



North Country Ag Advisor

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Photo taken by Kelsey O'Shea

Cornell Cooperative Extension
North Country Regional Ag Team

North Country Regional Ag Team

Kitty O'Neil, PhD
Field Crops & Soils
315-854-1218
kao32@cornell.edu

Michael Hunter
Field Crops & Soils
315-788-8450
meh27@cornell.edu

Kimberley Morrill, PhD
Dairy Management
603-568-1404
kmm434@cornell.edu

Lindsay Ferlito
Dairy Management
607-592-0290
lc636@cornell.edu

Kelsey O'Shea
Ag Business Management
315-955-2795
kio3@cornell.edu

Tatum Langworthy
Sr. Admin Assistant
315-788-8450
tlm92@cornell.edu

Harvest NY

MacKenzie Waro
Livestock Processing and Marketing
607-287-1292
mlw55@cornell.edu

Lindsey Pashow
Ag Business and Marketing
518-569-3073
lep67@cornell.edu

County Ag Educators

Alyssa Couse
CCE of Jefferson Co.
315-788-8450
amc557@cornell.edu

Jessica Prosper
CCE of Franklin Co.
518-483-7403
jlr15@cornell.edu

Melissa Spence
CCE of Lewis Co.
315-376-5270
mms427@cornell.edu

Sara Bull
CCE of Clinton Co.
518-561-7450
slk95@cornell.edu

Billy Bullock
CCE of St. Lawrence Co.
315-379-9192
wrb93@cornell.edu

Carly Summers
CCE of Essex Co.
518-962-4810
cfs82@cornell.edu

North Country Ag Advisor

Cornell Cooperative Extension of
Clinton, Essex, Franklin,
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Counties

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Our Mission

"The North Country Regional Ag Team aims to improve the productivity and viability of agricultural industries, people and communities in Jefferson, Lewis, St. Lawrence, Franklin, Clinton, and Essex Counties by promoting productive, safe, economically and environmentally sustainable management practices, and by providing assistance to industry, government, and other agencies in evaluating the impact of public policies affecting the industry."

Field Crops and Soils

Alfalfa Weevils: The Early Alfalfa Pest

By Mike Hunter

May is the month to look for alfalfa weevils in your fields. Alfalfa weevils are not always a problem, but in some years can reduce forage yield and quality. In most years, by the time the population reaches any significant level the alfalfa is ready harvest and this serves as the management control method without the need to apply an insecticide. However, there are times when the development of the weevil is ahead of the alfalfa growth and insecticide treatments are warranted.

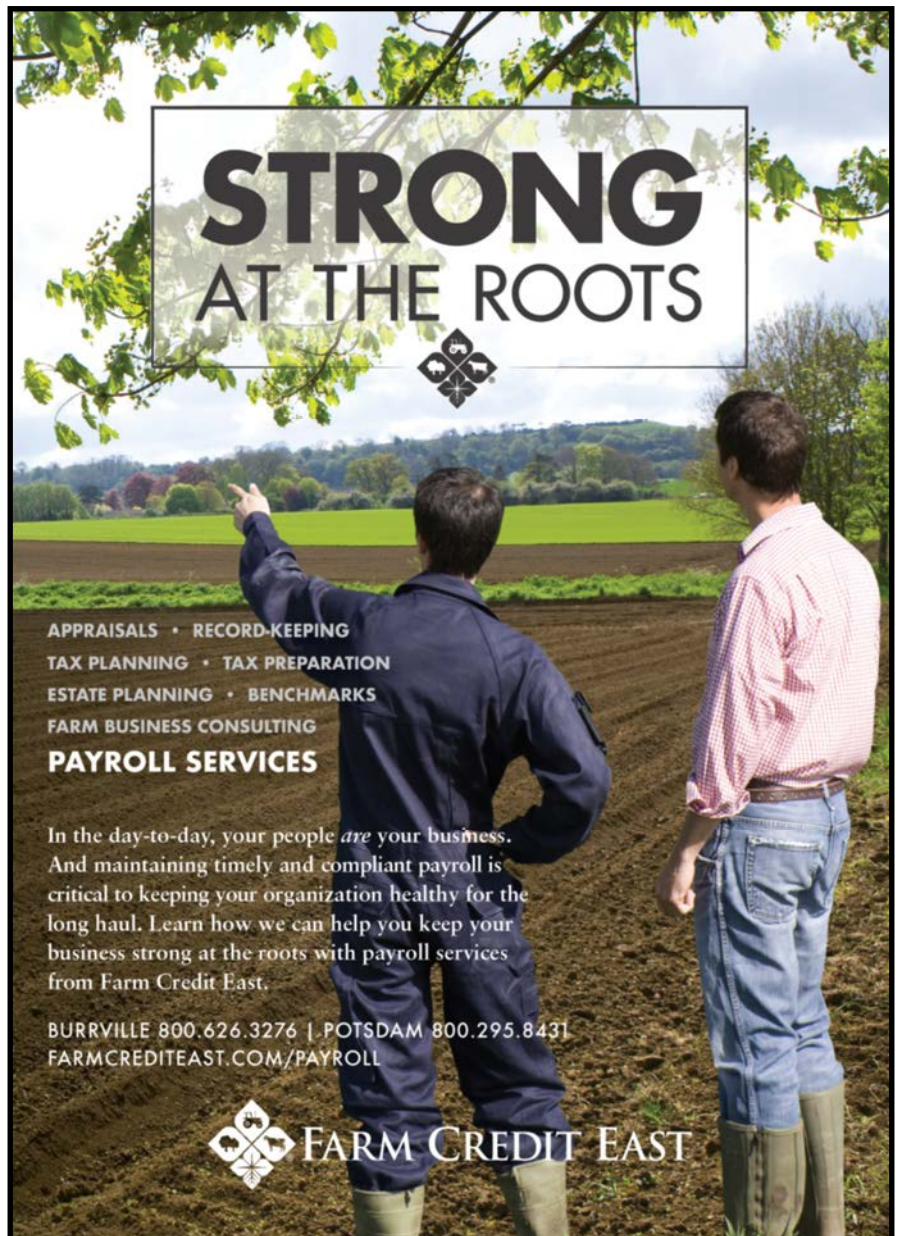
This alfalfa insect pest overwinters as adults in our area and shows up every year in the field. The adults are only about 3/16" long and are tan colored with a dark band down the center of the back. The larvae are light green with white stripes down their back with a dark brown head. The 1st instar larvae are 1/16" when they hatch and reach 3/8" when they are fully grown at the 4th instar stage.

