Virginia Cooperative Extension
A partnership of Virginia Tech and Virginia State University

VirginiaTech
College of Agriculture and Life Sciences

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DAIRY PIPELINE

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

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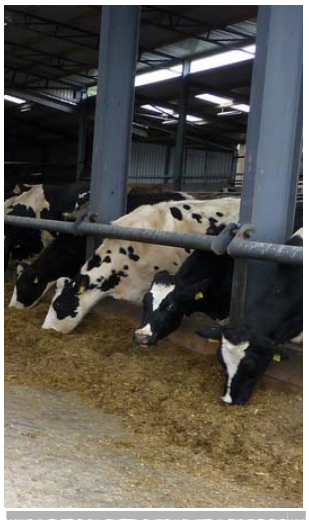

"We are particularly interested in the transition period around calving due to the high incidence of metabolic diseases and the profound economic impact these have."

Photo courtesy of Flickr

Feed Efficiency: What does it mean to you?

Feed efficiency can be defined as milk produced per unit of dry matter consumed. That could be lbs. of milk per lb. of dry matter consumed. Some programs will also correct for the solids content of the milk. Knowing dry matter intake of the herd or group is important if using this calculation.

What are the benefits of being more efficient? One would be lower cost per unit of milk produced by feeding closer to the cow's nutrient requirements. Another benefit would be reduced excretion of excess nutrients such as nitrogen and phosphorus, potential pollutants in waterways.

How can efficiency be increased? Generally increased milk production and/or greater solids in milk will increase your efficiency. That means production enhancements such as 3X milking, feeding fat, or monensin would many times increase efficiency. Improving forage quality can also be effective. Also grouping cows and feeding closer to their nutrient requirements would theoretically result in increased efficiency.

When monitoring a herd or group of cows the composition of the group can have an effect. Things such as days in milk, lactation number, body weight, and environmental factors such as temperature can impact feed efficiency. We would expect a one group herd to have, approximately, a feed efficiency of 1.5 lbs. of milk produced per 1 lb. of dry matter consumed. Early lactation groups may be 1.8:1 and late lactation 1.3:1.

"Generally increased milk production and/or greater solids in milk will increase your efficiency."

If you are interested in more information about how to calculate feed efficiency please contact me at 540-231-3066 or email: cstallin@vt.edu.

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

Can activity measures predict disease in dairy cows?

Pedometer systems have been used for years to observe estrus behavior by simply monitoring steps taken. However, new pedometers (PedometerPlusä) have been developed to capture, not only steps taken, but also time spent lying, time spent standing and changes from lying to standing. Our Virginia Tech Dairy Center was donated the PedometerPlusä system by the AfiMilk corporation and data collection is underway.

Recent studies, at other universities, have shown that we may be able to predict disease using activity measures as an indicator. However, this work is preliminary and still many pieces of the overall puzzle are missing. For example, one study showed an increase in activity approximately 10 days prior to an event of both a DA and ketosis. However, those researchers did not report whether those animals without a DA still increased in activity simply due to impending calving. We have hopes to further flush out these details. We are particularly interested in the transition period around calving due to the high incidence of metabolic diseases and the profound economic impact these have. We will collect data on all cows and heifers three weeks prior to expected calving and data collection will continue until 30 DIM. We will compare those animals that experience a disease (dystocia, ketosis, DA, milk fever, retained placenta) to those who go through the transition period without a disease. Data includes all daily activity measures, weekly body weights, as well

(Continued...)

