: https://reg.cce.cornell.edu/dsp_230

Contact: Mary Kate Wheeler at mkw87@cornell.edu or 509-294-6073

Empowering families to get started on their succession plan

How will your family farm operate in the future when the owner retires or is gone? Are you currently working with another generation who may be questioning their role in the future of the farm, or are you yourself questioning your current role?

More than 80% of farm families hope to pass the family farm on to the next generation, but only 30% of family farms survive to the second generation, and only 12% survive to the third generation. A successful transition to the next generation takes careful planning.

CCE educators will present an interactive program to help farm families start their succession planning process. Participants will open the lines of communication with family to create a shared vision for the family business. They will also learn to choose and work with professionals such as attorneys, accountants, lenders, insurance agents and tax experts to construct a plan and documents that put the family's vision into action. This program will prepare you to envision, communicate, plan, write and shape the legacy of your farm or ranch business.



Legal Entities for Farm Businesses: LLCs and Trusts

When: 1pm - 2pm on Thursdays November 5 & 19, 2020

Cost: \$10 per farm for both sessions

Register online: <https://scnydfc.cce.cornell.edu/event.php?id=1328>

Register by phone: 607-391-2662

Register to attend the live webinars and receive access to recordings after each session.

November 5

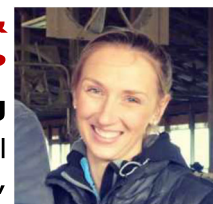


Is an LLC Right for Me?

Chris Anderson, Farm Credit East

Have you ever wondered whether forming an LLC would be good for your farm? This workshop is for any agricultural business operating as a sole proprietorship or partnership, interested in learning about the costs and benefits of Limited Liability Corporations. Chris Anderson from Farm Credit East will review common farm business structures, then discuss how to evaluate whether an LLC is a good fit for your specific circumstances. We will also discuss the process of setting up an LLC, selecting and working with advisors, and making changes to an LLC over time.

November 19



What is a Trust & Does My Farm Need One?

Anna Richards, 2020 Consulting

This session will help farmers and rural landowners understand what a trust is, and whether it is the right tool to protect and manage their assets. Anna Richards from 2020 Consulting will describe several types of trusts that are commonly used in farm business and succession planning, and discuss the process a farm goes through to set up and manage a trust.

Forage Inventory: Have you taken stock of your forage harvests?

By Betsy Hicks, Area Dairy Management Specialist

One of the most frustrating things to a nutritionist, and indeed the cow herself, is a diet that is constantly changing. Just when a diet gets dialed in, it seems that a new bunk is being opened, first cutting is being buried behind a subsequent crop or an ingredient just ran out. Maintaining consistent forage content and quality in the diet is the basis for keeping other feed ingredients steady. Without knowing forage inventory, the task of maintaining consistency becomes almost impossible over a year's time. This year especially, with drought affected later hay crop cuttings and many corn fields being frosted early, paying attention to inventory of all forages now will ensure diet consistency through the winter months.

Where to Start? What are Forage Needs?

The first step for identifying inventory needs is to determine forage needs for the entire herd. Cornell Cooperative Extension published a Dairy Herd Forage Needs Worksheet several years ago that still applies, and I adapted it to an Excel spreadsheet so numbers can be easily plugged in and calculated. (See Figure 1)

Dairy Herd Forage Needs Worksheet

Group		(A) Number of Animals	(B) BW, lbs.	(C) Forage DMI,% BW	(D) Daily Forage DMI, lbs./cow (B*C/100)	(E) Days in Period	(F) Total Forage DM, lbs./cow (D*E)	(G) Total Forage DM, tons/cow (F/2000)	(H) Feeding Loss, %	(I) Adjusted Forage DM/ tons/cow ((100+H)*G)/100	(J) Group Forage DM, tons (A*I)
Milking											
Dry											
Calves	< 2 months										
Heifers	2 – 12 months										
Heifers	>12 months										
Total											

Figure 1. Dairy Herd Forage Needs Worksheet

Key points to determining forage needs are:

- ⇒ the number of animals in each group
- ⇒ the average body weight of the group of animals
- ⇒ the time frame in days that inventory needs to last

Another factor that comes into play is the forage dry matter intake, as a percent of body weight. For this purpose, lactating cows can be calculated between 1.5% to 2.5%, dry cows 1.2% to 1.7%, and heifers 1.0% to 2.0%. Feeding losses are another factor, and should be considered between 5-10% at minimum. For round bale feeding through feeders or other potential ways of feeding that experience loss, a higher percent may be necessary.

Once you've worked through the process for each group of animals,

the total forage tons (in dry matter) can be calculated for the time period selected, or per day. Key to this is remembering that this is dry matter tons, not as fed tons. See Figure 2 for an example for a 400 cow herd.

Figure 2. Dairy Herd Forage Needs Worksheet

Group	(A) Number of Animals	(B) BW, lbs.	(C) Forage DMI, % BW	(D) Daily Forage DMI, lbs/cow (B*C/100)	(E) Days in period	(F) Total Forage DM, lbs/cow (D*E)	(G) Total Forage DM, tons/cow (F/2000)	(H) Feeding loss (%)	(I) Forage DM/tons/cow (((100+H)*G)/100)	Adjusted Forage DM/tons/cow (A*I)	(J) Group Forage DM, tons (A*I)	(K) Tons Forage DM/day (J/E)
Milking Dry		350	1600	2.5	40	365	14600	7.3	5	7.7	2682.8	7.35
		50	1700	1.7	28.9	365	10548.5	5.3	5	5.5	276.9	0.76
Calves	< 2 months	20	150	1	1.5	365	547.5	0.3	5	0.3	5.7	0.02
Heifers	2-12 months	150	700	1.5	10.5	365	3832.5	1.9	10	2.1	316.2	0.87
Heifers	>12 months	150	1100	2	22	365	8030	4.0	10	4.4	662.5	1.82
									TOTAL DM TONS		3944.1	10.8

Figure 2. Dairy Herd Forage Needs Worksheet

Determining Forage Inventory

After forage needs have been determined, forage inventory can be calculated. All bales of dry hay, (round and square), bales of baleage (round and square), haylage and corn silage in upright silos, bunk silos, ag bags and drive-over piles should be considered and calculated. The key to determining forage inventory, especially with bunk storage, is to not overestimate the packing density. If you're not sure of the density, there are methods to assess this. Good rules of thumb that can be applied are 12 lb DM/cubic foot = poor packing, 15 lb DM/cubic foot = average packing, 18 lb DM/cubic foot = excellent packing. In some cases over 20 lb DM/cubic foot can be achieved, but I would hesitate to use this number without verifying.

