

Cornell Cooperative Extension

Central New York Dairy, Livestock and Field Crops

Serving Chenango, Fulton, Herkimer, Madison, Montgomery, Otsego, Saratoga and Schoharie Counties

April 2019

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As I sit and write this, the last 3 days have been typical March, beautifully sunny on Friday, 68 on Saturday and spits and sputters of snow on Sunday. After a cold and dreary winter, I know I am looking forward to the warm breezes of spring and the smell of fresh soil being turned in the field. All with hopes of a new crop year laying before us. But, before we head out the door to tend to the fields or watch baby calves play in the sun, can you take a minute to give the office a call or send a quick email? The CNYDLFC team is trying to update our mailing list. We would like to know what programs YOU are interested in. Whether it be Dairy, Livestock, Field Crops, any or all of the 3 types, our database needs updating so our producers will get the information they want and in the correct format. Our office has the ability to email or send via US Postal Service. So, give us a call 315-866-7920 and we can help you out. If you'd like to email, our address is Herkimer@cornell.edu. Either way, give us a shout; we are all here to help!

Cheers to a happy and safe planting season!

~Nicole



Spring
2019

Planning Ahead— It’s going to get HOT again this summer!

By: Lindsay Ferlito

Dairy Specialist North Country Regional Ag Team

June 2017

Even though May started off cool and rainy, summer is just around the corner, which means so are the negative effects of heat stress on cows that aren’t adequately cooled. According to Elanco, the order in which you should install heat abatement throughout the barn is: holding area, dry cows, fresh cows, high production cows, and finally low production cows. So once the holding area is taken care of, the next place to focus on is the dry/pre-fresh cows.

Studies continually show the benefits of cooling lactating cows (increased lying time, increased DMI, increased milk production, better reproduction, etc...), and also the benefits of cooling dry cows, on both the unborn calf and the cow during her next lactation. “It’s profitable to cool cows everywhere in the US... except Alaska” said Dr. Albert De Vries (University of Florida) at the Cow Comfort Conference in Syracuse this spring. He presented a summary of studies showing a benefit to cooling dry cows of 1.2 to 6.3 kg/cow/d of milk in the next lactation, averaging about 5 kg/d, or 11 lbs/cow/d (Figure 1).

Cooling during the dry period increases milk yield in the next lactation

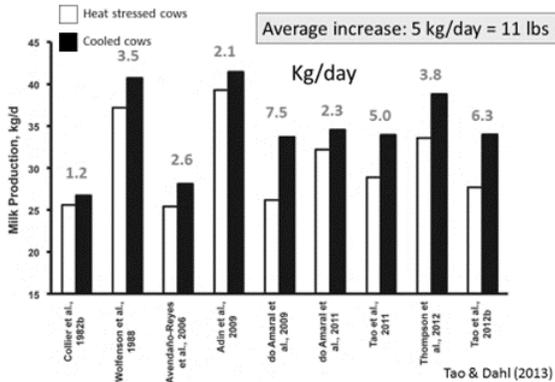


Figure 1. Graph from by Tao and Dahl (2013), and presented by Dr. De Vries (2017), summarizing several studies showing increased milk production due to cooling in the dry period.

The more hot days you have, the greater the return will be on your investment in dry cow heat abatement, as seen in the next graph (Figure 2). On average in New York, there are about 80 heat stress days (days with THI > 68), which is close to the US average of about 90 days. That means heat stress in the dry period alone is costing NY producers an average of \$112/cow/year (using the average of 11 lbs/d), compared to \$233/cow/year in Florida.

Milk and economic losses in the next lactation 10 states with the most dairy cows + Florida

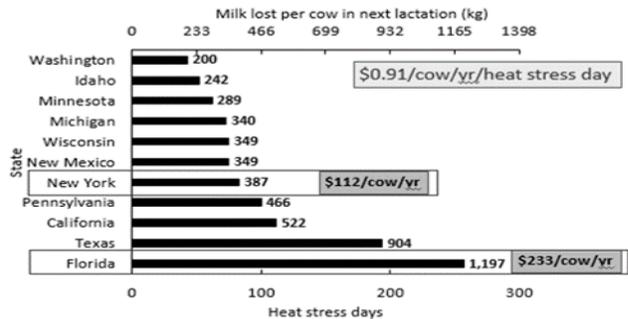
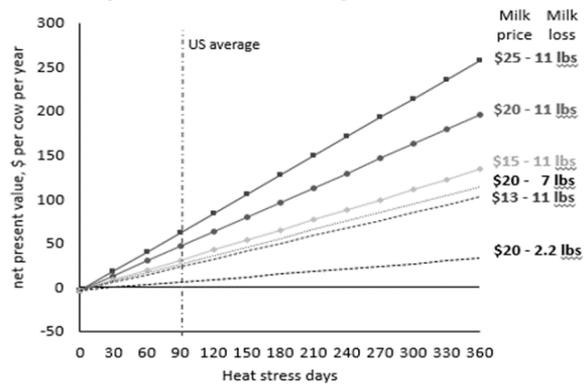


Figure 2. Graph from Dr. De Vries (2017), showing the economic benefit of cooling dry cows in NY and across the US.