The arrival and development of this pest is tied closely to temperatures. Using growing degree days (GDDs), we can predict the arrival of the alfalfa weevil. The females will lay their eggs in April and the eggs hatch after approximately 280 GDDs (Base 48°F) have accumulated. We can expect this to happen in mid to late May in NNY. The 4th instar larvae will coincide with the occurrence of 550 GDDs (Base 48°F). Begin scouting fields in early to mid-May and recheck the alfalfa every 7 days and if there is a potential problem developing in the field, scout more frequently. You should always check the alfalfa after first cutting to make sure the larvae are not present in the stubble and not feeding on the regrowth.

The proper method to scout for alfalfa weevils is to pick 50 alfalfa stems randomly throughout the field and look closely at the terminal buds and leaves. The feeding damage will appear as pinholes or skeletonized leaves. If 40% of the stems collected have feeding damage (count the stems with tip feeding, not the percentage of leaves with feeding damage) in the top three inches of the plant, control methods are necessary. The larger the larvae, the more they eat. An easy way to assess the size of the larvae is to put the collected alfalfa stems in a white bucket and shake the stems against the side to knock

the larvae off the stems. The 4th instar larvae will do 80% of the leaf feeding damage.

If the field is within 10 days of harvest, consider early cutting as the control method. If the damage occurs early and harvest is not an option or if harvest is delayed for some reason, apply an insecticide to control the alfalfa weevil. There are several registered insecticides for the control of alfalfa weevil. Remember that there are "days to harvest restrictions" with these insecticides and you should read the label carefully before application.



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Take Full Advantage of Sod and Manure Nitrogen Credits for 2018

By Kitty O'Neil

Spring is finally here! April brought generally cool and wet conditions. Longer-range May-June-July temperatures are predicted to be a little above average while precipitation is expected to be about normal or perhaps slightly above. There are almost no drought conditions across the entire Northeast. Warming weather means melting snow, lots of mud, and widespread anticipation of fields drained and warmed enough to begin fitting and planting. While we wait for the snow and water to drain away, it's a good time to plan effective nitrogen management strategies for spring plantings and perennial forage crops.

To minimize your 2018 fertilizer bill, take maximum advantage of all other sources of nutrients, especially nitrogen. Nitrogen (N) is the plant nutrient that is often most limiting to productive, efficient, and profitable non-legume crops. For this reason, N fertilizers properly applied to crops typically results in substantial economic return to farmers. When N applied to the soil exceeds crop requirements, however, excess N can be lost to ground or surface water. Fertilizer is expensive, and no one wants to lose nutrients to the environment, so it's a good idea to accurately estimate all N contributions when determining the optimum N fertilizer rate. Typically, a non-legume crop takes up N from 3 sources: soil organic matter, organic materials (manure, compost, tilled-in cover crops or sods, plant residues from a previous crop), and inorganic fertilizer N. To apply enough inorganic fertilizer N to optimize economic returns, without over-application, farmers must estimate how much N will be supplied to the crop from soil organic matter and from other organic sources. It may seem like a guess to many, but we have the benefit of lots of research to estimate typical contributions from different sources. Tables of fertilizer recommendations for various crops are part of the **2018 Cornell Guide for Integrated Field Crop Management** and accurately calculated rates are included on most soil test reports.

Soil Organic Matter: Typical soil organic matter N contribution ranges from 40 to 80 pounds of N per acre per year. This background N is dependent on soil type. Specific estimates for each soil type and drainage classification are listed in the **Cornell Soils Database** and are used to calculate fertility recommendations included on soil test reports from Cornell and DairyOne labs.

Sods: A first year row crop after a sod can take up 75 to 165 pounds of N per acre depending on the type of sod. A grass

sod can supply 75 to 100 pounds of N while a sod containing all or mostly legume will supply up to 150 pounds N per acre in the first year. The sod will continue to supply N, but less, in the 2nd and 3rd years after it is turned in. See Table 1.

Table 1: Expected nitrogen available to corn from sods in years following sod incorporation.

| Proportion of Legume in Sod | Total N pool (lbs/acre) | Available N (lbs/acre) | | |
|-----------------------------|-------------------------|------------------------|--------|--------|
| | | Year 1 | Year 2 | Year 3 |
| 0% | 150 | 83 | 18 | 8 |
| 1-25% | 200 | 110 | 24 | 10 |
| 26-50% | 250 | 138 | 30 | 13 |
| ≥50% | 300 | 165 | 36 | 15 |

Livestock Manure: Manure contains 2 forms of N, ammonia and organic, and a manure analysis will reveal exactly how much of each is contained per ton or per 1000 gallons. Ammonia is a form of inorganic N which is unstable and easily lost. Losses of ammonia N begin immediately when manure is applied and can be minimized by maximizing its contact with soil by incorporating it without delay. When incorporated immediately, ammonia N is fully captured in the soil and the full amount should be credited to subsequent fertilizer applications. As incorporation of manure is delayed, more ammonia N is lost. Incorporation delayed more than 5 days results in complete loss of ammonia N. Manure which is surface applied in the fall or winter also loses 100% of ammonia N. In these last 2 cases, no credit should be given for manure ammonia N. For all other cases, simply multiply the amount of ammonia N applied per acre by the percentage availability listed in Table 2 below.

Table 2: Availability of ammonia nitrogen from manure to a corn crop.

| Manure application method | Ammonia N utilized by the current crop (%) |
|--|--|
| Fall or winter application | 0 |
| Pre-plant spring application | 65 |
| Incorporated within 1 day after application | 53 |
| Incorporated within 2 days after application | 41 |
| Incorporated within 3 days after application | 29 |
| Incorporated within 4 days after application | 17 |
| Incorporated within 5 days or more after application | 0 |
| In-season side-dress application | 100 |

Animal manures also contain organic N. Organic N is stable in the soil and is slowly mineralized over 3 growing seasons to provide N to growing crops. Rate of organic N availability to growing plants depends on type of manure and the dry matter content of the manure. See Table 3 below.