Several years ago Cornell Cooperative Extension developed

D. Bunker silos

Silo ID	Crop	Feet remaining, height, width, length	(A) Cubic Feet remaining (Length*height*width)	(B) Packing density	(C) Tons DM silage (A*B)/2000
Total					

worksheets to assist in this process that I again adapted to Excel sheets, and can be shared. Figure 3. Determining total tons of dry matter from bunker silos.

(Continued on page 5)

Finally, Matching Inventory to Needs

The last step to answering the question of adequate forage inventory involves matching forage needs to inventory. A simple subtraction of needs from inventory tells us whether there is an adequate supply or not for the time frame used in the forage needs worksheet. In this example, our forage needs worksheet used a full year of days to calculate needs, and while this probably is true for corn silage in most situations, many farms do not carry over a full year of haylage. Adapting our forage inventory table to determine the days required for the forage to last will tell us if we have adequate inventory over the time frame. For example, if our corn silage inventory equals 2500 DM tons and we want it to last a full year, we can expect to feed up to 6.85 DM tons per day and make it last. If our first crop haylage inventory equals 500 DM tons and we need it to last 200 days, we can expect to feed up to 2.5 DM tons per day for it to last that time frame. In figure 2, I added a last row that calculates forage needs per day. For each forage type, we can match to the animal class that will eat it, and calculate if needs are met by inventory over time frame. In our example (figure 2) lactating cows need a total of 7.35 DM tons per day. Our inventory of 2500 DM tons of Corn silage and 500 DM tons of first crop is adequate for our lactating cow needs, but the forage needs of other animal classes must be added to those numbers to be sure there is enough inventory of each forage.

Key Side Note

Shrink is not included in any forage needs numbers, other than feeding losses. Forage inventory numbers also do not take into consideration any shrink amount. Even if there is minimal visual spoilage in a pile, some amount of shrink is probably occurring. Evaluating inventory several times throughout the year is worthwhile to account for this, especially if there is significant spoilage on the sides or tops of piles.

Tedious, but Worthwhile

Nothing is more concerning than watching a pile of corn silage disappear faster than anticipated, other than perhaps running out of said forage. Taking the time to evaluate inventory in the fall, after harvest of all crops is necessary to set the stage for feed-out over the winter months. Another good time to re-evaluate inventory and adjust feed-out rates is around the first of the year. Small changes are better than large changes, and involving the nutritionist to evaluate inventory during set time periods over the course of the year will ensure that the farm, the nutritionist and the diet are all on the same page. Your Extension Educator can also help walk you through the process, we're only a call away. The cows will thank you for it.



Things to Consider as You Walk the Pasture

*Ed Heckman, Purdue University -
Wayne County Extension Educator*

Indiana has one million acres of permanent pasture. The productive potential on many of these acres has not been reached. There are many factors that play a role in pasture productivity. The grazer can control many factors and some cannot be controlled. Considerable improvement could be made in the state's permanent pasture, if sound management practices were implemented. Below are some considerations that each grazer should evaluate as good pasture management decisions are made.

Do not over graze: When pastures are continually overgrazed, plants are weakened and many productive species die, and unproductive ones replace them. Leaf area is reduced and the growth rate is slow. Water runoff is increased; soil temperatures increases; and overall pasture quality and quantity decrease.

Do not under graze: When pastures are under grazed, forage will accumulate and not be used. In order for pasture production to be profitable, the forage produced must be utilized. Under grazing also allows briars and woody species to get established.

Apply lime when needed: Lime provides very important nutrients and also corrects soil acidity. Acid soils can limit plant growth and vigor, especially for legumes. Lime needs are determined by soil test.

Fertilize wisely: Most permanent pastures would benefit from a soil test and subsequent fertilizer applications. Nitrogen fertilizer should be used sparingly. Nitrogen fertilizer increases yields for only a short time and then must be repeated, if yields are to be maintained. Nitrogen fertilizer tends to decrease legume content, because grass growth shades the legumes and reduces their vigor.

Encourage legumes: Legumes provide nitrogen for grasses, increase yields, and greatly improve pasture quality. Legumes require high lime fertilizer levels. If legumes are to be maintained, they must be grazed properly. Some legumes can furnish quality grazing during the summer months, when cool season grasses are less productive.

Control undesirable plants: In general, the plants that are growing in a permanent pasture are the ones that are suited to the conditions that exist in the pasture. To change the plant species, the environment needs to be changed. This can be accomplished by changing the grazing system, adding lime or fertilizer, or by combining both of them. Livestock will eat some weeds, when they are young and vegetative. Good grazing management will

(Continued on page 11)

Dairy News

Dialing into your Best Dairy: Reaching your Herd's Genetic Potential, Neonate Phase

By Casey Havekes and Alycia Drwencke, CCE Regional Dairy Specialists

Many years of research have demonstrated that from birth to weaning is a critical period in the dairy animal's life and the management decisions made during this time could have long term effects on that calf's future performance, health, and productivity. Several key management tips have been highlighted here which should be considered to maximize the success of the neonate period.

Calving Ease

While difficult calvings are unavoidable at times, it is important to consider the toll it may have on not only the mother, but also on the newborn calf. Utilizing the VIGOR scoring system can be an effective strategy in assessing the status of newborn calves. This scoring chart focuses on 5 areas: visual appearance, initiation of movement, general responsiveness, oxygenation, and heart and respiration rates. The chart walks you through a series of observations and assigns the calf a score – the higher the score, the less vigorous the calf is. Calves that are deemed less vigorous should be monitored, and at times, offering less vigorous calves an NSAID has been shown to improve success in early life.



used for both feedings, not the second milking from the cow.

- Collecting and feeding transition milk (the 2nd to 4th milking after parturition) is nutritious and beneficial to the newborn calf following the initial colostrum feedings, and contributes to improved intestinal development. An alternative strategy is to mix colostrum with milk or milk replacer as a transition to take advantage of these benefits.