As Dr. De Vries said, it pays to cool dry cows almost everywhere, including NY. Even when the milk increase due to cooling dry cows is only a couple pounds/cow, it still pays to invest in fans and sprinklers for dry cows (Figure 3). Another scenario (not shown here), included the cost of having to build a new dry cow barn (at \$2500/stall), and even then it was still profitable in the majority of the US to make that investment given the return seen in milk production in the next lactation.

Figure 3. Graph from Dr. De Vries (2017), showing the impact on profitability of cooling

Net present value/cow/year, no barn cost



dry cows based on various milk prices and milk losses.

Overall, cooling dry cows is very profitable when just looking at milk production, and the value increases when you include the benefits to the unborn calf. In most cases, the investment of dry cow cooling (fans and sprinklers) will payback in less than one year (with the full benefit seen after one full lactation after cooling dry cows). For more information on heat stress, water needs, and the benefits of dry and lactating cow heat abatement, please visit their website (<https://ncrat.cce.cornell.edu>, and look under Dairy – Management and Facilities) or contact Lindsay Ferlito (Lc636@cornell.edu).

Flushing Ewes prior to fall breeding season

By: Ashley McFarland

Area Livestock Specialist, PAS

Breeding ewes for fall lambing is becoming more common in our seedstock operations, however large commercial operations have been using this method for many years.

Before we go out and stick our rams in with our ewes we should really consider flushing the ewes we plan to breed this spring. Flushing is predominantly done 2-3 weeks prior to breeding and continued 2-3 weeks into the breeding season. This 4-6 week window allows the ewes to be flushed and get into good shape for being pregnant throughout the summer. Flushing has shown to increase lamb crop and we have seen more twins than singles in most cases. (Twins pay the bills, singles do not!)

This method works best on seasoned (mature) ewes that are body condition scoring (BCS) of 2.5- 3.5. These ewes have gained back weight after nursing lambs this past fall and should be in good condition by April to start flushing for fall lambs. The most success is seen on ewes within the 2.5- 3.5 BCS range. Ewes that are too thin or overly heavy will have a lower response to flushing.

Timing is key to flushing! In this case we are trying to flush ewes to lamb in the fall. It is more beneficial to flush early (April/May) in the season when ovulation rates are naturally high compared to mid-breeding (June/July). Flushing not only will increase the number of ovulations (eggs) in the ewe, but will also improve the survival rate of the lamb in utero. The end goal is there will be more eggs available for fertilization, and the higher chance to survive after birth.

When flushing ewes, studies have shown that feeding corn has been most successful, however there has been

some success on pasture. The ewes are requiring an increase in energy and protein in their diet at this time to allow the proper flushing to occur.



The other factor we may run into is breed specifics. Some breeds are known for out of season breeding and some are not. The black face sheep tend to have a much harder time at becoming pregnant during the spring vs late summer/ fall. We can alter this by treating the ewes with progesterone for 10-12 days to synchronize estrus. When the progesterone (CIDR) is removed we then inject gonadotropin (pg 600) into the ewe, the ewe will then exhibit estrus within the next 12-24hrs. At this time we will stick the ram in with these ewes. Ewes do not always catch on first heat even with implanting with progesterone. The most successful lamb crop is produced at the second breeding after applying the CIDR.

It is important to understand that flushing is not ideal for every operation. Not every farm is able to separate ewes off to properly flush the ones they plan on breeding for fall lambs. However if you desire to get the most return on your ewes this would definitely be an option to consider.

When Planting Goes Wrong....

Prevented Planting & Replant Provisions in Crop Insurance - 2019 Crop Year NY

Crop insurance can help your farm recover from a crop failure. Did you know it can also help you manage risk at planting time? Most crop insurance policies include provisions that can compensate you if you are unable to plant or help you afford to replant your crop if necessary

Prevented Planting

Prevented planting provisions in insurance policies can provide valuable coverage when extreme weather conditions prevent or delay planting.

Am I covered?

Most policies include a provision for prevented planting with the exception of group risk (GRP, GRiP, and ARPI) and catastrophic-level ("CAT") policies.

Eligibility

You may be eligible to file a claim if:

- Your acreage is physically available for planting
- Your acreage was planted in at least 1 of the 4 most recent crop years
- An insured cause of loss occurred within the insurance period, for example;
 - Excessively wet conditions throughout the growing season which prevented nearby producers from planting similar acreage
 - A specific event, like flooding, which impacted only your field
- You were unable to plant by the final planting date or during the late planting period (generally 25 days after the final planting date but varies)

So you were unable to plant, now what?