Table 3: Availability of organic nitrogen from manure to a corn crop.

| | | Availability of N from the total amount of organic N applied | | | |
|---------|---------------|--|-----------|-----------|-----------|
| | | ----- Time of Application ----- | | | |
| Source | Dry Matter, % | Year 1, % | Year 2, % | Year 3, % | Year 4, % |
| Cattle | <18 | 35 | 12 | 5 | 0 |
| | ≥18 | 25 | 12 | 5 | 0 |
| Poultry | <18 | 55 | 12 | 5 | 0 |
| | ≥18 | 55 | 12 | 5 | 0 |
| Sheep | <18 | 35 | 12 | 5 | 0 |
| | ≥18 | 25 | 12 | 5 | 0 |
| Swine | <18 | 35 | 12 | 5 | 0 |
| | ≥18 | 25 | 12 | 5 | 0 |
| Horses | <18 | 30 | 12 | 5 | 0 |
| | ≥18 | 25 | 12 | 5 | 0 |

Here's an example of fertilizer N requirement for corn on a tiled Grenville soil (soil group IV, 75% N use efficiency, corn yield potential = 140 bu grain or 24 tons silage) for 2018:

| | | |
|--|----------|------------------------|
| Grenville corn grain yield potential = 140 bushels | x 1.2 = | 168 lbs N / acre |
| Subtract Soil Organic Matter N (from soils database) | | - 75 lbs N / acre |
| Subtract Manure N (5000 gal/acre dairy, preplant every spring) | | - 65 lbs N / acre |
| Subtract Sod N (grass sod turned in in 2016) | | - 8 lbs N / acre |
| N remaining, needed from fertilizer sources | | 20 lbs N / acre |
| Including N use efficiency | ÷ 0.75 = | 27 lbs N / acre |

Here's another example of fertilizer N requirement for corn on an undrained Hailesboro soil (soil group III, 65% N use efficiency, corn yield potential = 110 bu grain or 19 tons silage) for 2018:

| | | |
|--|----------|------------------------|
| Hailesboro corn grain yield potential = 110 bushels | x 1.2 = | 132 lbs N / acre |
| Subtract Soil Organic Matter N (from soils database) | | - 65 lbs N / acre |
| Subtract Manure N (none applied in past 3 years) | | - 0 lbs N / acre |
| Subtract Sod N (20% alfalfa sod plowed down in 2017) | | - 24 lbs N / acre |
| N remaining, needed from fertilizer sources | | 43 lbs N / acre |
| Including N use efficiency | ÷ 0.65 = | 66 lbs N / acre |

Reduce overall fertilizer N purchases by properly considering N contributions from soil organic matter, sod, and manure. Accurate calculations of fertilizer N needs can be calculated for any field using some basic data. Soil type must be known so that the soils database info may be properly accessed. Cropping history will indicate time since a sod was tilled in and manure application records and manure analysis will lead to accurate manure N contributions. For fields with ample fertilizer requirements, efficiency of N fertilizer uptake may be improved further by splitting the total N required into a preplant and a sidedress application to reduce risk of leaching losses with potential heavy rainfall.

Additional resources:

2018 Cornell Guide for Integrated Field Crop Management. Cornell University Cooperative Extension. <https://store.cornell.edu/p-199236-2018-cornell-guide-for-integrated-field-crop-management.aspx>

Cornell Soils Database. 2003. Cornell Nutrient Management Spear Program. http://nmsp.cals.cornell.edu/publications/tables/soils_database.pdf

Nitrogen Credits from Sods. 2003. Cornell Nutrient Management Spear Program. http://nmsp.cals.cornell.edu/publications/tables/N_credits_sods.pdf

Unstable inorganic N (ammonia) credits from manure. 2003. Cornell Nutrient Management Spear Program. http://nmsp.cals.cornell.edu/publications/tables/N_credits_manure.pdf

Decay series for organic N from manure. 2003. Cornell Nutrient Management Spear Program. http://nmsp.cals.cornell.edu/publications/tables/N_decay_manure.pdf

Avoiding High Pressure Injection Injuries from Hydraulic Lines

By James Carrabba

Agricultural Safety Specialist

The New York Center for Agricultural Medicine & Health - NYCAMH

There are many dangers present on tractors and farm machinery. In addition to the obvious hazards such as tractor rollovers, tractor runovers, and machinery entanglements, there is another hazard present that farm equipment operators may not always be aware of. That is the danger of high pressure injection injury from a hydraulic line. Hydraulic systems are found on a lot of agricultural equipment. The hydraulic system lifts implements, changes the position of machinery components, powers hydraulic motors, and many other tasks. To do this, the hydraulic system places the hydraulic fluid under great pressure. In most agricultural equipment, the hydraulic system operates at 2,000 pounds per square inch of pressure or greater. If a pinhole leak should develop in a line or hose, this can be a very dangerous situation. This can also occur with diesel fuel lines.

One of the more common injuries with hydraulic systems is being contacted by fluid forced out of a pinhole leak. A pinhole leak may be fine enough that you cannot see it. The operator may only see an oily spot where the leak is occurring. If they run their hand over the leak while the system is under pressure, the fluid can easily be injected into their skin through the pinhole leak. When this happens, the victim might only feel a stinging sensation and may not be too concerned right away. Usually within a few hours, the wound will be much worse. Having the hydraulic fluid injected into your body causes a gangrenous type injury. If injected into the bloodstream it will move rapidly through the body. This type of injury can become very serious or fatal if not treated promptly. In many cases hands or limbs had to be amputated because the victim did not obtain medical treatment promptly, or did not receive the proper medical treatment. A doctor that is familiar with treatment of this type of injury must surgically remove the fluid from the victim's body. If you should ever suffer a hydraulic injection injury, get to an emergency room or trauma center right away and bring the Material Safety Data Sheet for the injected fluid with you.

Here are some steps you can take to reduce the hazard of a high pressure injection injury from hydraulic lines:

- Remember that the leak may be small enough that you cannot see it, you might only see the fluid that is accumulating out of the leak
- Never use your hands to find suspected hydraulic leaks
- Heavy gloves and heavy clothing will not protect you from a high pressure pinhole leak
- Never get close to any lines you suspect may have a leak
- Use the far end of a long object, such as a board, or cardboard to find the path of a suspected leak
- Wear ANSI Z87.1 rated safety eyewear if performing these tasks

- Shut off the engine and relieve pressure on the hydraulic lines before disconnecting, replacing or servicing hydraulic lines. Bring the machine to a neutral energy state
- While the machine is off, visually check the lines for signs of wear. Replace any hydraulic lines that look worn, cracked, or broken
- Always make sure that replacement hoses are rated for the pressure they will be under

Share this article with your employees, coworkers or family members. Make sure everyone who works at your business knows about the dangers of high pressure injection injury. As always, NYCAMH is available to provide safety training at New York farms on hydraulic safety or any other agricultural safety topic. These services are offered at no cost by a grant from the New York State Department of Labor Hazard Abatement Board. For more information, please contact Jim Carrabba, Agricultural Safety Specialist at (800) 343-7527 extension 239, or e-mail jcarrabba@nycamh.com. NYCAMH, a program of Bassett Healthcare Network, is enhancing agricultural and rural health by preventing and treating occupational injury and illness.