- Calves can handle larger meals! When calves are fed with automated feeders they prefer to consume ~1.5 gallons per meal, with some calves consuming up to ~2 gallons per meal.

- With the right plane of nutrition, calves should have no problem achieving an ADG of 2.2 pounds per day.

- Providing feed and water by 3 days of age is now a requirement as per FARM 4.0.

- When feeding whole milk, keep in mind that calves need consistency. Check the solids content periodically

to make sure the levels are adequate and consistent. Adding a balancer/enhancer could be beneficial if you run into issues with solids being out of line.

Cleanliness & Calf Comfort

- Maintaining a clean, dry, and comfortable maternity pen for the calf and the cow will help reduce the risk of naval infections for the calf and contaminant exposure for the cow.
- Keeping the calf dry in the winter will help with proper body temperature regulation.
- All feeding equipment, including bottles, buckets, nipples, tube feeders, etc., should be sanitized between each use. The same applies for birthing equipment such as calf jacks, chains, and so on.
- Using an appropriate washing detergent with hot water at 120 degrees Fahrenheit followed by proper drying of

Colostrum Management & Nutrition

In addition to basic colostrum management and getting high quality colostrum into the calf quickly, there are some additional considerations grounded in recent research. A few key takeaways include:

- Feeding 1 gallon of colostrum resulted in higher average daily gain, greater chance of survival through their second lactation, and higher milk yield through their second lactation compared to calves fed half a gallon.
- With strong colostrum management, two separate, smaller colostrum feedings within a 12-hour window can be utilized. This approach does not reduce total serum protein levels; however, please note that high quality colostrum must be

(Continued on page 7)

equipment is essential to reduce pathogen growth.

- Ventilation is important for calf health. Calves require 4 air exchanges per hour in the winter, and 60 air exchanges per hour in the summer. There has also been an increased amount of literature showing the benefits of providing heat abatement of fans and a shade source to calves.
- Socially housing calves can be beneficial, including improvements in their ability to learn and cope with change. If calves are socially housed, group size should ideally be kept around 8, but can increase up to 15 with appropriately sized pens and management. The Ontario Ministry of Agriculture, Food and Rural Affairs has a minimum suggestion that calves less than 6 weeks of age receive 2.0 m²/calf, and this allotment increases to 3.5 m² after that, until weaning. Grouping early in life and maintaining consistent social structures can reduce stress. When regrouping is necessary, try to keep each calf with at least one familiar pen mate to further reduce the stress associated with the group change.

Weaning

- Weaning is a stressful period so limiting the number of changes that occur during this time period is essential (i.e. pen changes, regrouping, disbudding, further nutrition changes).
- Consider weaning based on starter intake rather than age. In order to avoid post-weaning growth slumps, calves should be consuming 4.5 lbs of starter per day by the time they are fully weaned. This means calves should be consuming upwards of that at the time the weaning process starts.
- If weaning is solely based on age, research has shown that calves have better post-weaning growth if they are weaned at 8 weeks compared to 6 weeks.
- Gradual or step down weaning over a 2-week period is favorable from a behavioral standpoint and helps avoid post-weaning growth slumps.

Overall, this early life period is a vulnerable time and there are many additional considerations beyond what has been discussed here. Implementing these strategies can help maximize success early in the calf's life. Careful monitoring of the calf at birth, colostrum management, nutrition, comfort and ventilation, cleanliness, and weaning are all areas that require attention to detail. For help on these topics or for additional considerations, reach out to your local Cornell Cooperative Extension Dairy Management Specialist, [Betsy Hicks](#).



Cornell Cooperative Extension Northwest NY, North Country Region and South Central NY Teams Present

"It's Always the Nutritionist's Fault!"

-a FREE webinar for farmers and dairy nutritionists -
Understanding Diets and Improving Communication on Your Dairy



**Join us for a live webinar on
Thursday, October 15, 2020
presented twice at
12:30pm & 7:00pm EST.**

Goals:

- ⇒ *Improve communication between the dairy farm and their nutritionist*
- ⇒ *Ensure dairy farm & nutritionist have matching goals for the farm*
- ⇒ *For the dairy farm to understand what is in their diet and why it is being fed*
- ⇒ *For the dairy farm to gain a basic understanding of how to compare diets*
- ⇒ *For the dairy farm to clearly communicate concerns to their nutritionist when they may arise*
- ⇒ *For the nutritionist to use this as a guideline for conversations with their dairy farmer client*

The live session including interactive poll questions, and a Question and Answer session at the end of the presentation.

Please register through the following link: <https://cornell.zoom.us/j/94481234567>

Fall Webinar Series: Digging into the Data Pipeline

<https://ag.purdue.edu/digital-ag-resources/fall-webinar-series-digging-into-the-data-pipeline/>

Join experts in data science and digital agriculture at Purdue University for a series of digital agriculture webinars each Thursday, starting Oct. 1 at 12:30 p.m. ET. From practical tips you can implement today to deeper dives into what drives the technology, the Digging into the Data Pipeline presentations are designed for those interested in getting more out of farm and other agribusiness data.

“Collection is just the first step when it comes to taking advantage of all of the data

generated on the farm, whether it is in the field or in a livestock barn,”

said Dennis Buckmaster, professor of Agricultural & Biological Engineering and Dean’s Fellow for Digital Agriculture at Purdue

University. “In this series, we want to go a few levels deeper and demonstrate everything from managing your data with a smartphone to using and maintaining sensors on the farm.”

The webinars start at 12:30 p.m. ET each Thursday starting on Oct. 1 and running through Dec. 10th.

Speakers will present for the first 30 minutes followed by a live chat where participants can ask questions.

Oct. 8 – Choose the Path of Least Resistance for Your Data. Yang Wang, graduate research assistant in electrical and computer engineering at Purdue University

Oct. 15 – Sensors, The Possibilities are Endless. Gaganpreet Hundal, graduate research assistant in computer and information technology at Purdue University

Oct. 22 – Make Sense of Your Sensors. Andrew Balmos, data/software engineer at Purdue University and John Scott, digital agriculture extension coordinator at Purdue University

Oct. 29 – Hammer is to Nail as API is to Software. Andrew Balmos, data/software engineer at Purdue University and Zach Mason, senior software engineer at Wabash Heartland Innovation Network

Nov. 12 – Dig into Data within Your Spreadsheets.