You must provide notice that you were prevented from planting an insured crop within 72 hours after you determine you will be unable to plant. Then you may choose to:

- Leave the acreage idle or plant a cover crop (and receive a full prevented planting payment as long as you do not hay or graze the cover crop before November 1)
- Plant the crop late (your original production guarantee applies but is reduced one percent per day for each day planting is delayed after the final planting date), OR
- Plant a second crop (you may receive a prevented planting payment equal to 35% of the prevented planting guarantee).

Payments

The prevented planting guarantee for most crops is typically 60% of the production guarantee purchased for timely planted acreage. Some policies have additional coverage options available.

Replant

Replant provisions in insurance policies provide a payment to help producers replant after extreme weather destroys a planting.

Am I covered?

Most policies include a replant provision with the exception of group risk (GRP, GRiP, and ARPI) and catastrophic-level ("CAT") policies.

Eligibility

The acres to be replanted must be:

- Originally planted on or after the earliest planting date
- Either at least 20 acres total or 20% of the insured planted acreage (whichever is less-this is known as the "20/20 Rule")
- Affected by an insured cause of loss such as a late frost
- Appraised as having an expected yield below 90% of the guaranteed yield in your policy
- Determined to be "practical to replant" by an Authorized Crop Insurance Adjuster
- Replanted with the original crop.

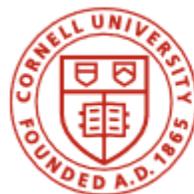
So, your planting was destroyed, now what?

- Notify your crop insurance agent within 72 hours
- An adjuster will appraise your expected yield and whether it is practical to replant
- If applicable replant the original crop
- Your original planting guarantee will continue as if nothing had happened (as long as you plant before the final planting date)

Payments

The replant payment is typically equal to the lesser of either your actual costs of replanting or a formula provided in your crop insurance policy provisions (for example: for corn, the per-acre replant payment equals the projected price/ bushelsx8 bushels).

Cornell University delivers crop insurance education in New York State in partnership with the USDA Risk Management Agency. Diversity and Inclusion are a part of Cornell University's heritage. We are an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.



Reducing soybean planting rates can increase income

By: Michael Staton, Michigan State University Extension - February 28, 2019

Results from 40 on-farm replicated trials conducted in Michigan from 2015 to 2018 build a compelling case for reducing soybean planting rates.

Michigan soybean producers have consistently identified planting rates as the highest priority topic to evaluate in on-farm replicated trials. Furthermore, the producers wanted to evaluate the effect of low planting rates on soybean yield and income. The two factors driving the increased interest in reducing soybean planting rates are seed cost and white mold. To help Michigan soybean producers make planting rate decisions, the SMART (Soybean Management and Research Technologies) program conducted a total of 40 on-farm replicated trials from 2015 to 2018.

Eleven planting rate trials were conducted each year from 2015 to 2017 and seven trials were conducted in 2018. Four target planting rates (80,00, 100,000, 130,000, and 160,000 seeds per acre) were compared at all but one location where the lowest rate was not included. Stand counts were taken to determine actual final plant stands at each location in all years. To calculate the income (gross income – seed cost) generated by each planting rate, we used the USDA projected prices and average seed costs for treated seed for each year. None of the varieties planted in the trials were straight line or thin line plant type and a complete seed treatment was used at 33 of the locations.

Because we conducted the trials over four years, we learned how the planting rates performed over a range of growing conditions. Planting conditions were nearly ideal in 2015 but were much more challenging in 2016, 2017 and 2018 as evidenced by the average stand loss shown in Table 1. Statewide record yields were achieved in 2015 and again in 2016. However, yields declined significantly in 2017 due to excessive early rains and a lack of rain in August and September. Yields rebounded in 2018.

Year	Average stand loss for all planting rates (percent)
2015	12
2016	18
2017	22
2018	26

The effects of soybean planting rates on yield and income are shown in Figure 2. The bars represent yield and the lines represent income. The figure clearly shows the year-to-year variability in yield and income. It also shows that the lowest two planting rates were the most profitable in 2015 and 2018 and the highest planting rate was the least profitable each year. Table 2 shows the average yield and income for all 40 locations.

Planting Rate	Average Yield (bu/ac)	*Gross income – seed cost
80,000	60.3	\$519
100,000	61.8	\$524
130,000	62.4	\$515
160,000	62.5	\$503

*Using 2018 figures for seed cost (\$63/140,000 seed unit) and market price (\$8.60 per bushel).

When all 40 sites were combined, the yields from the highest two planting rates were identical and they beat the 100,000 seeds per acre planting rate by less than one bushel per acre and the 80,000 rate by only 2.2 bushels per acre. The 100,000 seeds per acre planting rate generated the most income.

