Dairy Connection

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■ EDITORIAL

Another summer season has quickly come and gone, and with it has come a variety of weather-related challenges affecting feed and forage. This issue addresses some of these topics. If this office can be of further assistance, don't hesitate to ask, as long as you don't ask me to change the weather or the markets. Sorry!

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The second annual Joint Dairy/Pork Convention is a ways off, but it's slated for **Nov. 28-29** in Fargo. Educational topics include crossbreeding, employing Hispanic labor, composting mortalities, and the ethanol industry's impact on our agriculture and communities. Special features include Trent Loos from Tails and Trails and Joel Heitkamp's News and Views. Participants also will have more time to spend with vendors. Plus, the convention will include the traditional awards banquet, and new this year, a $500 grand prize drawing. Mark your calendar now.

By the time you read this, we'll have recognized the fifth anniversary of the attack on the United States, known as 9/11. On that day, our lives changed forever. None of you are more aware of it than those with family and friends serving in the armed forces or Reserve. On behalf of all of the dairy community, please extend our gratitude to those who serve so the rest of us can enjoy our freedom.

Regards,

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■ FORAGES

Fall alfalfa cutting: minimize the risk

Cutting alfalfa in the fall makes the crop more susceptible to winter injury. But proper timing and field selection can lessen the risk for growers who need more forage. Agronomists at Midwestern universities list these guidelines:

- Avoid cutting during the several-week period when alfalfa is restoring root reserves prior to a killing frost. In the upper Midwest, that's usually from Sept. 1 to mid-October.
- Choose well-drained fields with high levels of soil fertility, especially potassium.

- Stands cut frequently are at greatest risk for winter injury if cut during the fall. Fall cutting will be safer if at least one cutting during the season reached flowering stage.
- Younger stands are healthier than older ones, and thus are less susceptible to winter damage if cut in the fall.
- Alfalfa-grass mixtures should be less susceptible than pure alfalfa stands.
- Alfalfa varieties with winter survival scores of 2 or lower should be most tolerant of fall cutting.
- Don't fall-cut fields with soils susceptible to heaving.
- Leave uncut strips to catch snow.

Rake design doesn't impact hay quality

The type of rake you use to windrow hay doesn't have much effect on its drying rate or quality. That's according to an Ohio State University study. The researchers compared bar, rotary and wheel rakes on an alfalfa-orchardgrass mixture and on pure alfalfa. Samples were taken prior to raking and 24 hours after round baling.

The raking and baling process lowered crude protein by 5 percent and raised neutral detergent fiber (NDF) by 6.4 percent. But rake design had no significant effect on the dry-matter content, crude protein or NDF of either type of hay.

Monitor wet hay to prevent fire

Hay fires are a danger anytime small bales are stacked at 20 percent moisture or higher, or big bales at more than 16 percent moisture. The quickest way to detect hot hay is to drive a long pipe or rod into the center of the stack. Leave it in for 20 minutes and pull it out. If it's too hot to hold in your hand, you should remove the hot hay immediately.

If you think you have a problem, monitor the stack temperature with a homemade probe. Take a 10-foot piece of steel pipe and drive eight holes about 3 inches from one end. Hammer that end together to form a sharp edge, drive the pipe into the stack and lower a thermometer to the end. Retrieve it after 10 to 15 minutes.

Check the temperature daily if it's above 120 degrees; twice a day if it's 140 to 150 degrees, say the experts. At 150 degrees, the hay is entering the danger zone; check the temperature every two hours. If it's between 150 and 160 degrees, start moving hay out of the stack. At 160 degrees or higher, call the fire department. Have firefighters on site before moving any hay.

Communicate with your clients

When you're selling hay, spelling out the exact terms of the transaction is essential to avoid misunderstandings and hard feelings. The following pointers will help make each sale a positive experience:

- Be clear about what kind of hay you have available. Discuss forage type and quality, and bale size and shape.
- Be clear about the price.
- Discuss when the hay will be delivered.
- Discuss how long you will honor the quoted price.
- Agree on when payment is due and in what form.
- Follow up on the sale. If the customer is satisfied, ask if he or she knows of other potential buyers.