Upcoming Activities

2010 Area Dairy Conferences— "Updates on Dairy Reproduction"

Jan 12 – Prince Edward County Ext. Office, Farmville *Contact:* Beverly Cox, (540) 483-5161 or becox@vt.edu

Jan 13 – Franklin County, The Franklin Center, Rocky Mount *Contact:* Beverly Cox, (540) 483-5161 or becox@vt.edu

Jan 14 – Smyth County Farm Bureau Building, Marion *Contact:* Chase Scott— (276) 223-6040 or miscott1@vt.edu

Jan 19 – Rockingham County, Montezuma Hall, Dayton *Contact:* John Welsh, (540) 564-3080 or jlwelsh@vt.edu

Jan 20 – Culpeper County, Brandy Station Fire Hall *Contact:* Carl Stafford, (540) 727-3435 ext. 351 or ccstaffo@vt.edu

See notice in Virginia Dairyman or at www.vtdairy. dasc. vt.edu for more information

Virginia State Feed Association and Virginia Tech Dairy Nutrition Cow College - Feb 17 - 19, 2010, Hotel Roanoke. Contact R. E. James at jamesre@vt.edu or (540) 231-4770

DMI Workshops:
Rocky Mt.: 1st session (new participants only): Feb 8; 2nd session (all participants): Mar 23rd
Harrisonburg: 1st session (new participants only): Feb 9; 2nd session (all participants): Mar 24th
Wytheville: 1st session (new participants only): Feb 10; 2nd session (all participants): Mar 25th—*Contact your local Extension Office or see www.vtdairy.dasc.vt.edu for more information.*

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.

as milk component data after calving. It is our goal to evaluate these data and determine the best predictor(s) of disease.

We hope the findings of this study will provide useful indicators of metabolic disease. Detecting disease early would allow for early intervention practices. For example, if we flag a suspect-ketosis cow, we could then administer treatment to avoid clinical signs and long-term repercussions. This will be a long and ongoing study, but we will keep you apprised of findings as we uncover them.

—Christina Petersson-Wolfe
Extension Dairy Scientist,
Milk Quality & Milking Management
(540) 231-4767; cspw@vt.edu

Be Cautious of Mycotoxins

The famous quote from Robert Burns, "the best laid plans of mice and men often go astray," basically means that even the most carefully prepared plans may go wrong. The wet growing season and delayed harvest of both grain and silage here in Virginia can increase the risk of mycotoxins, even in the "best" planted field of corn.

Mycotoxins are produced by molds that can grow in the feed during extreme weather conditions, poorly packed silos, and less than ideal feeding management. Mycotoxins can begin in the field as the crop grows, or occur during storage and feeding. Possible symptoms of mycotoxin consumption are reduced or refused feed intake, depressed milk production, general unthriftiness, and loss in body condition. Other signs may be increased abortions, irregular heats, and depressed conception rates. Common mycotoxins and their acceptable levels in the diet for lactating cows are listed below. Be aware that the additive effect of several different combinations of mycotoxins, in a ration, can also be of concern.

- Alfatoxins – 20 ppb
- Deoxynivalenol (DON) – 300 – 500 ppb
- T-2 Toxin – 100 ppb
- Zearalenone – 200-300 ppb

Testing for mycotoxins is available through many commercial forage testing labs. However, testing for mycotoxins is problematic due to the typically non uniform distribution in a silo. Be cautious of mold streaks and areas of spoilage in your silo. Also make sure to remove at least 6 inches from the silo face each day to ensure the feeding of fresh unspoiled feed. This is an area where a silo defacer may really pay. Obviously, the best prevention is to eliminate or decrease the amount of the affected feedstuff in the ration, but in the case of corn silage that may prove to be impractical. The promotion of good rumen fermentation from a well balanced ration with enough effective fiber is always a good practice and can help cows overcome some mycotoxin pressure. Several treatments/ therapies exist to deal with mycotoxins in rations, such as; bentonite clay, glucan products and other inorganic polymers. If you have a concern contact your local dairy extension agent.

"Possible symptoms of mycotoxin consumption are reduced or refused feed intake, depressed milk production, general unthriftiness, and loss in body condition."

—M. Chase Scott,
Extension Agent, Southwest Virginia
(276) 223-6040;
miscott1@vt.edu

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.

Bennet Cassell

Bennet G. Cassell,
Dairy Extension Coordinator & Extension Dairy Scientist, Genetics & Management