

DAIRY CONNECTION

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EDITORIAL

The long-awaited announcement from the North Dakota Dairy Coalition, hiring its first executive director, is now history. If you caught the news conference or attended one of the Farm Yard Socials, you already know that Gary Hoffman, longtime North Dakota dairy promoter and an industry leader, accepted the challenge in July.

Many of you have already expressed your approval of our choice and I couldn't be happier that someone with Gary's experience, common sense and contacts has chosen to take the helm of the ship, the N.D. Dairy Coalition (NDDC), and set sail for our future. See the NDDC insert.

Speaking of our industry's future, plan now to attend the Milk Producers Association State Dairy Convention, slated for Nov. 18-19 at the Seven Seas in Mandan. This year's theme, "A New Tomorrow," will feature a variety of topics from farm

to family. Highlights include a humorous look at ourselves and the dairy tour. Put the enclosure in a prominent place.

Regards,



J.W. Schroeder, Extension Specialist-Dairy
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FORAGES

Fall is the time to test your hay

Given the wide variety and condition of hays that will be fed in North Dakota this winter, not to mention variable livestock and environmental conditions, it is highly advisable you test your forages.

• Why test hay and forages?

Hay and other stored forages are a major feed. Producers routinely should get a representative analysis of all hay. Hay inspection and forage analyses have helped assure buyers of hay quality. Hay is fed in large quantities, and thorough forage testing is the first step to design a feeding strategy. Hay delivers energy, protein, vitamins and minerals to cattle, sheep and horses, and these measures of hay can be tested accurately and inexpensively.

• How do I sample?

Every hay lot should be sampled separately. A hay lot is defined as hay taken from the same field and cut, harvested within 48 hours, and stored under the same conditions. It may range from a pickup load to 200 tons. Samples are best obtained using a hay probe to randomly sample bales within a stack. The probe tip, which should be sharp, is inserted 12 to 18 inches into bales. Square bales should be sampled near the center of their ends, and round bales should be sampled on round edges. A minimum of 20 random cores should be collected at different heights in a haystack and combined. Every effort should be made to obtain a random and representative sample, otherwise the forage quality analysis may not be representative of what actually is fed. The composite sample from each hay lot, which will be ½ to ¾ pound, should be mixed, sealed in plastic bags, labeled and submitted to a forage-testing laboratory.

Many labs are available for forage quality analyses. Most commercial hay producers use laboratories certified for proficiency through the National Forage Testing Association. Hay sampling and forage analyses now are offered as a service by many feed companies for those who routinely purchase supplements and feed additives.

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- **What tests should be run on hay?**

The definition of hay quality is the potential of a forage to produce a desired animal response. Hay quality includes palatability, digestibility, intake, nutrient content and anti-quality factors. The primary forage quality tests to request are crude protein (CP), acid detergent fiber (ADF) and neutral detergent fiber (NDF). Crude protein levels of alfalfa and grass/alfalfa hays in North Dakota typically range from about 2 percent to more than 9 percent, but in some cases protein supplements may be required. The ADF component is cellulose, lignin and ash. Low ADF values are correlated to increased digestibility. The ADF value can be used to estimate total digestible nutrients (TDN), and net energy predictions for maintenance, growth or lactation. The NDF consists of cell wall components; a low NDF value is correlated with potential high intake levels. Daily dry matter intake (DMI) as a percent of an animal's body weight can be estimated directly from the NDF values. Labs use a variety of accepted testing procedures. The cost for analysis of CP, ADF and NDF ranges from about \$15 to \$40, with a turnaround time of two to 14 days, depending on the laboratory.

Other useful analyses include calcium, phosphorus, potassium and magnesium, and sometimes the trace minerals copper and zinc. Nitrate concentration is an example of an anti-quality forage factor. Many of our small-grain hays (barley, hay barley, oat and wheat) can accumulate toxic levels of nitrate, particularly when grown under stress conditions. If using stressed forages, I recommend they be tested for nitrate concentration prior to feeding.

