Virginia Cooperative Extension

A partnership of Virginia Tech and Virginia State University

VirginiaTech
College of Agriculture and Life Sciences

School of Agriculture
Virginia State University

DAIRY PIPELINE

Volume 32, No. 7 September 2011

Department of Dairy Science
Blacksburg, VA 24061
540/231-4762 Fax: 540/231-5014
www.vtdairy.dasc.vt.edu

"...larger herds can justify more intense sampling of feeds in order to better control nutrients offered and make changes more frequently."

DETERMINING THE FREQUENCY OF MEASURING DRY MATTER AND NUTRIENT CONTENT OF FORAGES

First, dry matter content should be determined on a regular basis in order to know the amounts of high moisture feed (silages) to offer or include in your TMR. This can be done weekly or more often and should be determined on the farm in many cases. Moisture testers with scales are available commercially to do this (www.eNasco.com/farmandranch), but a microwave oven can also be used. Weighing both before and after moisture removal allows one to calculate the percent of dry matter. It is important to prevent charring or burning which indicates that organic matter is being lost. Since there is some variation from day to day in dry matter content it might be advisable to determine dry matter content for three consecutive days and then take the average for ration adjustment.

In addition, the nutrient profile (protein, fiber, energy, and minerals) needs to be determined by a commercial lab on a regular basis. In the past we usually recommended testing every 4 to 6 weeks or when feeds changed. Ohio State researchers (St.-Pierre and Weiss) have used projections of feed costs and milk production reductions to modify the recommendations to vary with herd size (see Figure 1). For a 50 cow herd sampling once a month is acceptable. However, a 1600 cow herd could justify testing three samplings every 4 days or 21 analyses a month. A 400 cow herd could justify three samplings every 7 days or 12 a month. Granted, this does seem a little intense and most herds would not adhere to such a strict testing protocol. Wisconsin researchers (Hoffman, Shaver, and Dyk) have modified these recommendations (see Figure 2) and suggest that sampling every 10 days in the 400 and 1600 cow herds will result in adequate quality control. They did suggest that duplicate samples be taken at each sampling for a total of 6 per month on which to base changes to rations. They also indicate that if nutrients vary by less than 5% it is possible to average the new and old values in order to reformulate the diet. If the new results have changed by more than 5% they should be used if it is considered the results are real and not a result of improper sampling. See the VTDairy web site for recommended sampling protocol located at: www.vtdairy.dasc.vt.edu.

Figure 1. Forage sampling frequency optimized by herd size.

	No. of Milking Cows in Herd					
	50	100	200	400	800	1600
Interval between sampling, days	30	16	11	7	5	4
No. of sampling days per month	1	2	3	4	6	7
No. of samples per sampling day per forage	1	2	3	3	3	3
No. of samples per month per forage	1	4	9	12	18	21

Figure 2. More conservative sampling schedule relative to the optimum. *(Modified)*

	No. of Milking Cows in Herd					
	50	100	200	400	800	1600
Interval between sampling, days	30	15	15	10	10	10
No. of sampling days per month	1	2	2	3	3	3
No. of samples per sampling days per forage	1	1	2	2	2	2
No. of samples per month per forage	1	2	4	6	6	6

In conclusion, larger herds can justify more intense sampling of feeds in order to better control nutrients offered and make changes more frequently. This can result in less overfeeding and loss of milk production when rations are out of balance. Knowing the current nutrient content of your feeds is important, so take advantage of the tools available.

—Charlie Stallings,
Extension Dairy Scientist,
Nutrition & Forage Quality
(540) 231-3066; cstallin@vt.edu

1. Hoffman, Pat, Randy Shaver and Paul Dyk. 2010. Forage Sampling Frequency as Influenced by Dairy Herd Size. Focus on Forage, Vol 12: No. 3.
2. St.-Pierre, N. and W.P. Weiss. 2007. Understanding feed analysis variation and minimizing its impact on ration formulation. Proc. Cornell Nutr. Conf. Syracuse, NY.
3. Weiss, W.P., and N. St.-Pierre. 2009. Impact and management of variability in feed and diet composition. Proc. Tri-State Nutr. Conf. Ft. Wayne, IN.
4. Weiss, W.P. and N. St.-Pierre. 2007. Understanding and managing variation in nutrient composition. Proc. Western Dairy Herd Mgmt. Conf. Reno, NV.