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Dairy

Milk Quality – The Impact of Your Milking Routine

By Kim Morrill

There are four primary opportunity areas when it comes to impacting milk quality and mastitis. These include: the cow, bacteria, equipment, and milking routine. Of these four areas of opportunity, which, in your mind, do you have the most control over and which has the most variation? Milking routine is the area we can control the most and potentially introduce the most variation if multiple people are milking the cows. Without an optimized and standardized milking routine, it doesn't matter what you have for equipment and technology. People can make or break any equipment, therefore milking routines are the most important. If the milking routine is not the same from one milker to the next, or one shift to the next, then how can you make improvements with an unstable variable? The goal of a milking procedure is to keep a quiet and controlled manner that results in calm cows. Milking protocols should be written and have a consistent definition of routines involved in the milking procedure. Everyone should be doing the same thing.

Step 1. Often overlooked, the first and most important step of the milking routine is cow handling/movement. The milking routine starts with the first interaction with the cow. This could be getting them up in a tiestall or moving them from the freestall to the holding pen. The interaction with the cow will set the tone for the rest of milking. Do you want calm cows that have a good milk let down, or do you want cows that are high strung, "dance" while you put the machine on, and have a slow milk let down? Yelling, jostled movements, and other negative stockmanship practices have a negative impact on stress and the milk let-down reflex. Calm and quiet is key.

Step 2. Movement into the parlor and udder preparation. This step can be variable across herds, but needs to be consistent within the herd. What is your protocol? It should include pre-dipping, fore-stripping, and drying of the teat. This step should allow for complete pre-dip coverage of all four teats with a 30 second contact time.

Step 3. Timely attachment and proper alignment of the milking unit. To achieve optimal stimulation of the milk let-down reflex, the milking unit should be attached within 60 to 90 seconds of prep. Every



milking unit should be attached to a clean, dry, well-stimulated teat.

Step 4. Milk let-down, unit removal, and post dipping. The goal of this step is to milk the cows as quickly and efficiently as possible while minimizing any teat damage that can be caused by overmilking (high vacuum but little milk flow). Further, the time immediately following milking (20 to 30 minutes) is crucial to controlling bacterial entry into the teat as the teat sphincter takes time to close post-milking. This is why post-dip treatments play an important role in the milking routine, and also why cows should be encouraged to stay standing for 30 minutes post-milking (by having fresh feed at the bunk when cows return from the parlor).

Your milking procedure should be written and presented to all employees in their primary language. All milkers should be trained to the protocol and routinely observed.

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Are you ready to have a different conversation around farm and food? Join us at Table Talk, June 12-13.

Do you need new tools to discuss hormones, GMOs, animal welfare, sustainability, food waste, and other emotional issues impacting the food conversation?

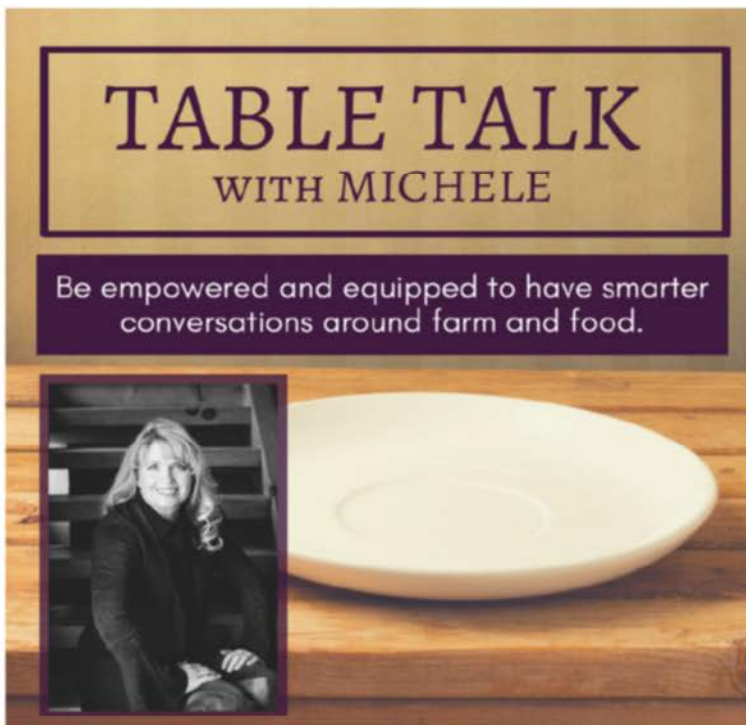
"Table Talk" is a customized training that will equip you to have smarter conversations around farm and food. Michele Payn has developed a NEW two-day intensive program for a small group. She's designed it to be casual and personal to help those in agriculture who really want to make advocacy authentic and take their efforts to a new level.

- Do you want to gain specific skills in understanding consumer perspective to grow the farm and food conversation?
- Are you looking for a greater impact in connecting people around the plate?
- Would you love to have an action plan to go beyond the choir?
- Are you an advanced "advocate" wanting specific and actionable strategies to increase your influence?

Table Talk has been created to empower people in agriculture. This intensive training is truly unique — 12 people will gather around the table in Syracuse, June 12-13, focused on smarter communications. Certified Speaking Professional Michele Payn has spent 17 years gathering best practices, powerful insights, resources, and techniques to equip leaders in agriculture.

You'll get personal coaching, a dozen hours of interactive training with case studies, both of Michele's books (and the insight gleaned from writing them), and answers to your burning questions. You will walk away with an action plan built for you and your situation. And you'll be better equipped to have the conversation around the toughest issues facing farm and food, plus ways to go beyond the choir. You will be gaining insight from consumers, asking questions around the table, and building tools to take home with some of the best minds in the business.

Join Michele at the table. Register today at <https://causematters.com/tabletalktraining/ny/> - registration increases \$50 after May 25.