Dennis Buckmaster, professor of Agricultural & Biological Engineering and Dean’s Fellow for Digital Agriculture at Purdue University

Nov. 19 – Meet LoRa, Your New Best Friend. Andrew Balmos, data/software engineer at Purdue University and Jack Stucky, vice president of engineering at Wabash Heartland Innovation Network

Dec. 3 – Extend the Power of Your Spreadsheets. Dennis Buckmaster, professor of Agricultural & Biological Engineering and Dean’s Fellow for Digital Agriculture at Purdue University

Dec. 10 – GROW Your Field Knowledge. Andrew Balmos, data/software engineer at Purdue University

The webinars are free but registration is requested.

Visit <https://purdue-edu.zoom.us/meeting/register/tJArcOGrpjkoHdaiE6-QCCpqPVfsUF7419Xb> for more information.

The presentations will be recorded and posted on the Purdue Digital Ag Resources website (<https://ag.purdue.edu/digital-ag-resources/>). This series is supported in part by the Wabash Heartland Innovation Network (WHIN).



Grain Storage and Handling

Management Ag Safety & Health, Division of Extension, University of Wisconsin

Keeping grain in proper condition is the first step in preventing entrapment in flowing grain. Many grain entrapments have occurred when a person went into a bin to break apart moldy or crusted grains. Good bin management will help prevent moldy grains and spoilage.

Enter a bin only if absolutely necessary. Instruct family members, especially children, and employees on the hazards of entering grain bins and dangers in flowing grain. Flowing grain is also a hazard with gravity wagons.

Use a pole to break up grain bridges from outside the bin. If you have hauled out grain and the grain surface is at the same level, this is an indicator that there's a grain bridge. You should see a funnel shape on the grain surface after grain has been removed. The hollow cavity under a grain bridge will be equal to the volume of grain that has been removed. A grain bridge will not support a person's weight. The pole should be attached to a rope tied to the outside of the bin. If you drop the pole, it can be retrieved using the rope and save you from entering the bin.

If you need to enter a bin:

Lockout/tag-out power to augers or other powered equipment before entering bin. If augers are operating, the flowing grain will pull you down in a matter of seconds.

Use proper PPE as [air quality may be reduced by mold and dust](#). Use a NIOSH approved dust respirator to prevent exposure to high levels of dusts or molds. If the grain has become moldy, the molds will produce carbon dioxide. The carbon dioxide can displace the oxygen in the air causing an oxygen deficient atmosphere. Use a gas monitor to test oxygen levels before entering bin.

·Use a body harness and safety line secured to the outside of the bin when entering. An anchor point and safety line should be able to hold 5,000 pounds of force. The body harness and safety line may not prevent you from being caught in flowing



grain. It will help rescuers locate you and the body harness gives rescuers some place to attach retrieval systems.

·Have at least two trained observers during grain bin entry. Discuss communication plans and actions to take in case you become entrapped in flowing grain. Instruct them to not enter to rescue but to call for rescue assistance.

·Use hand signals to communicate. Other communication devices may not work inside a bin.

·Work from top to bottom when cleaning grain bin walls. Any grain piled higher than your head has the potential to collapse and avalanche down on top of you.

Check that an entry permit has been issued and safety precautions have been taken to make a safe entry.

If rescue is required:

·Shut off all grain-moving machinery. It is important to stop the flow of grain.

·Contact the emergency rescue service or local fire department.

If possible, ventilate the bin using the drying fan without activating the heat source.

<https://fyi.extension.wisc.edu/agsafety/structures-and-storage/confined-spaces/grain-storage-and-handling/>



1-800-724-0862

info@LocalCommunityHealth.com

<http://localcommunityhealth.com/medical/agricultural-workers/>
For more information or to make an appointment

Compaction action—Taking Deeper Care of the Soil

By: Innovative Farmers Association of Ontario (IFAO)

Soil compaction is a “silent thief” of yield. Farm equipment is larger and heavier than ever before. In a dry year like this, potential for creating compaction is much lower but the damage and effects of soil compaction can be seen in both dry and wet years.

The Innovative Farmer’s Association of Ontario has several years of compaction research that is introduced in this article. They use sensors buried in the soil at different depths to measure the impact of different types and weights of machinery. They adjust tire widths and pressures to make comparisons. It is groundbreaking work and very interesting providing solid recommendations to reduce the negative travel impact in your fields. - Janice Degni

IF YOU’RE CAREFUL about keeping your fully-loaded sprayer out of wet spots and not leaving big ruts, then it’s not doing any real damage, right? Not quite. In fact, the damage and long-term effects caused by soil compaction go far deeper than what you can see on the surface.

That’s just one of the many hard-hitting facts to come out of Compaction Action Day, an event organized by the Innovative Farmers Association of Ontario (IFAO) that saw almost 400 farmers, equipment dealers, agronomists, researchers, and extension specialists gather at Shawridge Farms in Arthur, Ontario.

The event’s main aim, says Jake Kraayenbrink, IFAO director, was to focus farmers’ attention squarely on the issue of soil compaction by giving them an up-close and personal look at the damage that can be caused by farm equipment.

“We’ve got to first recognize that we have a problem, and if we don’t change that problem, it’s only going to get bigger,” he says. “What we hoped to achieve on that day was to show people that this is science, and that what compaction is doing to our soils is very real.”

Equipment Impact

Kraayenbrink points out that equipment just keeps getting bigger and heavier. Tractor weight alone is increasing at a rate of 500 pounds per year, let alone combines, buggies, and manure tankers. And with this trend towards using larger, heavier equipment, comes an increased risk of soil compaction damage.

“The soil has to sustain that weight, and it just can’t keep going that way. Compared to 50 years ago, we’re farming in a completely different environment, where equipment weighed 14 tons instead of 50 tons like it does now, and there was much more organic matter to act as a cushion,” he says.

“We don’t have the luxury of making sure soil is strong enough to hold heavy loads,” adds Alex Barrie, a project engineering intern with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). “It’s almost like designing a building to stand on the foundation that’s already there, rather than building from the foundation up.”

The risk and severity of soil compaction damage also varies by soil

type and soil moisture, with wet soils at planting time being one of the biggest culprits, says Ian McDonald, applied research coordinator for field crops with OMAFRA .