When the forage analyses come back from the laboratory, it is time to use the information to balance rations to provide desired levels of productivity (late gestation, early lactation, replacement heifers, etc.).

Put a lid on losses

Putting a roof over your hay can increase its quality significantly, according to research from Louisiana State University. But if you can't afford a shed, tarping is the next best thing to increase both quality and intake, according to David Sanson, cattle nutritionist at the university's Rosepine research station. Hay stored in a barn retained 25 percent more TDN and crude protein compared with hay stored outside. Hay stored under tarps retained 10 percent more nutrients.

The losses will mount when the hay is fed, says Sanson. An earlier Louisiana study revealed that as much as 50 percent of hay is wasted when outside storage losses are combined with increased wastage by livestock. His studies involved round bales of ryegrass hay grown for cow-calf and stocker cattle programs. Even though its overall quality was lower than that of high-quality alfalfa, he feels the quality-loss comparisons would be comparable for all types of hay.

The study gauged the amount of TDN, crude protein and dry matter lost from hay stored for six months. Hay stored in a barn lost only 1.9 percent of its harvested TDN, compared with 10.5 percent lost from the tarp-covered hay stacked outdoors in a pyramid manner. Uncovered hay had a 26.7 percent loss in TDN. Crude protein losses were 25.6 percent for uncovered hay, 10.8 percent for tarped hay and only 3.1 percent for barn-stored forage. The amount of harvested forage weight lost for the tarped hay was nearly 14 percent. That compared with just

more than 4 percent weight lost for barn-stored hay. "Within five or 10 years, savings should easily pay for a barn 40 feet by 112 feet needed to store about 300 round bales."

No doubt the temperature and moisture of Louisiana will have a negative impact that is greater than the cooler, generally drier conditions of North Dakota. Nonetheless, it points out that losses are eminent. Depending on the price and availability, a roof over your best quality hay can make a big impact on quality and losses that will be reflected in lower milk yield and additional supplements. If a hay barn is not financially possible, a tarp is a cheap alternative and much better than storing the hay unprotected. The cost of the tarp could be recovered in about one year.

Source: Larry Stalcup, Hay & Forage Grower

■ CALVES AND HEIFERS

Colostrum management

Sometimes when I start to discuss colostrum management with a client with calf problems, I can see his eyes start to roll back in his head as if to say, "Yeah, yeah, yeah — how many times do I have to hear this discussion?" Such was the situation last month while doing a walk-through of a dairy farm to do a risk assessment for a state Johne's test program. Part of the management of Johne's is to get clean colostrum from a test negative dam into the calf as soon as possible after birth while removing the calf from the contaminated adult environment ASAP.

While doing this part of the assessment, it became apparent that often eight to 10 hours elapsed before the cow was milked and colostrum was fed to the calf. So not only was the calf not getting colostrum as soon as it should, but the cow was experiencing a fair amount of delay before the first colostrum was being milked out. The birth event kicks a process into place starting gut closure in the calf and antibody reabsorption from the udder back into the bloodstream in the cow. Therefore, the more time that elapses after birth, the fewer antibodies the calf can absorb and the fewer antibodies the cow has to offer. This effect is additive. My client was having Roto Virus scour problems in his calves, so we pulled some clotted blood samples and checked the total protein. Only two out of six were above 5 grams per deciliter, where they should have been.

I also found extra colostrum sometimes was being stored in the refrigerator for days before being fed to some calves. As a rule, if colostrum isn't fed in 12 hours, it should be frozen. An efficient way to do this is in heavy-duty gallon-size zip-lock bags. They stack easily and have a large surface area so they thaw quickly in a 5-gallon bucket of hot water. The cow's ID and collection date are written on the outside with a waterproof felt-tip marker. The refrigerated colostrum above was cultured, and a standard plate count revealed bacteria counts in four containers at about 5 million per cc. This would cause food poisoning in people.

The above deficiencies were corrected this last month, and I am happy to report that things are better. Sometimes the unglamorous basics are more important to solve major problems, whether we want to admit it or not.