Source: Dan Undersander, University of Wisconsin forage specialist

■ GENETICS

Using standardized 150-day milk

On your Dairy Herd Improvement Association Herd Summary (DHI-202) under the yearly production and mastitis summary is a column with the heading Standardized 150-Day Milk. I use this column for interpreting herd data on a regular basis. In fact, I believe this probably is one of the most important data sets on your Dairy Herd Improvement (DHI) sheets.

- **What does this value mean?**

  This value is what the milk production would be if your cows were all in their second lactation and all at 150 days in milk. It allows you to compare apples to apples.

- **Why 150 days?**

  This value is about 50 percent of the way through a lactation. Most lactations last 305 days.

- **What are the factors used in the calculation?**

  I. The value takes into account several fixed factors:

  i) Six seasons/year: January-February, March-April, May-June, July-August, September-October, November-December

ii) The age of the cow: first lactation, second lactation, and three or more lactations

iii) Two breed groups: Ayshire-Brown Swiss-Holstein and Guernsey-Jersey

iv) From this information, 36 standard lactation curves (6 X 3 X 2) are used. A standard lactation curve for each cow is used.

Based on days in milk, age, breed and season, a standard milk value (STD-MILK) is determined.

II. The value takes into account several variable factors:

i) Cows must be 330 days or less in milk

ii) Test-day milk (TD-MILK) must be known.

- **To calculate the 150-day milk, DHI uses the following equation:**

  On the respective standard lactation curve, DHI finds the 150-day milk (STD150-MILK) and STD-MILK. The equation is TD-MILK + (STD150-MILK-STD-MILK) = 150-day milk

  Another adjustment based on age and breed is made.

Lactation number	Small breeds	Large breed
1	1.13	1.10
2	1.00	1.00
3+	0.93	0.95

Therefore, the 150-day milk from above is multiplied by one of these factors to end up with the final 150-day milk.

- **How to use these values:**

  Using 150-day milk allows you to compare how your cows are maintaining production; it could be used as a measure of persistency. For instance, we all know that once a cow peaks in production, we have little we can do to keep her at that level. Biology changes the way in which nutrients get shunted. At this point in the lactation cycle, more nutrients are being used for conditioning and less for production. While the amount of milk in your bulk tank may be low, are your cows poor producers or just where they should be?

  Let's say you have a fall calving herd, and in the spring your cows average in excess of 200 days in milk. Yes, production is down from last fall, but is 150-day milk? Probably not. Compare this month's 150-day milk and the 150-day milk last fall when your cows were peaking. Are they the same? If so, your cows probably are where they should be.

  Also notice that the 150-day milk last fall was less than the average production at that time and now the 150-day milk is higher than the current production. This is normal for these herds.

- **Bottom line**

  150-day milk allows you to compare apples to apples in regard to how your herd is performing regardless of whether your cows are fresh or stale.

Source: DHI Glossary. Dairy Records Management Systems

Take a look at your genetic improvement program

Just how good are the proven artificial insemination (AI) bulls you use in your herd? Do you use AI more or less than other herds? Do you rely on AI young sires more or less that average, and just how good are they compared with proven bulls?

Check your herds' figures by looking at the "Genetic profile of service sires" on the DHI herd summary 202. Good goals for a herd breeding program would be:

1. Rely on proven AI sires for 80 percent to 85 percent of all services.
2. Strive for average rank for proven bulls above the 80th percentile.
3. Use AI young sires for remaining services with no services to "other" bulls.

Source: G. Cassell, Extension Dairy Scientists, Virginia Cooperative Extension

■ MILK QUALITY

Health Canada reminds Canadians about the risks of drinking raw milk

Health Canada is reminding Canadians not to drink raw (unpasteurized) milk because it could contain bacteria that can make you seriously ill. That applies in the United States as well.