Dos and Don'ts for Dairy Farmers When Facing Financial Difficulty

Prepared by Wayne A. Knoblauch, Professor Cornell University

Dos

1. Complete a production and financial management analysis of your business for 2017. Determine strengths, but most importantly, areas for improvement with an immediate response and improvement in cash flow.
2. Complete a profitability and cash flow projection. For example, do a partial budget of the expected impacts of any changes made to improve the business.
3. Meet with your lender and share your financial management analysis and cash flow projections. Communicate with your lender often and provide periodic updates regarding your financial situation.
4. Continually review and update cash projections and partial budgets. Cash flow management is the key to surviving difficult economic times.
5. If you have past due balances, meet with suppliers to develop payment arrangements.
6. Effectively utilize farm-produced feeds, especially forages.
7. Test all farm-grown forages and feed for nutrient availability. Evaluate the most cost effective commodities to purchase when feeding balanced rations, especially to early lactation cows.
8. Treat disease outbreaks, such as mastitis, before they become worse.
9. Be an astute purchaser of inputs.
10. Examine family living to see if expenses can be reduced.
11. Maintain minimal inventory, cull unprofitable cows, and buy feed as needed. If you have extra dairy replacements, consider selling them. When selling animals, remember to consult your tax preparer concerning associated tax liabilities.
12. Sell nonessential capital items, including machinery and equipment, that is not needed to operate the business. Consider selling land not essential to the business, including timber. Remember to consult your tax preparer concerning tax liabilities of a sale.
13. Examine debt for possible benefits of restructuring or alternative financing.
14. Perform tasks in a timely fashion, yet get enough rest. Sleep deprivation can interfere with task performance and judgment.
15. Consider off-farm work by all family members.
16. Communicate current financial situation often with management team/family members. Seek and welcome their suggestions and involve them in key financial decisions.
17. Adopt new technologies only after careful study.
18. Monitor the financial health of those who purchase your farm products. They may also be under severe financial pressure in this economic period.
19. Seek management advice and analysis assistance early from Cornell Cooperative Extension, consultants, FarmNet, and others.
20. Seek personal counseling and advice from close friends, clergy, FarmNet, medical professionals, and others.
21. Routinely test manure for nutrient content. Employ modern soil testing technology to minimize purchased crop nutrients.
22. Evaluate risk management tools such as crop insurance, Livestock Gross Margin, and the Margin Protection Program in order to minimize production and price risk.

23. Evaluate business arrangements with other farms that have the potential to reduce costs.
24. Forward contract inputs such as feed, fuel, and other supplies if you can lock in a profit.
25. Obtain price quotes from multiple suppliers for inputs such as feed, fuel, and other necessities.

Don'ts

1. Make decisions that will cause the problem to be worse a week, month, or year down the road.
2. Continue the same practices simply because you've always done it that way.
3. Neglect needed accounting tasks because there isn't time right now.
4. Utilize farm-produced feeds so rapidly that they are used up without a replacement plan.
5. Reduce purchased feed just to save money.
6. Purchase products that promise to be a cure-all, unless you have hard data and experiences of others to confirm.
7. Make capital investments to reduce tax liability or because "it is a good buy."
8. Borrow money unless the profitability of the farm is reasonably expected to increase in order to provide for repayment.
9. Neglect the details such as cleaning and maintaining equipment, communicating with and managing labor, detecting heats, etc.
10. Use alcohol to excess. Alcohol and other drugs can make a tough situation even worse.
11. Assume a management strategy that worked for one farm will be effective on yours.

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Dairy Margin Protection Program: 2018 Updates

Adapted from the FSA Service Bulletin, April 2018

USDA's Farm Service Agency encourages dairy producers to consider enrolling in the new and improved **Margin Protection Program for Dairy** (MPP-Dairy), which will provide better protections for dairy producers from shifting milk and feed prices. With changes authorized under the Bipartisan Budget Act of 2018, the U.S. Department of Agriculture's (USDA) Farm Service Agency (FSA) has set the enrollment period to run from April 9, 2018, to June 1, 2018. The program protects dairy producers by paying them when the difference between the national all-milk price and the national average feed cost (the margin) falls below a certain dollar amount elected by the producer.

Changes include:

- Calculations of the margin period is monthly rather than bi-monthly.
- Covered production is increased to 5 million pounds on the Tier 1 premium schedule, and premium rates for Tier 1 are substantially lowered.
- An exemption from paying an administrative fee for limited resource, beginning, veteran, and disadvantaged producers. Dairy operators enrolled in the previous 2018 enrollment period that qualify for this exemption under the new provisions may request a refund.

Dairy producers must make a new coverage election for 2018, even if you enrolled during the previous 2018 signup period. Coverage elections made for 2018 will be retroactive to January 1, 2018. All dairy operations desiring coverage must sign up during the enrollment period and submit an appropriate form (CCC-782), and dairy operations may still "opt out" by not submitting a form. All outstanding balances for 2017 and prior years must be paid in full before 2018 coverage is approved. Dairy producers can participate in FSA's MPP-Dairy or the Risk Management Agency's Livestock Gross Margin Insurance Plan for Dairy Cattle (LGM-Dairy), but not both.

For more information on the updates to MPP, watch the webinar presented by Andrew Novaković, Cornell University, and Mark Stephenson, University of Wisconsin, or visit the MPP Decision Tool site:

<https://www.farmcrediteast.com/knowledge-exchange/Webinars/inside-2018-mpp>

<https://dairymarkets.org/MPP/Tool/>

Becky Worley
Marketing Coordinator

Office (740) 382-5701 ext. 233

Toll Free (800) 622-4877

Direct Dial: 740-223-3869

421 Leader Street

Marion, OH 43302

worleyb@nachurs.com

visit us online:

www.nachurs.com

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Fireside Chat - Managing During A Milk Price Fall

Prepared by Wayne A. Knoblauch, Professor Cornell University

- 1) We have had dramatic milk price declines many times in recent dairy history. The decline of the mid-1980s, in the early 1990s and 2009, being the most serious in memory. Some dairy farmers will experience real pain and there could also be some big winners. I am going to focus on the pain component of the price decline.
- 2) Significantly lower milk prices, and therefore dairy farm profits, combined with lower asset values, translating into reduced borrowing capacity, pose a serious threat to the survival of many dairy farms. This current situation is different from the past in that the total economy is in difficulty. As a result, we may be facing a more prolonged period of low prices.
- 3) What should a dairy farmer consider and what actions should be taken in times of very low milk prices? Let's apply our proven management principles and economic theory to this situation. Economic theory tells us that we need to look at the individual farm situation using both profit and cash flow analysis.

PROFIT

NOW: If cash receipts cover cash expenses, then continue to operate the dairy as long as there is some contribution to overhead. Cash expenses include items such as hired labor, veterinary fees and medicine, utilities, interest, and purchased feed. Farm produced feed/forage is now, in my opinion, a fixed or sunk cost and should not be included as a cost in the **NOW** analysis.

If cash receipts do not cover cash costs, then cutting all costs possible without deteriorating the net profit margin, selling unprofitable cows, or making other changes to the cost and revenue stream must be implemented. There is no time to lose to make changes to the business.