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Labor efficient pasture management

Pasture systems offer the opportunity for better health for the growing heifer, and the chance to use more marginal land for productive purposes. Improved economy of rearing is widely touted as a benefit. A custom heifer grower in Minnesota (Rudstrom, 2002) compared heifers grown on feedlot and pasture systems. Heifers averaging 480 pounds were divided into four groups of 36 each. Two groups were reared on feedlot systems and two were put onto alfalfa pasture from May 13 to Oct. 5. Feedlot heifers were fed a TMR and heifers on pasture were grazed rotationally and received some supplementation. Rates of gain were similar for both systems, but net costs were \$1.49/heifer/day for the feedlot system and 95 cents/day for those on pasture.

This article can be found in its entirety in the Eighth National Dairy Calf and Heifer Conference Proceedings on page 115. You may purchase the Conference Proceedings by visiting the PDHGA Web site at: www.pdhga.org or call (877) 434-3377.

MANAGEMENT

Tail painting an economical and effective heat detection system

A major factor limiting optimum reproductive performance on many farms today is the failure to detect estrus in a timely and accurate manner. Increases in herd size and milk yield have been implicated as contributors to the decreased reproductive efficiency experienced today. For example, during the past 10 years, the average Virginia DHI dairy herd has experienced a 35 percent increase in milking cows and a 20 percent increase in milk yield per cow without the same increase in additional labor force. During this same time period, the average calving interval has increased from 13 to 14.5 months. This decrease in reproductive efficiency conservatively cost \$12,000 per year per herd, if one assumes a \$2 loss per each day open beyond 115 days and an average herd size of 135 cows. This is not even taking into consideration the additional losses of fewer replacements, increased labor, fewer cull cows and increased drug and veterinary expenditures. Our research, with the electronic heat detection system HeatWatch, has reported that the "average" Holstein cow is mounted seven times during the seven hours of "standing" heat. During the summer months, mounting activity decreases to five standing events and high producing cows express shorter and less intense standing activity than lower producers.

Why tail paint

- Correct use of tail painting identifies almost 90 percent of cows in standing heat.
- Tail painting picks up cows that are standing only for a short time and otherwise would be missed.

How to tail paint

- Use commercially available, specifically formulated products (house paint may not rub off correctly, water-based paints won't last). Contact your A.I. representative; all sell an acceptable product for tail painting.
- Apply paint to cover those points near the head of the tail that will be rubbed off by the brisket of the riding cow.

- A strip about 2 inches wide and 6 inches long painted along the ridge of the backbone immediately above the tail is recommended.
- Remove loose hair and dirt before applying tail paint. Do not apply paint too thickly.
- Check the paint strip at each milking or during lockup if head locks are available. In 90 percent of cases, most of the paint is needed for these cows. Paint rarely is removed by occasional mounting of cows not in standing heat.
- Cows detected on heat and then inseminated should not be repainted until the following milking. Use a different color when repainting inseminated cows. Then unmated cows are easier to identify.
- Tail paint should last four weeks unless the coat hair becomes loose with shedding. Touch-ups with brush or aerosol tail paint are required if this happens.

When to use tail paint

- Three weeks before the voluntary waiting period (50 days in milk if start breeding at 70 days), tail paint can be used to identify noncycling cows early.
- At the voluntary waiting period, every cow in the breeding herd should be painted.
- You may want to use one color for cows prior to the voluntary waiting period, one color for cows after the voluntary waiting period and before first service, and one color for cows that have been inseminated.

Source: Ray L. Nebel, Virginia Extension Service

Reproductive management workshop

If you were interested in the 'tail painting' article, you will want to consider the upcoming reproductive management workshop sponsored by Heart of America DHIA. It features Dr. Ray Nebel, extension dairy specialist in reproductive management for Virginia Tech., author of the above article. Dr. Nebel will conduct the joint North Dakota-South Dakota presentation on Monday, Nov. 15, at the Midwest Dairy Institute in Milbank, S.D. More information available soon, or contact Jason Richie, district manager, N.D.-S.D., (800) 383-4762.