“We tend to go too early onto wet soil because we think we can’t wait. But by going in, we end up doing more damage to yield potential by compacting the soil than what would come from a couple extra days of later planting when the soil was fit to be worked,” he explains.

Taking Measure

One of the featured experts at Compaction Action Day was Matthias Stettler, a research fellow from Bern University of Applied Science in Switzerland, who specializes in studying the effects of soil compaction.

Stettler showcased a series of specially designed, pressure-sensing probes that were placed in the soil at depths of six, 12, and 20 inches to measure the amount of pressure that farm equipment exerts



Ted Taylor explains the effects of compaction on the solid and subsoil.

throughout the entire soil profile.

Farmers then watched as some 73 different configurations of farming equipment — from combines to pickup trucks, each with different tire and track setups — rolled over the sensors, which displayed real-time results on a jumbo screen.

Those results, says Kraayenbrink, caught many attendees — himself included — by surprise.

In one case, they saw that a loaded pickup truck caused similar surface compaction to a massive, 70-ton manure spreader outfitted with large tires that were deflated to the correct pressure using a unit mounted tire inflation/deflation system.

“We do want people to understand that this was one day, one event, and under a specific set of soil conditions — it’s not a perfect science,” says Kraayenbrink. “But the intent was to visually show that there are a lot of unacceptable pressures being put on our soil.”

(Continued on page 11)

According to Stettler, topsoil compaction stress is mainly affected by tire width, volume, and inflation pressure, and he recommends that farmers run their tires at a maximum 15 psi in the field and strive to go even lower.

When you get into subsoil depths of 12 and 20 inches, the effect of tire size and pressure isn't as important. Rather, it's axle — or wheel — loads that cause compaction stress throughout the soil profile and into the deep layers.

Stettler's rule of thumb: If you go over five tons per wheel or track, you start running the risk of subsoil compaction damage, which can be felt for decades.

"When we talk about subsoil compaction damage, we can say that it's almost permanent," says Stettler. "And it's extremely difficult to manage or even correct once compaction takes place."

He cites long-term studies conducted in Scandinavia where researchers performed a series of compaction experiments and measured the subsoil density. The researchers then re-measured subsoil density 40 years later and saw virtually no difference.

"That shows us what they destroyed 40 years ago with heavy machinery could still be seen in the subsoil. So once you compact soil, you damage the subsoil and it's almost persistent," explains Stettler. "That means poor drainage, lower microbial activity, and less root growth."

Topsoil compaction, on the other hand, is not quite as permanent an issue and can be repaired through management, such as planting a cover crop, crop rotation, and reduced tillage to boost organic content. Tillage can be also used to correct shallow compaction, but if not done carefully, can make soil prone to even more compaction.

As for whether tracks or tires are the best option for reducing compaction, Stettler explains that while tracks spread out pressure over a wider footprint, they're often used on heavier, bulkier equipment that can cause deep compaction damage simply because of its weight.

"Tracks perform well for the topsoil, as they spread pressure out over a wider footprint, but then the subsoil has to counteract and compensate for this weight," he explains. "That's why we have higher risk of subsoil compaction with large wheel loads."

YIELD IMPACT

From an agronomic perspective, the yield loss due to soil compaction isn't always visible — but it can add up to become a serious problem, says Peter Johnson, agronomist with Real Agriculture. Over time, the yield losses creep steadily upward. Then, instead of getting 240 bushel corn, a farmer might only get 215 bushel corn.

"Soil compaction is insidious. It's not something obvious that you can plainly see — like a manganese deficiency where your crop goes yellow," says Johnson. "Every year, you're adding a little more yield loss, a little less drainage capability, a little less stress tolerance. Next

thing you know we have to split the tile, because the field isn't draining. And that is a major cost."

Johnson points out that as yields continue to climb and crop genetics improve, growers question whether compaction is a real issue at all.

"If a grower gets a piece of new ground — like an old pasture — their yields will blow past all their other land, even if the new land has low soil fertility," he explains. "Compaction is a big part of that difference."

As for what can be done to combat compaction right now, Darryl Burnett, IFAO president, says that there are plenty of options — such as newer tire technologies, tracks, and onboard inflation/deflation systems — that farmers can adopt.

"It's well worthwhile to give a lot of consideration to what rubber you're putting on a piece of equipment. The rubber on the ground shouldn't be a last-minute thought, or no thought at all. You need to match the tire or track to the implement," he says. "It can be costly, but then again so is getting 20 per cent less yield over time because of compaction damage."

Kraayenbrink says that the IFAO Compaction Action Day was just the beginning in terms of putting numbers to compaction pressures and pieces of equipment, and the group hopes to do more. But what the day really did was kick start the compaction conversation, and make farmers think about what they are doing in their own operations.

"We learned that we have to start learning more," says Kraayenbrink. "Compaction is not just a concern for agriculture, but for all society, as it affects our food source."

Recommendations to Minimize Compaction

- ◆ Wheel loads <5 tons or 10 tons/axle
- ◆ Increase footprint of the tire
- ◆ Reduce pressure below 15 psi
- ◆ Increase strength of the soil with less tillage, and use of cover crops to increase soil tilth and aggregate stability

(Things to Consider as you Walk the Pasture; Continued from page 5)

eliminate the need for clipping in most cases.

Species selection: Forage species have "personality" traits. These traits must be matched with the soil characteristics and pasture usage. Some legumes have specific soil drainage, lime and fertility preferences. Be sure to consider these when seeding a new pasture.

Water supply: Research and observation have verified that livestock prefer to have their water supply within 600 feet of the grazing area. Animal performance and uniformity of grazing are enhanced because they spend less time and energy walking to the water supply. Water quality should be a high priority. The water system becomes a focal point as the number of paddocks increase. Water lines may be left on top of the ground until the paddock design is finalized.

Land resource: Look at your pasture areas from different locations. Where are the slopes and which direction do they face? What slopes have the best plant growth? Forage species differ in their preference of north, south, east, or west slope. Observe which species are growing well in each situation.

This article can be found online at <https://www.agry.purdue.edu/ext/forages/rotational/pastures/heckman.html>

Cost Control

Feed is the largest single expense category for most dairies. In 2019, the average feed and crop expense per unit of milk production fell by 5%, dropping from \$7.06 per hundredweight in 2018 to \$6.74 per hundredweight in 2019. Yet the average total farm operating expense barely changed, rising from \$17.43 per hundredweight to \$17.48 per hundredweight over the same period. Increases in spending on machinery repairs, machinery rent and lease, and repairs to land and buildings in 2019 offset most of the cost savings on feed. This suggests that farms may have taken advantage of improved financial performance in 2019 to catch up on deferred maintenance and repairs.

