

# Kentucky Dairy Notes

September 2022



## Tip of the Month

Milking time practices impact milking efficiency and mastitis incidence.

- Physically touch or stimulate teats for 10 seconds before attaching milking unit. When teats are properly stimulated, a signal is sent to the brain resulting in the release of oxytocin into the blood. Oxytocin acts on cells in the udder resulting in milk letdown. This process takes 1-2 minutes, thus the reason for waiting 1 to 2 minutes before attaching the machine.
- Prevent overmilking by removing the milking unit within 30 seconds after milking is done. Overmilking can cause hyperkeratosis (rough teat ends) and result in a place for bacteria to colonize and cause mastitis. Automatic takeoffs need to be checked to make sure they are operating properly to prevent overmilking.

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## Today's Feeding Story Headlines— Higher Commodity Prices, Forage Shortages, Lower Energy Corn Silage— Now What Do We Do?

By Donna M. Amaral-Phillips

Mother Nature sure has played havoc with many planned dairy feeding programs for the upcoming feeding season. Lack of timely rains and higher than normal temperatures at key corn plant development stages have resulted in reduced corn silage yields and/or variable grain-fill within and between fields at some locations. The weather also has resulted in an earlier than expected feeding of stored forages to grazing heifers and dry cows for some; thus further reducing forages available for feeding this winter season.

Recent rains and moderating temperatures may help reverse some of these trends, but a lot of the damage to crops has already occurred. To add insult to injury, grain commodity prices are currently higher than a year ago; more than likely increasing contracted-grain costs this fall on top of the need to feed more purchased grain mix to replace the lower energy content found in “less eared” corn silage. All of these feeding program challenges are occurring along with higher overall input costs. Thank goodness, milk prices are more favorable at this time.

From a farm business management standpoint, these multiple challenges can be overwhelming. To design economical feeding programs which concurrently maximize income over feed costs, one must step back and develop a proactive, not reactive, feeding plan for not only the milking herd, but dry cows and heifers. By breaking this process into manageable pieces, one can more easily develop a plan for feeding this fall and winter which capitalizes on stronger milk prices and uses one's stored forages most efficiently.



## Begin by Taking Stock of Your Situation

Managing the unknown, or worse yet an assumed situation, often results in inefficiencies and higher costs in the end. Without accurate assessments of the quality and quantity of forages available, one could easily run out of forage before the next crop is ready for harvest, have even greater feed costs than necessary, or misuse your forage supply on cattle not requiring a particular quality of forages. Thus, taking

stock of one's assets and using them wisely can pay dividends in more optimal feed usage, feed costs, and resulting milk production for the upcoming winter feeding season.

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One of the first indications the amount of forages or corn grain in storage may be limiting, revolves around noticing that storage structures (i.e. barn, silos/numbers of bags, bins) are “less full” than normal. Although this assessment indicates the forage supply may indeed be limiting, no clear shortfall amounts can be discerned and then used for planning purposes. At the conclusion of the forage harvest season, the first step, regardless of the year's crop growing conditions, is to take an accurate inventory of stored forages (and corn grain, if grown on-farm) on hand (i.e. alfalfa hay, corn silage, small grain silage), including those harvested this year or left over from previous years. This inventory should be sorted and labeled regarding different cuttings, crops, and whether different amounts of grain-fill were noted for corn harvested as silage. Different types and quality of forages then can be allocated for feeding to different classes of dairy cattle on the farm. This approach allows one to best match the nutritional needs of different groups of cattle with the best choice of available forages and to prevent running out before the start of the next harvest season.

Forage samples should be taken such that they reflect the different qualities of forages available. With this information, one can parcel out the available forages to various groups of milking cows, dry cows and heifers, determine additional amount of grain needed, and decide the best way to correct for the shortages of various nutrients, i.e. energy or fiber, usually provided by forages. The highest quality forages need to be reserved for the milking herd, especially the fresh and early lactation cows. For example, if one field harvested as corn silage has less corn grain, it would be best used for the heifers and dry cows versus the milking herd, if it was stored or can be accessed separately. Older heifers and dry cows do not have as high of energy needs as cows in the milking herd, and are a better fit for the lower energy corn silage. Besides the routine analysis for nutrient content, nitrate content should be measured to avoid problems at feeding. (Nitrates are reduced by approximately 50% in the fermentation process for silages.) Most feed companies routinely ask for this component to be included in lab testing, especially in years with drought conditions, but check to make sure it was run.