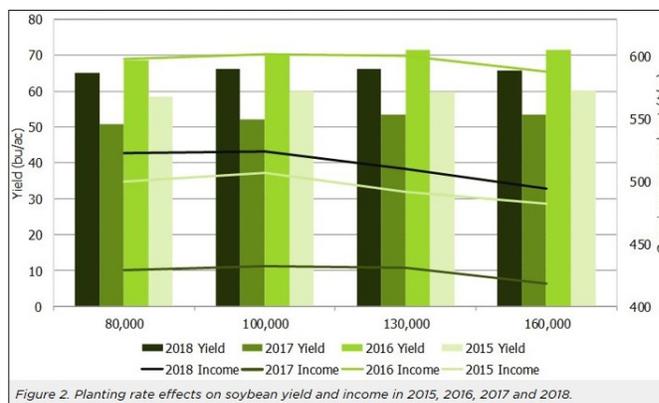


Figure 2. Planting rate effects on soybean yield and income in 2015, 2016, 2017 and 2018.

Two of the trials were infested with white mold showing that reducing soybean planting rates can also be an effective management practice for reducing yield and income losses from white mold (Table 3). At both sites, the lowest planting rate produced \$80 per acre more income than the highest planting rate.

Planting rate	Yield (bu/ac)		Income (\$/ac)	
	2015 Sanilac 2	2018 Saginaw	2015 Sanilac 2	2018 Saginaw
80,000	63.2 a	66.2 a	\$508	\$533
100,000	61.1 b	66.5 a	\$480	\$527
130,000	61.5 b	64.3 a	\$470	\$494
160,000	57.9 c	61.2 b	\$426	\$454
LSD _{0.10}	1.7	2.4		

*Using 2018 figures for seed cost (\$63/140,000 seed unit) and market price (\$8.60 per bushel)

Half of the planting rate trials were conducted in Tuscola and Sanilac counties, so the Thumb area has been well represented. However, we are looking for sites in mid-Michigan, southwest Michigan and southeast Michigan for 2019. This trial is very easy to conduct when the planter is equipped with electric or hydraulic variable rate drives.

This article was originally published in the Spring 2019 issue of the Michigan Soybean News, Volume 11, Issue 2.

Missing corn seed? Consider planting depth and Avipel®

By: Kevin Gano, Team Leader
Area Field Crop Specialist

Birds. It is typically that simple. If you planted corn and you go back to the field after a couple of weeks and the seed is gone then birds ate it. No one ever wants to believe that but it is true.

Birds go to corn fields when the corn is approaching the V1 stage, where you can see the first leaf collar, and start trying to pull the seedling plants out of the ground. If they are successful you will see a seedling plant with no seed hanging on by a few roots, maybe a wilted or dead plant or may be none because it has all but dried up and blown away. You may find parts of the seed coat remaining, easily visible because of seed treatment color and you may see a depression or divot



Corn seedlings clipped off by birds

where the bird worked the seedling around in the ground until it could get to the seed. Sometimes all that is left is this hole or depression but you can see them nicely spaced out where your corn plants should be.

This hole or depression the birds create may also contain a plant that has been cut off as the birds were unable to work the seed out of the ground and they ended up clipping off the green shoot. That clipped green shoot takes less than a day to dry up and in many instances blow away. Get out a knife or a hand spade and dig around the depression you may still find an intact growing point and seed; the growing point is .75 inches below the soil surface and by this time you may see some swelling as the plant starts to form its first nodal roots. You may also find the birds have reached that deep and clipped the growing point off and now the plant is dead.

A first line of defense when it comes to seed loss from birds is making sure that you have corn planted at least 1.5 inches deep and I prefer 2 inches. Maybe 1.5 is considered an ideal "book" depth but here are two real world thoughts. One I have great appreciation for the modern corn planter's ability to place seed exactly 1.5 inches deep but if you are down

measuring seed depth seed is usually going to be in and around 1.5 inches, more or less. What you want to be hitting 100 percent of the time is greater than 1.5 inches because anything less that means you have some seed around 1-1.25 inches. Seed that shallow and under the right conditions is easier for the birds to pull up. Aiming for 2 inches will guarantee the majority of your seeds are placed 1.5+ inches.

First year corn planted into sod ground that has worked up nice and loose often gives up corn plants very easy to birds. Worn double disk openers or those that are not adjusted together properly may prevent the seed from reaching the proper depth. Don't be surprised to see patterns in a field where

looser soil areas are damaged and more compacted areas less so. It may also be hard to get the desired seed depth especially notilling into gravelly soils.

There is another factor when it comes to the "blackbirds" (crows, redwing blackbirds, starlings and grackles) that cause the damage and that is a place for them to roost. Fields that are under bird pressure year after year usually are the right combination of trees available for birds to roost and a food source.

So if you have exhausted getting planter right then consider the use of Avipel® Corn Seed Treatment. Avipel's active ingredient anthraquinone is a chemical found in plants such as rhubarb. When applied to seed and consumed it causes birds stomach distress to the point they will leave the area.

Over the past two years my extension co-workers in Cornell Cooperative Extension and I along with New York State IPM staff like Ken Wise have put out plots where the same hybrid with and without the Avipel®.

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Human Resource Management: The devil is in the details...