PLANTING TIME: We must now include crop production costs as a cash cost in our analysis. To continue in production, the expected milk price over the next year should be such that it will cover all cash costs and generate some contribution to fixed costs. If that is not the result, then the **NOW** strategies previously discussed, as well as some longer term changes, should be adopted if they can be expected to reverse this scenario.

NEXT TWO OR THREE YEARS: To continue in production, the expected milk price will need to cover the cost of production, including the value of operator labor and management. Remember, profitability is the key to long run business survival.

CASH FLOW

NOW: Consider these options if you are covering cash costs, but cannot cash flow from operating. Refinancing, making interest-only payments, selling non-productive assets, borrowing, improving the business, etc. should all be considered. Only consider improving cash flow if you can expect to have a profitable business after planting time. If you are not covering cash costs, and cannot make changes to correct that situation, then liquidation or eating equity are your options. Eat equity only if there is a promise of significantly better days ahead. Remember, cash flow is the key to short run business survival. Note: eating equity simply means that the net worth or equity of your business goes down as a result of continuing to operate the business.

PLANTING TIME: If you can project to cover cash costs, including those associated with growing crops, then refinancing, making interest-only payments, selling non-productive assets, borrowing, etc. should be considered. Only consider improving cash flow if you can expect to have a profitable business after planting time and be able to cover scheduled debt payments and provide for family living. If you are not covering cash costs, and cannot make changes to correct that situation, then liquidation or eating equity are the options. Keep in mind that full or partial liquidation and eating equity can have serious long term consequences on your business.

NEXT TWO OR THREE YEARS: A business must be profitable to be sustainable in the long run. If you cannot project profits over the next few years, then you likely will be eating equity. The only exception is if asset values increase dramatically and your strategy is to wait to sell assets later at higher prices; however, you then become a speculator, not a business manager.

This crisis will also pass, as have others before; however, this current crisis will be very painful for many farmers. These trying times will severely stretch and test the management skills of all dairy farmers. We should not react out of fear, nor not react at all. Rather, we should do a careful analysis of where our business is and where we want it to go. Then do an analysis of the expected impacts of possible changes on both profit and cash flow before taking action. While difficult, we should also view this as a time to employ our financial management skills. Many professionals are available to help. Cornell Cooperative Extension, FarmNet consultants, as well as others can give assistance, identify alternatives, and provide an objective outside view of available options.

Providing Adequate Ventilation and Heat Abatement on Dairies

By Lindsay Ferlito

As I'm writing this, it's a snowy April day, but I'm hoping spring is just around the corner and therefore it's a good time to review barn ventilation and heat abatement systems. When was the last time you remember cleaning your fans? If you can't remember, that's usually a good sign that it's time to clean them again. An important thing to remember with your ventilation and cow cooling systems is to maintain them and keep them clean. Being dirty and filled with dust and debris can reduce a fan's capacity by up to 40% (especially if the dirt/build up is on the louvers or fan guards). You are still paying the same electric bill, but not getting the benefits. A great time to clean cow cooling fans is in the late winter or very early spring as you are checking them and making sure they are ready to go for spring and summer. For fans that run all year for ventilation systems, you should clean them at least 2 to 3 times per year.

Barn ventilation can be achieved either mechanically (fans forcing air movement) and/or naturally (wind moving the air). Ventilation systems should be designed to accommodate all four seasons, recognizing the requirements vary from warm to cold seasons. For dairy barns, the recommended air changes per hour (ACH) (the number of times the barn volume of air is exchanged per hour) is 4 for the winter, 15-20 for transition seasons, and 40-60 in the summer. Another recommendation is to provide 1,000 cfm (cubic feet per minute) of fresh air to each mature cow in the warm months.

The majority of freestall barns in the North Country are built with natural ventilation and sometimes with chimneys/roof exhaust fans to help move air. To increase the airflow into a naturally ventilated barn, it is recommended that the barn sidewall height is 12-14 feet and curtains are installed to allow more or less air into the barn, the end walls of the barn should have openings (doors) that can allow more air in during warmer months, and the barn should be located away from other buildings or wind obstructions (larger buildings require farther than just 100 feet).

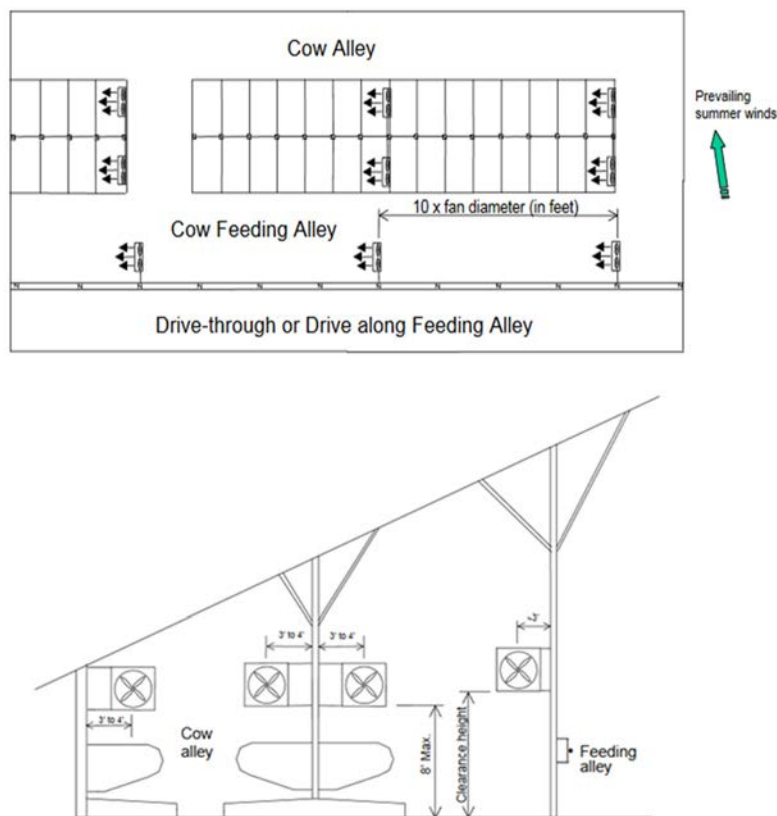
Adequate ventilation will help keep the barn air clean and fresh, while cow cooling systems will help prevent negative impacts of heat stress. The priority areas for heat abatement are: the holding area, the maternity pen and pre-fresh pens, the fresh pen and lactating pens, and then other areas of the barn.