The average total cost to produce milk, which includes operating costs, depreciation, and opportunity costs of labor and capital, increased 1%, from \$19.04 per hundredweight in 2018 to \$19.26 per hundredweight in 2019. Notably, in 2019 the average gross milk sales of \$19.31 per hundredweight exceeded the average total cost to produce milk, which was not the case in 2018.

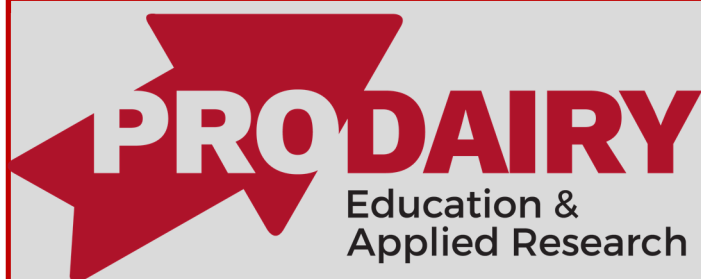
Net Farm Income & Return on Investment

Net farm income (without appreciation) is a key measure of profit. Net farm income for the 41 farms in our sample averaged \$522,011 per farm in 2019, which is equivalent to \$649 per cow or \$2.45 per hundredweight. This is approximately four times the average profit recorded in 2018. Average net farm income for the same group of farms in 2018 was \$123,893 per farm, \$162 per cow, and \$0.62 per hundredweight.

Rate of return on equity capital (ROE) and rate of return on all assets (ROA) are important measures of profitability. Excluding appreciation, the average ROE was 5.1% in 2019, compared to -0.8% in 2018. The average ROA was also 5.1% in 2019, compared to 0.7% in 2018. These data show that, on average, participating dairies were more profitable in 2019 compared to the prior year.

Final Thoughts

Dairies across Central NY and the Southern Tier achieved increases in productivity (pounds of milk per cow) and labor efficiency (pounds of milk per worker) in 2019, both of which respond directly to management choices. These trends show positive change for operations striving to make the most of their resources and opportunities. However, dairies in this region achieved higher profits in 2019 due in large part to higher milk prices, which depend on forces that are external to the farm. To survive and thrive in an industry characterized by rapid and unpredictable price changes, dairy operators must focus on improving the management practices and outcomes under their influence, while considering strategies to mitigate price risk and other threats that exist beyond their control.



Online Feeder School

Program Details:

The Online Feeder School is a 2-part educational program for farmers, employees, and agriservice professionals who work as or with the feeder – the person responsible for mixing TMR, maintaining bunk silos, and communicating with other farm staff. It will cover monitoring dry matter, feed bunk management, bunk face management, and troubleshooting mixer wagons. CCE Regional Dairy Specialists from around NYS have collaborated to develop this program.

There will be two separate virtual sessions: one 2-part session in English, and one 2-part session in Spanish. Each day of Feeder School is a 1.5 hour program held from 1:00 pm to 2:30 pm. The program will be held online only, with a combination of video demonstrations, presentations, and discussion.

The session in English will take place on November 3rd and 5th, 2020. The session in Spanish will take place on November 10th and 12th, 2020.

Speakers: Dr. Bill Stone (Diamond V), CCE Regional Dairy Specialists, PRO-DAIRY

The Online Feeder School features Dr. Bill Stone of Diamond V, who has helped a multitude of farms troubleshoot issues with feeding their dairy herds. He adds his expertise in troubleshooting mixer wagons and will be live to answer questions during discussion. CCE Regional Dairy Specialists and members of Cornell PRO-DAIRY round out the lineup of speakers for the 2-part program.

Questions?

Any questions can be directed to: Kathy Barrett, PRO-DAIRY kfb3@cornell.edu or your Cornell Cooperative Extension Regional Dairy Specialist.

To Register:

<https://ncrat.cce.cornell.edu/event.php?id=1343>



PRICE RISK MANAGEMENT FOR DAIRY FARMERS

November 3 & 10, 2020 7:00 – 9:00 PM EST

Online via Zoom. To Register:

<https://tinyurl.com/PriceRiskMgtDairyFarmers>

\$10.00 per farm for both sessions

MANAGE YOUR MILK PRICE

Following the abrupt downturn in milk markets during the spring and summer of 2020 and nearly an entire year of lower-than-expected milk prices resulting from the global pandemic, dairy farmers have a renewed interest in managing the price side of the business.

Please join CCE Capital Area Ag & Hort Program's Farm Business Management Educator- Dayton Maxwell, FSA Executive Director- David Holck, Tristan Peterson - Crop Growers Insurance, and Dr. Chris Wolf of Cornell University for an informative, fun, and educational program.

November 3, 2020

- Dairy Margin Coverage – David Holck, Farm Service Agency
- Forward Contracting and Such, Part 1 – Dr. Chris Wolf, Cornell University
- Determining if Risk Management is Right for My Farm – Dayton Maxwell, CCE CAAHP

November 10, 2020

- Dairy Revenue Protection – Tristan Peterson, Crop Growers Insurance
- Forward Contracting and Such, Part 2 – Dr. Chris Wolf, Cornell University
- Forward Contracting Dairy Farmer Experience – Dan Sheldon, Woody Hill Farms, Salem, NY

*Program activities are supported by and coordinated with
Cornell's Pro-Dairy Program and NY Farm Net.*



(Human Health Concerns from Grain Dusts; Continued from page 15)

“Farmer’s Lung” or Hypersensitivity Pneumonitis (FHP) is fairly uncommon and generally affects about 1 in 20 farmers. Many complaints by farmers to their health provider get mislabeled as FHP. FHP is a delayed allergic reaction that is caused when highly sensitive people breathe in grain dusts and their bodies produce “antibodies” as a reaction to the dust. Since FHP is an allergic reaction and involves the body’s immune system, repeated exposures and bouts with FHP can get worse with each exposure. Some individuals may become physically unable to work in dusty areas and can develop permanent lung damage. FHP is most often brought on or made worse by molds and bacteria that grew under warm/high heat conditions. These heat-loving organisms are more likely to grow in stored hay or sometimes in the top layers of stored silage as compared to grain that has been standing out in the field, though exposures that lead to FHP can occur from grain. If you’ve been diagnosed with FHP before, and get sick this year while working around grain, it is a good idea to see your family doctor.