By: Nicole Tommell

Area Farm Business Management Specialist

Now that tax season is coming to a close, machinery is prepped and ready for impending field work, I would like to challenge farm owners to review any human resource items that may have been overlooked after January 1st. Although it seems redundant, a short review of all necessary trainings and employee files will be beneficial for the employee and the employer.

The first order of business is to review all files for current, terminated or employees who have left on their own accord from the last calendar year. There are a series of documents that all employees must have in their files. All employees must have Form I-9 (Employment Eligibility Verification) on file. In the event of a change of employment, employers have the obligation to retain the I-9 form for three years after date of employment or one year after date of termination, whichever is later. Since the I-9 form is comprised of sensitive information, the U.S Citizen and Immigration Services (USCIS) strongly suggests that all employers keep the I-9 forms separate and secure from the general personnel file.

The tax component of the federal mandate is the W4 (tax withholding certificate) form. The W4 is the trigger for the W2 filing form at the end of the fiscal year. This too must be filled out and filed at the time of hire. All W4 forms must be kept for 4 years after the last filing of the 4th quarter of the calendar year (www.irs.gov/businesses/small-business-self-employed/employment-tax-recordkeeping). In addition, if the employer is holding W2's for previous employees those should be placed in the employee file and not destroyed. As employers, you must make in good faith an effort to distribute the W2 to the employee however, in many instances farm laborers do not leave forwarding addresses to send this documentation.

The New York State requirements are in addition to the Federal regulations. All NYS farm workers must have the Farm Worker Agreement (NYS LS 309) in their personnel file. This is the contract between the employer and the farm worker designed to give specific information to the employee regarding pay rate, overtime, housing, benefits, etc. New York State does provide a document (<https://labor.ny.gov/formsdocs/wp/ls118.pdf>) or employers can utilize their own so long as all information that is required is gathered. It is important to review this document annually for accuracy and compliance. In addition, this document must be retained for 6 years past the employment period.

Re-certifications and trainings are also a hot button issue for

employers. With the onset of spring, many find themselves in full gear headed to the fields. Unfortunately, there are times when on farm safety protocols are not reviewed and trainings are put to the wayside. This could spell disaster to the farm employee especially if they are new or unfamiliar with a piece of equipment. We are very fortunate that NYCAMH (New York Center for Agricultural Health and Medicine) provides On-Farm Safety trainings complete with a training roster and certificate of completion at no cost to the farm. NYCAMH's trainings are in line with USDA, OSHA and GAPS requirements. Check out their website for more information at www.nycamh.org.

Finally, on October 9, 2018 all New York State employers (even if you employ 1 person) must have a Sexual Harassment Prevention Policy in place. If you do not have the prevention policy in place, I strongly encourage you to review the Cornell University CALS Agricultural Workforce Development website and adopt the NYS DOL model policy and complaint form. This form can be filled in with your farm information and will serve as the first step to compliance. The next step is to hold trainings that are interactive for your employees before October 9, 2019 and every year thereafter. NYS has provided some videos however, they are not very relevant to the agricultural community. The videos are in multiple languages and can serve the purpose in a pinch if a farm would like to get this completed. Currently we have a small team of Cornell CALS/ Extension folks working to develop videos and post-test training kits for use. Stay tuned for more information when it becomes available.

Working through human resource paperwork can be tedious and time consuming for many farms. Many times farm owners are concerned with doing the basic paperwork upon hiring or termination. Unfortunately, the onset of new mandates will continue to add an extra burden on farm owners. Inspection of records from NYS Department of Labor is a very real possibility and we want you to be ready if that occasion should arise. Remember to look to the Extension Regional Team for assistance or visit the Ag Workforce Development page for more information, www.agworkforce.cals.cornell.edu.

Meet the CNYDLFC Team... Questions? Give us a call!

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Continued from page 6

Missing corn seed? Consider planting depth and Avipel®

The product works very well, so well that when selecting fields that had consistent damage and placing strip trials in those fields the birds once eating the treated strips tended to leave both treated and untreated alone. Don't get any ideas here, I have seen birds figure out the second, fourth and fifth rows of a six row planter were shallow planted and eliminate those rows and not the others planted deeper.

Avipel® Hopper Box Corn Seed Treatment may be purchased and used in NY to reduce grackle and blackbird damage to field and sweet corn. Users must have the 24(c) Special Local Need Registration label in their possession when using this product. (The NY Special Local Needs registration number is SLN NY-170006.) The Special Local Need registration is due to the NYSDEC recognizing that bird damage to corn is a significant issue in NY and that there are no other NY-registered pesticide products to address the situation.

Seed pretreated with Avipel® is available from some seed companies so talk to your seeds person to see if that is a possibility if you do not wish to treat your own.

Cost for the hopper box treatment is in the range of \$7.50 to \$8.40 an acre depending on any discounts. So figuring the cost is equal to the value of 2-3 bushel of corn if you have fields or parts of field that are being wiped out by birds the cost recovery on the Avipel® is very easy to achieve.