Upcoming Activities

Sept. 30 (Friday)—State Fair Junior Dairymen's Contest. Doswell, VA. Contact Dave Winston, dwinston@vt.edu or 540-231-5693.

If you are a person with a disability and require any auxiliary aids, services or other accommodations for any Extension event, please discuss your accommodation needs with the Extension staff at your local Extension office at least 1 week prior to the event.

"For a dairy producer the Dairy Challenge experience is comparable to having a 'check-up' using a panel of trusted advisors to evaluate herd management."

For more information on Dairy Extension or to learn about current programs, visit us at VT Dairy —Home of the Dairy Extension Program on the web at: www.vtdairy.dasc.vt.edu.

R. E. James

Bob James,
Dairy Extension Coordinator &
Extension Dairy Scientist,
Dairy Nutrition

Lessons Learned from the Dairy Challenge

The North American Intercollegiate Dairy Challenge is a dairy management contest that tests university students' skills in evaluating all phases of dairy enterprise management. Areas for evaluation include, but are not limited to, nutrition, milking management and mastitis control, reproduction, replacement heifers, genetics, cow comfort, nutrient management, and finances. The Dairy Challenge was established in 2002 by a group of dairy industry leaders who wanted to develop a platform for future dairy leaders to demonstrate and hone their skills related to dairy management.

The mission of the Dairy Challenge is, "To facilitate education, communication and an exchange of ideas among students, agribusiness, dairy producers and universities that enhances the development of the dairy industry and its leaders." Each year, four regional contests and a national contest are conducted. To date 2,000 students have participated in regional events and 1,075 students have competed in the national contests.

Regional events mix and match students from different universities to create teams consisting of four or five members. At the national contest, university teams consist of four students. For herd analysis, students use data from DHI and on-farm records (printed reports and electronic form), an overview of the herd, ration information, financial information, observations from a site visit, and a question and answer session with the dairy producer. After sorting through the information, they develop a presentation to summarize their findings that address strengths and opportunities of the dairy operation. Student teams present their findings as if they are consultants for the dairy operation.

A panel of experts evaluates student presentations. The typical panel consists of a dairy producer, agricultural lender, nutritionist, reproductive specialist, and veterinarian. The experts have access to the same information as the students. Teams are evaluated on the material presented, presentation and visual aids, preparation and organization, and response to questions.

The educational approach used by the Dairy Challenge certainly has application for dairy producers outside of a contest environment. There are many lessons that one can learn from the Dairy Challenge related to evaluation of the dairy enterprise.

►For a dairy producer the Dairy Challenge experience is comparable to having a "check-up" using a panel of trusted advisors to evaluate herd management. Input from outside individuals can offer fresh perspectives on an operation's strengths and opportunities.

►The Dairy Challenge uses a team approach to problem solving. Collective thinking is, more often than not, more effective than individual thinking. A consultant team consisting of members with varied expertise might include a nutritionist, veterinarian, extension agent, crop advisor, and agricultural lender.

►Critical thinking skills are important. One must use a variety of information sources when evaluating the dairy enterprise including DHI records and other production records, financial records, sensory information (what you see, smell, hear, touch), personal experience, others' experiences (advisors), history of the operation, and available resources.

►Setting priorities will result in the greatest progress. Identification of opportunities on an operation may result in a lengthy list that may be overwhelming. It is critical to identify two or three areas with the greatest impact on profitability as a starting point.

►Dairy enterprise management is all-inclusive, meaning that changes in one area of management can impact other areas. Financial implications must always be considered.

►Evaluation may be even more helpful when the dairy operation is considering any type of major changes such as construction of new facilities, ownership transition, herd expansion, or outsourcing heifers.

Many successful dairies are already using this management team approach. Producers who have participated in the Dairy Challenge repeatedly comment on the value of the input they receive from the panel of experts and the student teams.

Additional information about Dairy Challenge is on-line at www.dairychallenge.org. The 2012 North American Intercollegiate Dairy Challenge will be hosted by Virginia Tech and North Carolina State University at the Hotel Roanoke and Conference Center March 29-31. Students representing as many as 32 universities are expected to participate.

—Dave Winston
Extension Dairy Scientist &
Dairy Youth Program Coordinator,
(540) 231-5693; dwinston@vt.edu