The most common ways to cool cows are fans over the feedbunk, stalls, and holding area, and sometimes misters or sprinklers in the feedbunk and holding area. It's

recommended to have air speeds of 400-600 fpm over the cows, recognizing that air flow will be blocked/reduced by physical obstructions such as cows. Remember that cows will start to show signs of heat stress at a Temperature Humidity Index of only 68, which means fans need to be turned on *before* that point.

Providing adequate heat abatement throughout lactation and the dry period will help reduce or prevent drops in feed intake, drops in production, negative impacts on reproduction, lameness, and health issues related to heat stress. Providing heat abatement to dry cows can also have an impact on the next lactation (cooled dry cows make on average 11/lbs/d more milk in the next lactation) and the unborn calf (cooled dams have larger calves that maintain this larger size through weaning, and they have better IgG absorption).

Overall, a barn with good ventilation and adequate cow cooling will help keep cows comfortable, healthy, and productive, and help the farm be more profitable today and in the future.



Diagrams of cow cooling fan placement in a freestall barn (Curt Gooch, Cornell PRO-DAIRY).

Farm Business Management



United States
Department

A Risk Management Agency Fact Sheet

Whole-Farm Revenue Protection

Revised August 2017

Whole-Farm Revenue Protection

Whole-Farm Revenue Protection (WFRP) provides a risk management safety net for all commodities on the farm under one insurance policy. This insurance plan is tailored for any farm with up to \$8.5 million in insured revenue, including farms with specialty or organic commodities (both crops and livestock), or those marketing to local, regional, farm-identity preserved, specialty, or direct markets.

Availability

WFRP is available in all counties in all 50 states.

Causes of Loss

WFRP provides protection against the loss of insured revenue due to an unavoidable natural cause of loss which occurs during the insurance period and will also provide carryover loss coverage if you are insured the following year. See the policy for a list of covered causes of loss.

Important Dates

Sales Closing, Cancellation, & Termination Dates

Calendar Year and Early Fiscal Year Filers.....
January 31, February 28, or March 15 (by county)
Late Fiscal Year Filers.....November 20

Revised Farm Operation Report Dates

All FilersJuly 15

Contract Change DateAugust 31

Talk to your crop insurance agent about the dates that apply for your county.

Insurance Period

Coverage is provided for the duration of the producer's tax year (the insurance period). The insurance period is a calendar year if taxes are filed by calendar year, or a fiscal year if taxes are filed by fiscal year.

Reporting Requirements

Revenue Losses - You must submit a notice of loss within 72 hours after discovery that revenue for the policy year could be below the insured revenue. Inspections may be required for losses. You must have filed farm taxes for the policy year before any claim can be made. You must make claims no later than 60 days after the date you submit farm tax forms to the Internal Revenue Service (IRS). Claim payments for a revenue loss under WFRP are paid within 30 days after the determination of a payment due as long as you are in compliance with the policy.

Coverage

WFRP protects your farm against the loss of farm revenue that you earn or expect to earn from:

- Commodities you produce during the insurance period, whether they are sold or not;
- Commodities you buy for resale during the insurance period; and
- All commodities on the farm except timber, forest, and forest products; and animals for sport, show, or pets.

The policy also provides replant coverage:

- For annual crops, except those covered by another Federal crop insurance policy;
- Equal to the cost of replanting up to a maximum of 20 percent of the expected revenue; and
- When 20 percent or 20 acres of the crop needs to be replanted.

The approved revenue amount is determined on your Farm Operation Report and is the lower of the expected revenue or your whole-farm historic average revenue. Coverage levels range from 50 percent to 85 percent. Catastrophic Risk Protection (CAT) coverage is not available.

The number of commodities produced on the farm are counted using a calculation that determines:

- If the farm has the diversification needed to qualify for the 80 and 85 percent coverage levels (there is a 3 commodity requirement);
- The amount of premium rate discount you will receive due to farm diversification; and
- The subsidy amount. Farms with 2 or more commodities will receive a whole-farm subsidy and farms with one commodity will receive a basic subsidy.

You can buy WFRP alone or with other buy-up level (additional coverage) Federal crop insurance policies. When you buy WFRP with another Federal crop insurance policy, the WFRP premium is reduced due to the coverage provided by the other policy. If you have other Federal crop insurance policies at catastrophic coverage levels you do not qualify for WFRP.

This fact sheet gives only a general overview of the crop insurance program and is not a complete policy. For further information and an evaluation of your risk management needs, contact a crop insurance agent.

WFRP 'insured revenue' is the total amount of insurance coverage provided by this policy. Your crop insurance agent and approved insurance provider determine the farm's 'approved revenue' using the following information:

- Whole-Farm History Report;
- Farm Operation Report;
- Information regarding growth of the farm; and
- The coverage level you choose (50-85 percent) multiplied by the approved revenue is the insured revenue amount.

| Coverage Level | Commodity Count (Minimum Required) | Maximum Farm Approved Revenue |
|----------------|------------------------------------|-------------------------------|
| 85 | 3 | \$10,000,000 |
| 80 | 3 | \$10,625,000 |
| 75 | 1 | \$11,333,333 |
| 70 | 1 | \$12,142,857 |
| 65 | 1 | \$13,067,923 |
| 60 | 1 | \$14,166,167 |
| 55 | 1 | \$15,454,545 |
| 50 | 1 | \$17,000,000 |

The Commodity Count in the table above is a measure of the farm's diversification, determined by the policy. The calculation determines the minimum proportion of revenue a commodity must contribute to the farm to be considered a commodity for WFRP. A farm's revenue would be evenly distributed if an equal percentage of revenue came from each commodity produced, for example, 25 percent from corn, 25 percent from soybeans, 25 percent from spinach, and 25 percent from carrots. The minimum proportion to be considered a countable commodity is one-third of that amount. In this example, for corn, soybeans, spinach, or carrots to each count, each commodity would have to make up at least 8.3 percent of the total revenue of the farm to count as a commodity under WFRP. Commodities with revenue below the minimum will be grouped together in order to recognize farm diversification (this will make the commodity count higher). The Maximum Farm Approved Revenue represents the maximum approved revenue for a farm to be eligible for WFRP given the \$8.5 million maximum liability allowed.

Eligibility

Eligibility for WFRP coverage requires you to:

- Be eligible to receive Federal benefits;

- Be a U.S. citizen or resident;
- File either a Schedule F tax form or other farm tax form that can be converted to a Substitute Schedule F for a specified number of years (see information you provide below);
- Have no more than \$8.5 million in insured revenue, which is the farm revenue allowed to be insured under the policy multiplied by the coverage level you select (see table above)
- Have no more than \$1 million expected revenue from animals and animal products;
- Have no more than \$1 million from greenhouse and nursery;
- Have no more than 50 percent of total revenue from commodities purchased for resale;
- Have 'buy-up' coverage levels on any Federal crop insurance plans you choose in addition to the WFRP insurance plan.
- Meet the diversification requirements of the policy by having two or more commodities if a commodity you are raising has revenue protection or actual revenue history insurance available; and
- Meet the diversification requirements of the policy by having two or more commodities if there are potatoes on the farm.