Starting with increasing seeding depth should not only lead to less bird damage but also improve corn growth and development in your fields. But if birds are a problem taking corn seeds then consider the Avipel® seed treatment to reduce if not eliminate the damage.

Curtis, P. D., K. L. Wise, J. Cummings, A. D. Gabriel, K. Ganoë, J. J. Miller, M. E. Hunter, K. A. O'Neil, J. R. Lawrence, P. E. Cerosaletti, and Dale R. Dewing. XXXX. Field evaluation of anthraquinone treatment to reduce corn seedling damage by birds. *Crop Protection* (in review)

Johne's Disease in Beef Herds

By: Dr. Melanie Hemenway, DVM NYSCHAP Coordinator

What is Johne's Disease?

Johne's disease is a chronic, incurable bacterial infection that primarily affects the lower small intestine of ruminants. Infection most commonly occurs when young animals ingest the bacteria *Mycobacterium avium paratuberculosis* (MAP). After infection, the bacteria grow slowly inside the animal's intestinal cells. Over time, the animal's immune cells multiply in response to the bacteria's presence, eventually leading to thickening of the intestine, impairing the ability to absorb nutrients, and leading to the clinical signs of Johne's disease in some animals. The disease progression in the small intestine may take up to two to six years or more before late stage clinical signs are seen. These signs include weight loss, intermittent or continuous unresponsive diarrhea, but a normal appetite. Some animals develop "bottle jaw" – fluid under the jaw caused by protein loss. Late stage animals continue to deteriorate and can die in a few days or a few months.

There are no good estimates of prevalence in beef herds in the United States. A NAHMS survey in 1997 showed less than 10% of beef cow/calf operations positive for Johnes, however, this is considered a very conservative number based on the survey design and the lack of registered operations being a part of the survey. Johne's disease is a herd problem that worsens with time, reducing production and profit.

Johne's disease has the largest impact on seedstock and purebred producers since they are selling animals that will be kept long enough for an animal to break with the disease. These are the operations that should be more motivated to do something about the disease especially when it is perhaps at a more lower, manageable level in their herd. The operations who do implement Johne's control will have a distinct advantage in marketing their breeding stock.

Johne's is primarily transmitted through the fecal-oral route and that is where management needs to focus. Also, young animals less than 6 months of age especially the newborns are the most susceptible to infection so they are the ones to protect against exposure. It may be difficult but not complex to prevent new infections. We are not going to tell beef producers to take calves away from their mothers like we recommend in the dairy industry. However, we can institute management that takes new cow-calf pairs and puts them in a clean environment to minimize spread. Also, we encourage producers to get feed off the ground and use bunks or racks to minimize manure contamination as well as fence off surface water sources and use water tanks which are cleaned regularly. Also, beef operations can utilize Johne's testing to identify late stage infected animals for culling and more intense management to control the exposure of the manure from these animals to young stock.

Critical management points for Johne's disease control:

Reduce infections by manure management (all manure is suspect) – Avoid manure build up in pastures, corrals and barns. Have a clean calving area and move new cow/calf pairs to a clean pasture as soon as possible. Avoid keeping high risk or sick cows in the calving area and avoid overcrowding. Provide clean feed for all cattle and avoid manure contamination by using feed bunks and/or hay racks. Use separate equipment to hand manure and feed. Provide clean water, not contaminated by potentially infected animals. Keep adult cow manure away from young stock by housing in separate facilities or pastures not recently used by adult cattle. Prevent transporting bacteria to young stock by people, runoff and equipment.

Reduce infections by colostrum management – Feed "low risk" colostrum from test negative cows. If colostrum supplementation is needed use clean harvesting procedures or consider using a quality commercial colostrum supplement product.

Reduce infections by managing infected animals – Identify and remove clinical and late state animals immediately. Consider Johne's testing to identify subclinical animals and define herd status. Johne's testing can also help identify infected animals that are shedding Johne's in their manure. These animals can be culled or segregated away from the herd and especially the young animals to help minimize spread in the environment.

Purchased animals – Do not buy from herds with unknown Johne's infection status. Obtain herd health information from source herds ask about their Johne's disease monitoring and management. Pretesting purchases will not detect Johne's infections in the early stages of the disease so additional follow up tests are recommended two or three times at six to twelve month intervals.

Johne's Disease Control Program

New York State offers cattle producers a free program – the New York State Cattle Health Assurance Program (NYSCHAP). This is a voluntary disease management program that helps farms identify disease risks, create obtainable goals and implement strategic herd planning that works within the farm's resources to meet their goals. The program uses a team approach bringing together the farmer, the herd veterinarian and a NYSCHAP herd planner who is either a NYS veterinarian or a NYSCHAP certified private veterinarian. The program pays the herd veterinarian for their participation so there is no cost to the producer. Also, enrollment in NYSCHAP allows farms to receive subsidized pricing for Johne's testing. This program can tailor an effective plan for Johne's identification, control and testing for the farm. More information on the program and how to enroll can be found on the NYSCHAP website: www.nyschap.vet.cornell.edu.