## Think Outside the Box When Developing a “Feeding Plan” for the Year

Once one has a true understanding of what quality and quantity of forages are available to be fed, a game plan can be developed with the help of your nutritionist which best utilizes the available forages along with the addition of economical commodities available for purchase. Remember that cows require nutrients and not ingredients *per se* in their diets. Different combinations of forages, byproducts, and grains can be used to meet the nutritional needs of the group of cattle. From a price standpoint, byproducts, i.e. soyhulls, corn gluten feed, or wet brewer's grains, tend to move with the prices of corn and soybean meal, so all have seen price increases along with increased prices for corn and beans.

Nutritionists balance rations that optimize performance at a reasonable cost. From year-to-year, different amounts and ingredients are used to reflect the nutrient content of forages, availability of byproducts, and advanced-purchase prices of commodities. If your corn silage is lower in energy this year, understand that additional commodities and by-products will need to be purchased to replace the missing corn grain in the silage. Thus, these diets will have more purchased feeds and carry higher cash outlay for them.

Some considerations to decrease feed costs or replace forages in the diet could include:

- Corn silage with less than optimal corn kernel development contains less energy and this reduced amount of energy (i.e. starch) needs to be replaced if milk production, reproduction, and overall health is to be maintained. In normal years, 50% of the weight of corn silage comes from the corn grain itself and thus the energy associated with this crop. Generally, these rations contain more grain than those in normal years, and cost more unfortunately.
- If balanced to provide adequate, but not excessive amounts of starch in the diet, greater amounts of commodities, i.e. grains, can be fed to replace forage as well as provide the missing energy content. However, adequate amounts of effective fiber, i.e. chew factor, are needed in the diet for sufficient cud chewing activity and saliva production to maintain butterfat production and prevent health problems associated with acidosis. Butterfat is at a premium in today's market, so this should be a priority to maintain.
- Wet by-products can replace some of the forage in the diet. When pricing the use of this by-product, the moisture (dry matter) content and expected shrink needs to be considered. Generally, shrink (or what some call waste) is higher with wet-commodities, usually at 20 to 30% compared to dry commodities at 3 to 5%. A concrete pad is needed to store this product, it works best in a TMR, and unless stored in a bag, needs to be fed out within 2 to 3 days in the summer and less than a week during the colder parts of the year.
- Purchase additional forage in the form of hay or late-planted standing corn from a neighbor as long as the corn plant is not too dry. (Moisture content of the chopped corn plant needs to be greater than 60% or less than 40% dry matter.) Plant additional/different crops for supplemental forage production this fall or spring. Rye is harvested earlier than wheat in the spring. Winter mixtures of forages (i.e. brassicas- turnips) can be grazed by heifers to extend forage supplies for the milking herd, but timing for planting these is getting late.
- Remember to review rations with your nutritionist on an on-going basis to reflect changing forage availability and quality.
- Review production records and sell cows that are no longer profitable. If one raises their own replacements, make sure

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# Parasite Carrying Tick Increases Risk of Theileria Infection in Cattle

By Michelle Arnold, DVM

All dairy farmers are being warned to look for signs of Theileria infection (“theileriosis”) in cattle, with two confirmed cases in beef cattle recently reported in Kentucky. *Theileria orientalis* Ikeda is a microscopic protozoan parasite that infects the red blood cells of cattle, causing anemia. The disease is primarily transmitted by the bite of an infected Asian Longhorned Tick or by blood transfer through the use of contaminated needles. The tick can feed on many animal species, including humans, but the parasite only affects cattle. The first high risk transmission period is when infected nymphs come out of dormancy in February and March and the second from infected adult ticks in July and August. Once a cow is infected, it may take 1 to 8 weeks before she shows symptoms of disease. A spring peak in disease incidence occurs in April and a fall peak in September-October. No effective treatment for sick cattle or a vaccine to prevent infections exists at this time. However, once infected, cattle become carriers and are protected from new infections. No recognized long-term health or production effects from persistent infection have been seen. *Theileria* is not a public health concern and contact with affected cattle does not pose a human health risk or food safety risk.