~ **Part 2 to be found in December Issue of the SCDFC Digest** ~



New York is thrilled to launch COVID Alert NY – the official Exposure Notification App created by the New York State Department of Health in partnership with Google and Apple. Now you can use your phone in the fight against COVID-19 and get exposure alerts, without compromising your privacy or personal information.

What is COVID Alert NY?

COVID Alert NY is New York State’s official Exposure Notification App. This is a free smartphone app for anyone 18+ that lives and/or works in New York available for download in the Google Play Store and Apple App Store starting October 1st. The COVID Alert NY app notifies users if they have been in close contact with someone who has tested positive for COVID-19. Upon receiving an exposure notification, the app will encourage users to contact their physician or the State Health Department hotline (1-833-227-5045) to get more information about quarantining and testing.

Anyone who downloads the app does not have to worry about being tracked, identified or having their personal information shared. The app is completely anonymous and does not track your location or movement. No personal data is collected. COVID Alert NY uses Bluetooth proximity-enabled exposure notification technology provided by Apple and Google which is safe and secure.

What can you do?

The more New Yorkers using the COVID Alert NY app, the more effective it will be as a tool to fight against COVID-19. We need your help to rally your community to download and use the app.

The COVID Alert NY app puts the power in the hands of New Yorkers to protect their neighbors, friends, family and community at large. Together, we can slow the spread of COVID-19.

We are asking you to put our COVID Alert NY Outreach Toolkit to work by using the resources contained as soon as possible. Your influence can make a big difference.

What resources are available?

We designed the COVID Alert NY Outreach Toolkit to make your support of app downloads as convenient as possible. The kit materials use communications channels your organization already has in place and include the following, all of which are ready to use with little to no work on your part:

- Social media posts with companion graphics

To learn more about COVID Alert NY, visit

<http://ny.gov/covidalerts>.

Thank you for partnering with us to mobilize your community to join our statewide efforts to stop the spread of COVID-19.

Drought Insurance for Forages

By A. Fay Benson, South Central New York Dairy and Field Crops Team



Pasture, Rangeland and Forage Insurance

Pasture Rangeland and Forage (PRF) crop insurance was developed for producers that produce forage for their animals or for sale. It covers the single peril of drought. The basis of this insurance is on data collected by the National Oceanic and Atmospheric Administration (NOAA). Their historical records for precipitation go back 50 years, which allows them to calculate the average rainfall for an area. When the rainfall for the period chosen by the producer falls below the average rainfall plus a deductible, an indemnity check is mailed to the producer. The sales closing date is November 15th 2020. This leaves farmers a short time to learn about the policy and decide whether it would help their farms. The following are some of the basics of the policy.

Steps to insuring with Pasture Rangeland and Forage

PRF is considered a "Group Policy" which means there are no requirements for a farm's actual production history which may require up to 5 years of verifiable records to establish production history. The first step when working with a crop insurance salesperson is to identify on a map the "grid" where the farm is located. Each grid is 0.25 degrees in latitude by 0.25 degrees in longitude or approximately 12 miles by 12 miles. Once the Grid Number for a farm is identified, the next steps are making the following choices:

- ⇒ Establishing an insured guarantee by using the Hay or Pasture county rates. Hay rates vary across the nation. For central NY, rates run between \$250 - \$300/acre and pasture rates are much less. Contact a Crop Insurance Agent for your county's actual rates. Multiplying the farm's forage acres times those rates will result in the guarantee. The higher the guarantee the higher the cost for insurance but also the higher the indemnity payments.
- ⇒ Choosing a "Productivity Factor" which allows a producer to raise or lower the county rates of the forage. The range is between 60% and 150%. For example, if my farm is certified organic I may wish to increase the value of the forage from \$285/acre to \$427/acre.
- ⇒ Choosing the interval months where the coverage is in place. Each interval is 2 months long and producers must choose 2 intervals to put their acreage into but can also choose to have coverage year round.
- ⇒ Selecting the "trigger" precipitation for the intervals chosen. The trigger is the percentage of precipitation the producer chooses that they will receive an indemnity. The NOAA average precipitation is designated as 100. If the final precipitation for the interval was listed as 80 that would mean the rainfall was 20% below the average rainfall. If it was 110 the precipitation would be 10% more than average.

Producers do not have to insure all acres. Insurance payments are determined by using NOAA CPC data for their grid(s) and index intervals that were chosen to insure. When the final grid index falls below the policyholder's "trigger grid index", the producer may receive an indemnity. This insurance coverage is for a single peril -- lack of precipitation. Coverage is based on the experience of the entire grid. It is not based on individual farms or ranches or specific weather stations in the general area.

My Farm Example:

- ⇒ I have 90 acres of pasture which can also be harvested for hay. I chose to cover it at the Hay Value so my guarantee would be: 90 acres X \$285/acre = \$25,650
- ⇒ I did not raise or lower the County Value so it remains at \$285
- ⇒ I wanted to have year round coverage so I put 25% of my guarantee into the May/June interval, and 15% in every other interval. The total was 100%.
- ⇒ I chose the highest "trigger" which was 90. If any of the intervals had a precipitation of less than 90% of average rainfall, I would have received an indemnity check.

The cost of this policy with no subsidy was \$2,335. The USDA pays a premium subsidy for most crop insurance as a way to encourage farmers to participate in their programs. For the policy I described above the subsidy was 51% which brought down my cost for the policy to \$1,144.

I have used PRF in the past. Most years I don't get many indemnity payments. The exception being the drought years when it helped the bottom line for my farm immensely. That is the goal of crop insurance, it's better to have a normal year where your crops yield well but on those years where weather just doesn't provide a farm with good growing conditions it's nice to have the insurance to help sleep at night and keep from experiencing a disaster.

Enrollment Deadline for the 2021 growing season is November 15th 2020

All transactions and policy contracts need to be completed by a certified Crop Insurance Agent. These agents are also an excellent source of information about this policy. To find an agent see the information below.