Feeding High Forage Diets Successfully

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You have probably read or heard of people feeding high forage diets to their dairy herds, but how feasible or practical is it? The feasibility comes in when we are able to also have good productivity. Anybody can feed a high forage diet, but if milk output suffers to any great degree, the benefits will almost always be lost to the economic value of the lost production, even with current milk prices.

Let's start out with a definition. What is a high forage diet? Some people will say 60% forage (on a dry matter basis) would be high forage. Others would say it needs to be 70% to be considered high forage. You can decide that for yourself.

Next we need to decide what a forage is. Certainly pasture, dry hay, haylage, or baleage would be considered forages. But what about corn silage? Corn silage is often described as being made up of 50% grain and 50% stover on a dry matter basis. So, is it really all forage? Again, that is up to the person making the determination. Sometimes people will "high chop" their corn silage. That concentrates the grain, so now the corn silage might be 60 to 65% grain. Is it still a forage? And how about Snaplage? This is where the chopper snaps off the ear. The product can vary anywhere from nearly being ground ear corn to everything on the corn plant from the ear on up. Should that be considered 100% grain or should it be considered part forage? Feedstuffs such as Wet Brewers Grain are sometimes fed and utilized as a forage extender. It is made up of spent grains left over from the beer making process. The starches & sugars are mostly gone from the barley (& sometimes rice & other grains) and can include some leftover hops. It's typically very wet, high in protein (comes from the germ portion of the grain), and high in digestible fiber. When incorporated into a dairy diet, wet brewer's grain (on a dry matter basis) will typically displace equal parts of forage and grain. So, it could be considered 50% grain and 50% forage.

There is much confusion on all of these issues when it comes to calculating what percent forage you may have in your diet(s). The bottom line for most producers is how to feed lots of forage to minimize how much grain they will need to buy and how much cash they will need to spend on that purchased grain, all without sacrificing milk production.

For producers who pasture their cows, a well-planned out and well managed intensive grazing system will produce high quality forage that is hard to beat. And, it will likely be very cost competitive. There are bounds of resources available describing how to set up and manage these systems. There are entire books available. However, forage from a grazing system is not available year around in our part of the country. So, even if you have an intensive grazing system in place, you will still need high quality forage during the rest of the year.

Growing and storing high quality forages for your herd does not come without cost. That being said, probably the single most critical factor affecting haycrop forage quality is timeliness of harvest. Every year is different when it comes to the timing of first cut harvest. Some years we have an early spring and sometimes we have a late spring. Every year our haycrop harvest is also competing for

your time when you have corn to plant and manure to spread (for those with a manure storage). Having equipment ready and labor lined up ahead of time is critical to getting all of these tasks completed in a timely manner, especially when you consider the limited windows of time that are typically available because of weather delays.

Research at various universities and work in the field has taught us that we can use alfalfa height in the spring to predict when to harvest alfalfa, grass, & mixed stands to achieve the kind of quality needed to feed high forage diets to our lactating cows. Every spring our Cooperative Extension team measures alfalfa height weekly on 60 or so fields across the eight counties we cover. Data is plugged into an excel spreadsheet that is set up to predict harvest dates that will provide high quality forage for lactating cows. Results are emailed out to our team email list. Information for each field includes County, Township, Road Name, Elevation, Alfalfa Height, Predicted Grass % NDF, Predicted 50/50 Mix % NDF, Predicted Alfalfa % NDF, Predicted Date to Cut Grass, Predicted Date to Cut Mix, and Predicted Date to Cut Alfalfa. Most people can find a field that mimics their fields. This email list grows every year and has proven itself to be a valuable tool for dairy producers and their advisors. To be placed on the list simply email your email address to herkimer@cornell.edu with the words "ADD TO FIRST CUT FORAGE QUALITY LIST" in the subject line.

The vast majority of successful "high forage" diets contain C.S. as the primary forage. There are several reasons for this. A high energy forage with plenty of starch is a good foundation for a high forage diet. When BMR Corn Silage is fed we are also getting high levels of digestible fiber that provides energy. Energy is the primary limiting factor for our high producing dairy cows. Our ability to extract all of the energy out of C.S. has been enhanced by the use of kernel processing. Corn silage's low protein content allows your nutritionist plenty of room to fine tune protein fractions and to easily balance for amino acids without suffering an energy penalty that excreting excess protein can cause, such as can be the case with large amounts of 25% crude protein haylage in the diet. The haycrop portion of these high forage diets is typically high quality alfalfa, an alfalfa/grass mix, or straight grass. The key for any of them is that quality must be high along with excellent fermentation.

Excellent day-to-day feeding management is critical for high forage diets to work well. You're depending on the forage portion of the diet for more of the nutrients the cow is receiving. You'll need to have an adequate inventory of consistently high quality highly digestible forage to make high forage diets work. The feeder needs to be "proactive" when it comes to staying on top of forage dry matter changes, cow number changes, and weather effects that could impact dry matter intake. One of the worst errors a feeder can make when feeding a high forage diet is allowing the cows to run out of feed.