Several different kinds of bacteria that could be found in raw milk, such as salmonella, E. coli and listeria, have been linked to foodborne illness. These bacteria can lead to very serious health conditions, ranging from fever, vomiting and diarrhea to life-threatening kidney failure, miscarriage and death. Children, pregnant women, the elderly and individuals with compromised immune systems are particularly at risk.

Because of these health concerns, U.S. Food and Drug Administration regulations require that all milk available for sale be pasteurized. Pasteurization kills the organisms that cause disease while keeping the nutritional properties of milk intact. Raw milk has not been treated to make it safe, but instead has been refrigerated at the farm where it was collected. Milk is an important food and contains many nutrients essential for good health, especially calcium and vitamin D.

Unpasteurized milk historically has been linked to many serious diseases. However, the number of foodborne diseases from milk has decreased dramatically since pasteurization was introduced in the early 1900s.

The sale of raw milk has been strictly prohibited under the FDA regulations since 1991. Raw-milk cheese is allowed for sale and considered safe because the manufacturing process for cheese helps eliminate many pathogens found in raw milk.

Although raw milk is not allowed to be sold in Canada and the United States, people have become ill after drinking raw milk when visiting farms. Some dairy farmers also are consuming milk from their own animals. While pasteurized milk is the standard, some continue to prefer raw milk because of perceived health benefits. However, any possible benefits are far outweighed by the serious risk of illness from drinking raw milk.

Source: Health Canada

■ CALVES

Don't forget to 'water' your calves

Water is **the** most important nutrient; it makes up 70 percent to 75 percent of the weight of a calf. We are very careful not to limit water availability to lactating cows, dry cows and heifers, but preweaned calves often seem to be overlooked in respect to water requirements. One week after birth, calves should have access to free-choice, fresh water. To maximize growth and health prior to weaning, some producers invest in higher-quality milk replacers and calf starters. Likewise, feeding milk to calves is expensive even when milk prices are low. So why invest in milk, milk replacer and starter and then limit the single most important nutrient? Water!

Complications from dehydration are a leading cause of calf mortality

Calves are susceptible to digestive upsets due to their immature immune and digestive systems. Providing fresh water to calves helps keep them hydrated, which in turn assists in treatment. Research has shown that calves with access to free-choice water (in addition to milk replacer) consumed more starter grain and had a higher weaning weight than calves fed no additional water.

Calves need fresh water, not 3-week-old, swampy water, and it shouldn't be contaminated with feed or manure. Dumping water buckets daily, during feeding, and cleaning them if needed, are good practices. Between feedings, some producers opt to offer water in the same buckets in which the milk is fed. While better than no water, this practice leads to dirty milk buckets with the potential to harbor bacteria since they never are allowed to dry.

How much milk or milk replacer do you feed each day? One gallon? How does that compare with the recommendations below? So when investing in calves, don't forget water; it's not expensive, but it is vital.

Holstein Calves

Age	Gallons/day
1 month	1.3-2.0
2 months	1.5-2.4
3 months	2.1-2.8
4 months	3.0-3.5

Adapted from: Adams, R.S. 1986. Water Quality for Dairy Cattle. Penn State University

Use gentle persuasion

How employees greet new calf arrivals makes a big difference in how quickly they adjust to their new surroundings. Calves already are scared from the trip and often are hesitant to step off the trailer. Unfortunately, this hesitancy sometimes leads employees to drag calves off by their ears. This, in turn, further raises calves' blood cortisol levels. The result is that calves take longer to settle in and start eating again.

All employees should be trained to walk into the trailer, gently move any hesitant calves out and never use calves' ears as handles.

Source: Jim Reynolds, service chief of dairy production medicine at Vet Medicine Teaching and Research Center, Tulare, Calif.

What do your calves say?

If you walk into the calf area and it's not feeding time, do the calves bawl? If so, they are saying "feed me!" Well-fed calves do not bawl when someone walks into the area - unless it is time for their next meal. So, if it's not feeding time, and your calves routinely bawl at your arrival, it's time to re-evaluate your feeding program. An abrupt change in the diet is a recipe for potential problems with *Clostridium perfringens*, which can lead to abomasal bloat in calves. Calves can tolerate a lot, but we need to acclimate them.