BIOSECURITY

Programs help protect herd from pathogens

One of the 10 steps in the NMC Recommended Mastitis Control Program is "Maintenance of Biosecurity for Contagious Pathogens and Marketing of Chronically Infected Cows," which includes the following points:

1. When available, request to see bulk tank and individual cow SCC data or use California Mastitis Test (CMT) prior to purchasing new cows.
2. If possible, obtain aseptically collected milk cultures from suspect cows prior to purchase.
3. Isolate recently purchased cows and milk separately until there is assurance of the absence of intra mammary infection.
4. Segregate cows with a persistently high SCC or linear score (e.g., SCC greater than 300,000 or linear score greater than or equal to 5.0 for several months) and observe response to dry treatment or other recommended therapy.

A Cowboy's Guide to Life . . .

Don't corner something meaner than you.
 It don't take a very big person to carry a grudge.
 You can't unsay a cruel thing.
 Every path has some puddles.
 When you wallow with pigs, expect to get dirty.
 The best sermons are lived, not preached.

– author unknown

5. Market or permanently segregate cows persistently infected with *Staphylococcus aureus* or other nonresponsive microbial agents such as *Mycoplasma*, *Nocardia*, *Pseudomonas* or *Arcanobacterium pyogenes*.

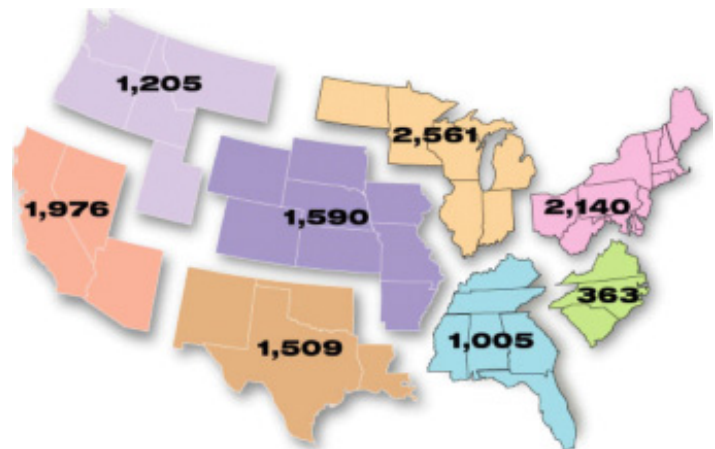
You can find all 10 steps of the NMC Recommended Mastitis Control Program at www.nmconline.org/docs/NMC10steps.pdf. Copies may be downloaded and distributed for educational purposes at no charge.

Background on BSE Surveillance

The table below details the past goals of the U.S. surveillance program for BSE, in place since May 1990. USDA's approach to BSE surveillance is representative of the distribution of the adult cattle population. Regions' goals and their respective regions (graphic) were constructed based on the movements of adult cattle going to slaughter.

The goal of testing 12,500 samples was established to detect one BSE-infected animal per million cattle and "is an effective,

	FY01 Goal	FY01	FY02 Goal	FY02	FY03 Goal	FY03
NW	564	695	1,205	2,224	1,205	781
SW	466	564	1,976	2,753	1,976	3,645
C	766	332	1,590	2,356	1,590	2,638
SC	734	872	1,509	1,810	1,509	1,690
NC	606	620	2,561	3,780	2,561	5,620
NE	462	805	2,140	2,190	2,140	2,595
E	312	401	363	1,381	363	514
SE	644	953	1,005	3,156	1,005	2,800



scientific approach designed to take into account regional differences while striving for uniform surveillance throughout the country."

For fiscal year 2004, APHIS already had performed 15,513 samples under this prior system. An enhanced BSE surveillance plan, incorporating rapid tests at licensed facilities, was announced March 15, 2004, and implemented June 1. APHIS reports a total of 2,871 tests have been completed to date, all negative.

Dr. Jon Van Berkomp will unveil the North Dakota surveillance program at the State Dairy Convention in November. *See insert for detail.*