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Feeding High Forage Diets Successfully

Other strategies being used to successfully achieve the forage quality needed for a high forage diet include the following:

- Harvesting cover crops in the spring for high quality highly digestible forage. Producers with experience doing this have called this feed “rocket fuel.” Some are putting it away and feed it during the hot summer period. The high digestibility helps to stimulate dry matter intake during the heat of the summer. You need to weigh the benefits of producing this feed against any yield losses you might have by delaying C.S. planting on your farm.
- Low lignin alfalfa is often touted as holding its feed value longer so that you can delay harvest, improve yields per cutting, and still maintain quality. Some folks are looking at the same cutting schedule they have always used to get the improved fiber digestibility. Work with your crop advisor in weighing the costs vs. benefits on this.
- Meadow Fescue is a more digestible grass than other grass species. With grass quality declining much more rapidly than alfalfa as it ages, this is an option to consider when seeding down with grass alfalfa mixes.
- Planting BMR Corn Silage is a strategy some people are using. There is no doubt that the fiber digestibility can't be beat when compared to other varieties out there. Cost is higher and yields still lag. It's more vulnerable to leaf diseases and has some standability issues. You will feed less grain & cows will eat more of this C.S., so inventory management needs to be considered. Work with your crop adviser & nutritionist to determine the plusses and minuses for your farm.
- Be sure feed stays fresh and is not reheating in the feed bunk. This is especially important during the hot summer months. If this is a problem you may need to add a TMR preservative. This is only a band aid. The long term solution needs to be solved at the bunker silo. Poor stability due to inadequate oxygen exclusion or feed out issues will need to be addressed to solve this.
- Keep feed mangers clean & smooth.
- Push up feed frequently (especially with 1X feeding) so cows always have access to feed & are stimulated to come up to the feed bunk. Limit time without access to feed to a maximum of 2 to 3 hours in a 24 hour period.
- Provide plenty of resting time. Limit holding pen time to no longer than 1 hour per milking.
- Limit overcrowding, especially in 3 or 6 row barns.
- Be sure to provide easy access to fresh clean water.
- Separate 1st calf heifers into their own group if possible. Fresh cows can also benefit from their own group.
- Provide a cow environment with excellent cow comfort. This includes comfortable & properly sized stalls, and excellent ventilation & lighting. Don't forget cow comfort for your dry cows. There is a carryover effect once they calve.
- If you graze, be sure cows have shade & water available. Consider letting cows inside with excellent ventilation during hot sunny days with feed available inside. Give them full access to pasture at night. Some corn silage is an excellent nutritional complement to high quality pasture. It can dilute excess protein from well managed pasture, it has less heat of digestion than hay, baleage, or haylage, and provides a boost of energy when they need it the most (heat of the summer).

Let's look at an example:

The forage that is most likely to have dry matter changes is typically haylage. Let's say cows are getting 22 lbs./cow/day as fed of a 40% dry matter haylage. For 100 cows that would come out to 2,200 lbs./day. If the haylage becomes wetter over a week's period of time and is now 30% dry matter, this group of cows should now be getting 2,933 lbs./day. (The 22 lbs. x .40 = 8.8 lbs./dm/cow/day. $8.8 \div .30 = 29.33$ lbs./cow/day x 100 = 2,933 lbs. to feed per day.) This shortfall will leave the bunks licked clean and daily milk production will likely fall. Being observant to notice this change (even though it occurred over a week's period of time) AND being PROACTIVE by checking the dry matter on the haylage and making adjustments BEFORE the bunk was licked clean would have kept feed intake & bulk tank on an even keel.

Other items to consider as you try to keep things on track with a high forage diet:

- Have fresh feed available to cows right after milking. This could be fresh delivery of feed or feed being pushed up.

The bottom line to success with “high forage” diets is that attention to details in every way is important. You must start out with high quality forage. As a starting point, check the NDF levels (on a dry matter basis) from your forage tests. Your alfalfa should be around 40%. Your grasses should be around 50% NDF and your C.S. should be around 40% with starch being around 35%. This is a starting point. Fiber digestibility is another issue to discuss that we do not have time to review right now. We'll do that at another time. You'll notice that I did not mention protein levels. That's because protein should not be a limiting factor in your rations. High protein forages are economically beneficial and can offset some purchased protein expense, but it should not be a limitation for your nutritionist. It's fiber levels and how digestible that fiber is that really drives forage quality. If you don't have high quality forage, you'll end up shooting yourself in the foot by trying to feed a high forage diet. Milk production will suffer, reproduction will suffer, and your economic bottom line will be worse, not better.

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A program and funding partnership between Cornell University, Cornell Cooperative Extension and the Cornell Cooperative Extension Associations of Chenango, Fulton, Herkimer, Madison, Montgomery, Otsego, Saratoga and Schoharie Counties.

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