Source: Sheila McGuirk, veterinarian at University of Wisconsin's School of Veterinary Medicine.

■ HEIFERS

When to start breeding heifers

Not sure when to start breeding heifers? You should wait to start breeding heifers until they have achieved these milestones:

- Heifers are sexually mature, with two or more estrous cycles completed since puberty.
- Heifers are at least 12 months of age.
- Heifers have reached 55 percent to 60 percent of mature body weight. In Holsteins, that is about 800 pounds.
- Heifers have achieved adequate frame size. In Holsteins, this equates to a wither height of about 49 inches.

Source: Jose Santos, associate professor, Vet Medicine Teaching and Research Center, Tulare, Calif.

■ SIX THINGS TO ASK A HEIFER GROWER

Before you send your heifers off for someone else to rear them, always ask the following:

1. What experience do you have raising heifers? Can I see your records on calf performance?
2. If you are a former dairy producer, can I see the records from your heifer enterprise?
3. What type of identification system will you use? *(A minimum of two permanent ear tags is recommended.)*
4. What is the average daily gain of the heifers you raise? *(The goal should be 1.75 pounds per day.)*
5. Do you have the ability to work and manage heifers to get them bred in a timely fashion? *(Examine the breeding and feeding facilities.)*
6. What are your established health protocols for calves – before they arrive at your place and after?

If the potential heifer grower can't or won't answer these basic questions, looking elsewhere might be best.

Source: D. Gardner, veterinarian and professional heifer raiser

■ NUTRITION

Your feeding program during low milk prices

Feeding involves many decisions that impact both income and expenses, especially when milk prices are low. The first reaction might be to reduce supplement feeding, as this is the largest purchased expense for most farms. However, its impact on income might be greater than the savings realized. The dairy business can learn a great deal from the feedlot business. Notably, the tight profit margins in feedlots have demanded that feed managers become shrewd businesspeople. Following are some feedlot tips that could well apply to the dairy feeding program:

1. Closely examine all additives in the ration, particularly those high in dairy cost, whose benefits are not supported by documented research.
2. Feedlots focus on the five "R's" for good feed management. They are:

   ➜ Right feed
   ➜ Right pen
   ➜ Right amount
   ➜ Right time
   ➜ Right way

   Right feed – Ration formulation is only as good as the information provided to the nutritionist. Allocate the best forages to the transition and high-producing herds. Measure dry-matter percent on at least a weekly basis for all fermented and wet byproduct feeds. (To accomplish this, use a Koster tester or a microwave oven.) Make ration adjustments to maintain the desired dry-matter intake.

   Right pen – Providing the best feeding environment is essential. Feed bunks should be protected from

the effects of sun, rain and excessive heat. Soakers are recommended during the heat of the summer. Clean up refusals every day and remove spoiled feed. Clean water tanks on a daily (or every other day) basis.

Right amount – Most dairies feed for 5 percent to 10 percent refusal, which encourages dry-matter intake for the milking herd but results in a significant amount of refusal that must be discarded. (Remember, refusals fed to the heifer can spread diseases, such as Johne's.) Many feedlots feed to a clean bunk, with cattle consuming the last amount within an hour of the next feeding. This is challenging and requires a feed manager/bunk manager adept at predicting intake patterns of the herd.

Right time – Cattle thrive on consistency. Feeding groups within minutes of the same time each day is critical. This also applies to other areas of the operation, such as milking and lot scraping.

Right way – A key to promoting intake and digestive health is reducing variability. Rations should be mixed in the same order each time and delivered in a uniform manner down the bunk. Dairies should evaluate particle size through spot checks on a weekly basis to make sure that mixing time is not too long or short. Accurate delivery of the total mixed ration (TMR) requires experience to prevent wasteful pileups of TMR at the end of the bunk.

The "R's" listed above may seem like common sense but are critical to achieving consistency in a feeding program. Excessive variability in rations leads to displaced abomasums, ketosis and other metabolic disorders that rob cows of high peak milk and lactation yield.