## What to look for

- The majority of infected cattle have limited or mild clinical signs. The symptoms are very similar to anaplasmosis, another tick-borne cattle disease that causes anemia.
- Affected cattle show signs of anemia including lethargy, pale or jaundiced (yellow) mucous membranes, and increased respiratory and heart rates. Labored breathing may be mistaken for pneumonia, especially in young stock.
- Affected cattle may be exercise intolerant and lag behind the rest of the herd when being moved or lie down in the field.
- Affected cows may be off feed, have a fever, and decreased milk production.
- May see sudden death, especially in late pregnant and early lactation cows.
- Abortions may occur due to lack of oxygen to the fetus with subsequent death of the calf. Metritis in the cow can follow.
- Calves, especially 6 to 8 weeks of age but up to 6 months of age, may show symptoms.

## What to do if cows show signs

- Contact your vet
- Stress and movement of affected animals should be minimized, as their reduced number of red blood cells lowers their ability to transport oxygen around the body. This can lead to collapse and death. Affected animals should be rested,

given high quality feed and water, and handled only when necessary. Consider once a day milking or dry off to reduce stress.

- No treatment options are available other than supportive care. Blood transfusions may be used for valuable animals. Recovery may take 1 to 2 months depending on the severity of the anemia.

## Prevention and control

- *Inspect cattle for presence of ticks.* Routinely inspect livestock, pets, and humans for the Asian Longhorned tick (ALT). Parthenogenetic strains exist in the USA, meaning male ticks are not required to produce eggs and viable larvae. A female can produce 1,000-2,000 offspring without mating. A single cow can quickly become host to thousands of tick offspring that may cause death due to blood loss without causing a blood-borne parasite infection. The ticks are light brown and often smaller than a sesame seed. The adult female is about the size of a pea when full of blood (see Figure 1). All 3 life stages (larva, nymph and adult) may be present at the same time. In cattle, check the head, neck, ears, flanks, armpit, groin, udder and under the tail (areas where the skin is thinner). Cattle that seem lethargic or unthrifty should be closely inspected for ticks.

- *Manage the tick population:* The eradication or removal of ticks from a farm is virtually impossible. The focus

is more about controlling the tick population by treating animals carrying ticks or to deter ticks from attaching to an animal, and by pasture management. Ticks spend most of the time, nearly 90%, in the environment. Even though only a small proportion of the tick population is on livestock at any one time, treating cattle with a tick repellent will reduce the numbers that feed and develop into the next stage of the tick lifecycle. This will have an impact on the numbers of eggs that eventually get deposited in the pasture and helps manage the disease spread. Currently, no known acaricides are labeled for use against the ALT. The use of pesticide-impregnated ear tags, pour-ons, sprays, and back rubs that control the American dog tick and the Lone Star tick should provide beneficial tick control. There are field reports of success with macrocyclic lactone dewormers such as Cydectin® Pour-on and Dectomax® Injectable products.

- *Environmental Control to Reduce Contact with Ticks:* This involves mowing pastures, especially shaded areas, and fencing cattle from wooded areas. Perimeter fencing of a minimum of 20 feet from wooded areas will reduce the number of ticks on the grazing area. All stages of the tick like warm, damp conditions and long grass. Avoiding long rank pasture that has not been grazed such as around the edge of crops and brushy areas will reduce the likelihood of animals picking up ticks. Keep in mind that wildlife can serve as tick

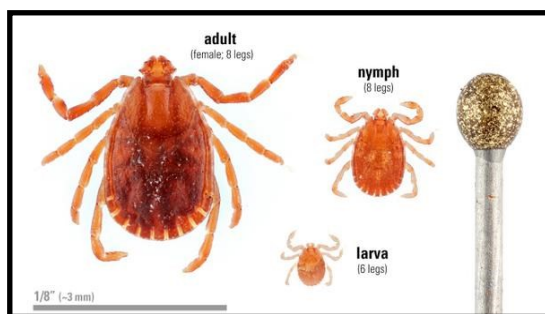


Figure 1: Three life stages of the Asian Longhorned tick sized relative to the head of an insect pin. Nymphs and adults can transmit *Theileria* to cattle. Photo used with permission from Dr. Matt Bartone, NC State

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that an adequate, but not excessive, number are being raised. Commonly, dairy herds have 75 to 80% the number of replacements compared to number of mature cows.

- Make sure to balance rations for the dry cows and heifers. If one can reduce the amount of grain needed daily by 2 lbs per head, a savings per head of approximately 550 lbs of grain can be realized over a 9-month feeding period. Just think of the feed cost savings this would result in over the stored feeding season.
- Limit feed heifers a specially formulated diet. Heifers are usually fed forages, hay, or grass-based silage more or less free choice. With limit-fed type diets, heifers are fed a higher energy diet that might contain less total pounds of forages. Thus, these heifers are fed less total pounds of feed, but receive the nutrients they need in a smaller package.