Information You Provide

There are certain documents you must provide to your crop insurance agent to get Whole-Farm Revenue Protection insurance. For the Whole-Farm History Report you must provide:

- 5 consecutive years of Schedule F or other farm tax forms (it must be possible to complete a Substitute Schedule F form if you filed farm tax forms other than Schedule F). For the 2018 policy year, tax forms from 2012-2016 are required except:
 - ◊ If you qualify as a Beginning Farmer or Rancher (BFR) under our procedures, you may qualify with 3 consecutive years of Schedule F or other farm tax forms if you also farmed during the past year (it must be possible to complete a Substitute Schedule F form if you filed farm tax forms other than Schedule F). For the 2016 insurance year, tax forms from 2012-2014 are required and you also must have farmed during 2015;
 - ◊ If you were physically unable to farm for 1 of the 5 required historic years but were farming the past year, you may qualify; or
 - ◊ If you are a tax exempt entity (such as a Tribal entity) and have acceptable third party records available that can be used to complete Substitute Schedule F tax forms for the 5 year history.

- Information supporting expansion if you want the farm to be considered as an expanding operation due to the farm operation physically expanding last year or the coming year, including increased acres, added equipment such as a greenhouse, new varieties or planting patterns, or anything else that expands production capacity (other than just a change in price); and
- Any supporting information required, including other signed tax forms, to show the farm tax forms are accurate and were filed with the IRS.

Growing Farm Operations

Operations that have been expanding over time may be allowed to increase their approved revenue amount based on an indexing procedure, or, if you can show that your operation has physically expanded (land, animals, facilities, or production capacity) so it has the potential to produce up to 35 percent more revenue than the historic average, your insurance company may approve your operation as an expanding operation to reflect that growth in the insurance guarantee.

Prices

Prices used to value commodities must be based on the guidelines for prices in the policy. Organic prices that meet the policy requirements are allowed for valuing organic commodities.

Market Readiness Operations and Post Production Costs

Market readiness operations such as on-farm activities that occur in or near the field and are the minimum needed to remove the commodity from the field and make it market ready can be left in the allowable revenue and expenses. The cost from all other post production operations not considered market readiness operations must be removed from the allowable revenue and expenses, including activities that increase the value of a commodity such as canning, freezing, and processing activities.

Losses

Claims are settled after taxes are filed for the policy year. A loss under the WFRP policy occurs when the WFRP revenue-to-count for the insured tax year falls below the WFRP insured revenue. Revenue-to-count for the insured tax year is:

- Revenue from the tax form that is 'approved revenue' according to the policy;
- Adjusted by excluding inventory from commodities sold that were produced in previous years;
- Adjusted by including the value of commodities produced during the tax year that have not yet been harvested or sold; and

- Any other adjustments required by the policy such as those from uninsured causes of loss.

If the farm operation does not have expenses during the insurance period of at least 70 percent of the "approved expenses" the insured revenue amount will be reduced by 1 percent for each percentage point the actual approved expenses are below 70 percent of the approved expenses.

Premium Subsidy

Farms with two or more commodities will receive a whole-farm premium subsidy as long as the minimum diversification requirements are met. Farms with one commodity will receive the basic level of premium subsidy.

Buying Whole Farm Revenue Protection

You can buy Whole-Farm Revenue Protection from a crop insurance agent by the sales closing date shown for each county in the actuarial documents at webapp.rma.usda.gov/apps/actuarialinformationbrowser/. A list of crop insurance agents is available at all USDA service centers and on the RMA website at www.rma.usda.gov/tools/agent.html.

Contact Us

USDA/RMA
Mail Stop 0801
1400 Independence Ave., SW
Washington, DC 20250
Phone: (202) 690-2803
Fax: (202) 690-2818
Website: www.rma.usda.gov
Email: rma.cco@rma.usda.gov

Equine Spring Cleaning

By Alyssa Couse, CCE Jefferson County

As the snow is replaced with mud in the pastures, there's no mistaking the season of spring for horse owners. Spring cleaning likely consists of removing cobwebs, washing winter blankets, and cleaning up around the barn. There's also a checklist to get your horse ready for the warmer weather. Your horse will actually tell you when to start preparing, by leaving clumps of loose hair everywhere. This is a physiological response that spring is on its way (although I think spring got lost this year).

Dr. Melanie Parker-Geurtsen, Cowcalls Inc., recently did a one-stop shop visit to Snow Country Stables in Evans Mills, NY. Her clients included a Clydesdale, 2 Quarter Horse mares, 2 Arabians, and one stallion. Services provided included shots/vaccinations, Coggins testing, and teeth floating. For owners who have stallions or geldings, it is also a good time to ask your vet about cleaning your horses' sheath. When the temperatures finally rise, a nice warm bath will help get the rest of the hair, mud, and winter funk from your horse's coat.

Shots: The vaccines provided were rabies, rhinovirus, and Potomac horse fever. Also, horses had their Coggins updated. In addition to a blood test for equine infectious anemia, this also involves taking photographs of your horse and documenting their characteristics. The Coggins test was first

introduced in 1970, and was actually developed by a former Cornell professor, Leroy Coggins. If you are planning to take your horse off your property, whether to a show, trail, or to another barn, it is required to have an updated Coggins.

Foals: Another sign of spring...babies! Snow Country Stables has 3 new arrivals thus far, with two more on the way.



Teeth Floating: As horses age, their teeth grow. With this new growth, you can imagine that the shape and effectiveness of the teeth may change. By filing, or floating, a horse's teeth, it ensures that they have a proper chewing surface and no sharp edges to cut their gums. Using an electric file and speculum makes the process faster and less rigorous to perform. Happy grazing!



CCE North Country Regional Ag Team
203 North Hamilton Street
Watertown, New York 13601

What's Happening in the Ag Community

Farm Tour for Veterans, Wednesday, May 2, 2018. Learn more at https://reg.cce.cornell.edu/VetFarmTour_222

Table Talk, June 12-13, 2018. See page 7 for more information.

Chicken Processing Clinic, Saturday, May 5, 2018. Learn more at https://reg.cce.cornell.edu/chickenprocessing_209

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