Source: Dairy Pipeline.Vol.27, No. 5 June 2006. Virginia Cooperative Extension

■ MANAGEMENT

What do top managers do right?

A recently published survey of high-producing herds in Michigan doesn't reveal any silver-bullet strategies for milk production. Instead, researchers found the managers of 18 herds with annual rolling herd averages of more than 28,000 pounds consistently paid a lot of attention to many fine details at once.

The diets, nutrient composition and ingredients fed by these herds were not unusual. However, all herd managers emphasized a high degree of daily attention to feeding, nutrition and overall herd management. They managed with a high degree of intensity and paid attention to all aspects of managing the herd.

Extended lighting increases milk yield

An on-farm trial further supports that supplemental lighting boosts milk production of mature cows. The study took place on a high-producing dairy in California's San Joaquin Valley. The trial began at 21 days in milk. Cows exposed to supplemental lighting received 17 hours of light and seven hours of dark.

The results, published in the December 2005 issue of *The Professional Animal Scientist*, show nearly an 8-pound increase in milk yield in mature Holsteins exposed to supplemental lighting versus mature herd mates exposed to natural lighting (12 hours of light). However, supplemental lighting had no effect on the milk yield of first-lactation animals. Feed intake did not differ for mature cows and first-lactation cows exposed to supplemental or natural lighting.

	Milk Production (pounds/head/day)	
	Supplemental lighting (17 hours light)	**Natural lighting (12 hours light)**
Mature cows *(Second lactation or greater)*	110.7	102.8
First-lactation cows	72.8	72.5

How to handle bulls

Even if you only use bulls as "cleanup hitters," you still need to establish some basic bull-handling guidelines. Then, train all of your employees on these techniques.

- Never handle a bull by yourself.
- When moving a bull, talk to him or make noise as you approach.
- Try to keep a few cows with him when moving him from one pen to another.
- Carry a cattle paddle or something that you can wave to make yourself appear larger.
- Never turn your back on a bull.
- Calm handling is key; don't shout.

Source: www.DAIRYHERD.COM

MISCELLANEOUS

More Dairy Around the World quiz

1. Where was cheese invented?

(a) United States
(b) Middle East
(c) Africa
(d) Europe

2. How many cattle breeds exist?

(a) 25
(b) 75
(c) 110
(d) More than 140

3. Which of the following animals is not milked for human use?

(a) Llama
(b) Goat
(c) Sheep
(d) Horse
(e) Donkey
(f) Reindeer
(g) Pig

Answers at right.

Source: The Progressive Dairyman. September 2005

1. (b)
A legendary story has it that cheese was "discovered" by an unknown Arab nomad more than 4,000 years ago. The traveler filled a saddlebag with milk to drink on a journey across the desert by horse. After several hours of riding, the nomad stopped for a drink, only to find that the milk had separated into a pale, watery liquid and solid white lumps. Because the saddlebag, which was made from the stomach of a young animal, contained a coagulating enzyme known as rennin, the milk had separated into curds and whey by the combination of the rennin, the hot sun and the galloping motions of the horse. The traveler found the whey drinkable and the curds edible.

2. (d)
More than 140 cattle breeds exist.

3. (g)
Pigs are not milked. They don't have the same milk letdown reflex as other animals. Besides, they would be too difficult to catch, and the milk stool would be very short.

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You might be a dairy farmer if:

- ✔ You know the price of milk per hundredweight but not by the gallon.
- ✔ The medicine cabinet contains a container of Bag Balm.
- ✔ You've ever gotten an award for fat (and were proud of it).
- ✔ Your idea of a power lunch is a sandwich on a tractor.
- ✔ Your idea of a neighborhood watch is someone calling you to let you know your heifers are out.
- ✔ You have more than a dozen cats.
- ✔ Your idea of overnight delivery is pulling a calf at three in the morning.
- ✔ You can remember the name of every cow on your farm but the names of your children elude you.
- ✔ Manure is a dinner table topic.
- ✔ Your backyard ends at an electric fence.