## Don't Take for Granted Ongoing Feeding Practices- Poor Habits Can Be Costly

Feeding practices impact the cost and amount of forages, grains, and other feeds used on a dairy. Feeds must be kept fresh and free of mold, stored in a manner to reduce waste, and fed in the correct amounts to ensure cows and youngstock get the nutrients they need for optimal milk production and growth. By reviewing feeding practices with those directly involved in feeding the cows and heifers, one can make the best use of financial and forage resources. Remember that this review process is one that must be continuous throughout the year.

- Make sure that the milking cows can easily reach and consume "quality feed" at all times. Pay attention to the amount of feed remaining at the next feeding, but especially at the morning feeding to ensure that feed is available overnight. If you are one that likes to feed for minimal feed wastage, cows should be fed when the bunk becomes close to "empty" and not just at the scheduled feeding time.
- If cows consume all of their TMR feed, the group should be fed as if more cows are in the group with an increase in the amount of all feeds, not just the forage or cheaper component. A feeding sheet with different numbers of cows can help make this process easier at feeding times. Feeding software programs are available to track amounts fed to groups of

## Parasite Carrying Tick ...

hosts and accelerate their spread in fields without cattle. Virginia Cooperative Extension has produced a fact sheet entitled "[Managing the Asian Longhorned Tick: Checklist for Best Management Practices for Cattle Producers](#)" that covers animal inspection, chemical control, and herd management options.

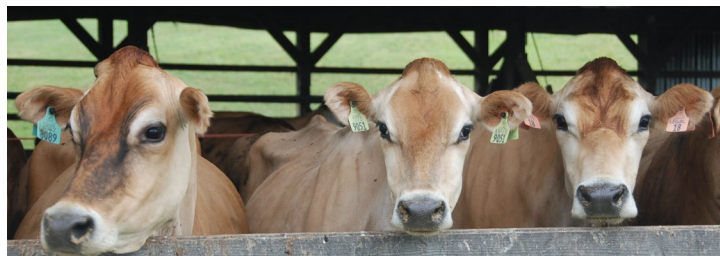
- *Ease any underlying disease or stress:* Cows in late pregnancy, early lactation and young calves (2 to 3 months old) are more susceptible to severe disease. Pay close attention to transition management, avoid trace mineral deficiencies, and vaccinate cattle against the immunosuppressive BVD virus.

cows, calculate feed usage and feed shrink on farm, and thus provide a valuable piece of information when managing the feeding program.

- Review that the proper amounts of all ingredients are added to the TMR mixer or fed to individual cows in tiestall barns. Scales should be checked for accuracy and the contents of scoops and "5-gallon buckets" should be weighed to make sure adequate, but not excessive, amounts are being fed.
- Minimize feed shrink or feed wastage at feed out (i.e. spillage) and when placed in the grain or commodity shed bin (minimize wind losses).
- Cover all silage storage structures with plastic and oxygen barrier film so that the "plastic" is in constant contact with the silage top surface (the role of tire walls that touch). Ensure that plastic remains in tight contact with the silage surface throughout the feeding year.
- At feedout or when loading silage into a TMR, remove silage from the storage structure such that a smooth, fresh silage face is left at the conclusion of removing silage for a feeding. In bunkers and piles, silage should be removed using a top down action with either a skid steer/tractor bucket or defacer. Removing silage by inserting the bucket into the middle or bottom floor of the face and lifting upward allows air to enter the silage directly behind the face and initiates silage heating and silage losses.

## Don't Become Complacent

Forage inventories, rations, and feeding practices should be continually reviewed. Many times, it is easier to put a feeding plan in place in the fall and just assume that nothing has changed as the feeding season progresses. Today's financial climate requires that one constantly look for ways to more frugally use one's resources, in this case homegrown and purchased forages and commodities. Sometimes challenges that Mother Nature provides us may be a blessing in disguise. By re-examining feeding programs and being willing to alter tried-and-true previous practices, the end result may be better and result in as, if not more, economical business practices. Sometimes we just need to make lemonade out of those lemons we are challenged with.



- *Treat "new" animals:* Treat cattle for ticks as they arrive to the farm and before moving from one property to another to avoid movement of infected ticks.
- *Young stock:* Calves should be closely inspected for ticks and signs of anemia, too.
- If you suspect a case of Theileria infection, contact your veterinarian for advice.