Find a List of Crop Insurance Agents Online at

<https://www.rma.usda.gov/tools/agent.html>

Closing Date to sign up for Insurance is November 15th. See an RMA Crop Insurance Agent Soon!

To contact Fay write to: afb3@cornell.edu or contact him in Cortland at (607) 391-2669



Human Health Concerns from Grain Dusts & Molds During Harvest

Part 1 By: John Shutske, Paul Esker, UW-Extension, Coop. Ext. and UW-Madison, College of Agricultural and Life Sciences Steve Kirkhorn, MD, Medical Director, National Farm Medicine Center – Marshfield Clinic

Exposure to Grain Dusts and Molds

If you produce corn, soybeans, or other crops, dust exposure while working is inevitable. Breathing in grain dust can affect the health and overall comfort for grain producers and others who work in the grain industry. Exposures can occur:

- ⇒ In the combine
- ⇒ While unloading
- ⇒ During drying and processing
- ⇒ In bins
- ⇒ In an area near any of the above situations
- ⇒ While grinding/mixing grain and other feed products

Grain dust is a complex soup that is made up of both organic and inorganic particles. Some of these can be inhaled easily, and depending on their size, can find their way deep into various parts of the respiratory system causing a range of adverse health effects. Grain dust is biologically active and is made up of a combination of:

- ⇒ Plant material
- ⇒ Mold and mold spores
- ⇒ Insect parts and excreta
- ⇒ Bacteria
- ⇒ Endotoxins (toxins contained in the cell walls of some bacteria)
- ⇒ Soil

Exposure to Small Concentrations During Normal Work

Most people will have some reaction to dusty conditions during grain harvest. Often, this will be a nuisance reaction or irritation, but in some cases, more problematic health problems are possible. Even in the cab of a combine, there is some level of dust (1 to 15 mg per cubic meter), and endotoxins (even with a sealed cab and proper air filtration) can reach limits that cause health issues and symptoms for some. At low levels that a healthy person might encounter during the harvest season, developing a cough might be common (intermittent with more phlegm when actual work exposure is happening). Other symptoms can include:

- ⇒ chest tightness and/or wheezing

- ⇒ slightly sore/irritated throat
- ⇒ nasal and eye irritation
- ⇒ a feeling of being stuffed up and congested all the time

Both chronic and acute bronchitis can also be common among those who handle lots of grain throughout the day as the main passages in the lungs get inflamed. Grain dust can also be a significant problem for those with asthma.

Exposure to Higher Concentrations of Grain Dust

Higher concentrations of dust exposure like you might encounter behind a combine, in a bin, or while unloading or processing grain are a concern especially this year with moldy and low test weight grain that might be more dusty and prone to damage. Moldy, damaged, dusty grain can cause significant issues for people. For many individuals, a heavy dose of dust even for a short time period can result in symptoms that occur a few (2 to 6) hours after exposure and may particularly noticeable after they've gone home at night. These symptoms can include:

- ⇒ Cough
- ⇒ Chest tightness
- ⇒ Malaise-general feeling of discomfort, illness or feeling "ill-at-ease"
- ⇒ Headache
- ⇒ Muscle Aches
- ⇒ Fever

Specific Reactions Caused by a "Massive" Exposure to Moldy Grain

Most people who have worked around grain will occasionally find themselves in a situation that is obviously very dusty. This "massive" exposure to a cloud of dust is something that should be avoided, though that is not always possible or practical. A massive exposure to moldy, dusty grain as well as other agricultural products (hay and silage in particular), even for a short period of time can result in two distinct medical conditions that look VERY similar and have the same cluster of symptoms outlined above (cough, chest tightness, etc.). These two conditions are "Farmer's Lung" or Hypersensitivity Pneumonitis (FHP) and "Organic Dust Toxic Syndrome" (ODTS).

(Continued on page 13)

New York State Forage Exchange Announced

Within New York State several regions have experienced drought conditions reducing the quality and quantity of forages produced for dairy and livestock production. To help agricultural producers locate forage to purchase, or for producers that have forage to sell, Cornell Cooperative Extension announces the NYS Forage Exchange website, found at <http://nysforageexchange.com>.

The NYS Forage Exchange provides a free system to match potential sellers and buyers of forage within New York State. Sellers can easily register within the system and then post the forage they have available to sell. Potential purchasers can browse the advertisements, and then contact the seller through email for additional information or to complete

purchase arrangements.

A screencast on how to use the NYS Forage Exchange can be found at <https://youtu.be/GNPjSIPLrxM> The video is also available on the Forage Exchange website.

This is a moderated website, so all ad submissions are reviewed for appropriateness before publication on the forage exchange website. The information provided is general and educational in nature. Employees of Cornell University and Cornell Cooperative Extension do not endorse or recommend any specific product or seller listed on this site.

For more information about Cornell Cooperative Extension, or to find your local Cooperative Extension office visit <http://cce.cornell.edu>.





Cornell Cooperative Extension

South Central NY Dairy and Field Crops Program

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If we can remove your name and address from our mailings, or add an email to receive digitally, please contact us at dg576@cornell.edu or call / leave a msg at 607-391-2662.

Thank you,

Your South Central Dairy and Field Crops Team

Upcoming Events Calendar

October 8, 15, 22, 29 6:30—8:00 pm	Design Your Succession Plan; Online, \$60 To register: https://reg.cce.cornell.edu/dsp_230
October 15 12:30 & 7:30 pm	"It's Always the Nutritionist's Fault!"; Online, Free To register: https://cornell.zoom.us/webinar/register/WN_fqXpgrO8QxWwFBmYsJd3kQ
November 3 & 10 7:00—9:00 pm	Price Risk Management for Dairy Farmers; Online, \$10/farm To register: https://tinyurl.com/PriceRiskMgtDairyFarmers
November 3 & 5 1:00—2:30 pm	Pro-Dairy Online Feeder School in English; Online, Free To register: https://ncrat.cce.cornell.edu/event.php?id=1343
November 5 & 19 1:00—2:00 pm	Legal Entities for Farm Businesses: LLCs and Trusts; Online, \$10/farm To register: https://scnydfc.cce.cornell.edu/event.php?id=1328
November 10 & 12 1:00—2:30 pm	Pro-Dairy Online Feeder School in Spanish; Online, Free To register: https://ncrat.cce.cornell.edu/event.php?id=1343