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DAIRY PIPELINE

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"Three-times-a-day feeding will optimize your chances of raising healthy calves that grow up to be productive lactating cows."

Photo courtesy of Dr. Bob James

Increased feeding frequencies in calves... is it worth your time?

In today's dairy industry most dairy producers and calf raisers are feeding their calves two times a day. This system became commonplace because it easily fits most farm work schedules...and calves are still growing. However, are calves growing enough and as efficiently as they could be?

Research done at the University of Wisconsin found that calves fed 2.5 lb. per day of a 28% protein, 20% fat milk replacer 3X a day instead of 2X weighed 10.3 lb. more, were 1.7 cm taller and had higher feed efficiencies. Milk replacer powder was diluted to a solids level of 17%. These calves were most likely able to obtain higher growth rates and feeding efficiencies due to a more constant source of nutrients throughout the day. The time interval between evening and morning feedings is often 12 hours, thus limiting the amount of energy available to the calves for maintenance and growth.

According to the NRC, energy requirements for calves increase below 68°F. In the United States, nighttime temperatures above 68°F are not the norm as most regions meet this criterion only a few weeks during the summer. Three times daily feeding allows the calf another interval of nutrient intake and provides another opportunity to introduce warm milk to increase body temperatures.

A recent nationwide study by Merck Animal Health found that the number of producers feeding 3X a day is increasing. In 2007, the National Animal Health Monitoring System found only 5.4% of calf raisers were feeding 3X a day. A more recent study done in 2010 revealed 8% of calf raisers were feeding 3X, with 14% doing so in the winter. As with everything on a dairy, management matters. When thinking about implementing a 3X feeding system, labor costs need to be considered. However, more efficient animals could offset the additional labor costs associated with 3X feeding. Additionally, the Wisconsin study found that 3X fed calves were more likely to complete the first lactation, thereby increasing profits.

If your management system allows it, consider changing feeding to 3X a day. Especially in the winter, calves require a constant source of energy in their liquid diets to sustain maintenance and growth rates. Three-times-a-day feeding will optimize your chances of raising healthy calves that grow up to be productive lactating cows. Note that the concepts presented involve the same daily allotment fed 3X per day and not an increased daily feeding allotment.

Another option to increase feeding frequency is provided by computerized calf feeders which permit allocation of the allotted daily liquid diet into multiple smaller amounts. Canadian studies have demonstrated that calves will nurse four to eight times daily. It is believed that calves instinctively feed more often in order to maximize nutrient availability—and since automatic calf feeders can provide this level of frequency they're an option to consider. Successful implementation of these computerized feeding systems requires a shift in management priorities, including more frequent observation of calves and the adoption of protocols to monitor correct mixing of powder, temperature calibration and equipment sanitation.

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Activities

April 21—Little All American Show & Banquet, Virginia Tech

May 21—Hokie Cow Classic, Blacksburg Country Club

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.

"There are several resources available to help dairymen document their efforts in avoiding residue violations."

FDA Milk Residue Survey

In November of 2010, the Food and Drug Administration (FDA) announced its intent to develop a milk sampling assignment to determine "if farms previously identified with drug residues in tissues have management practices that are also leading to drug residues in milk". In outlining their justification, the FDA noted that while adult dairy cattle represent only 7.7% of the cattle slaughtered domestically, they account for 67% of the tissue residue violations reported by USDA's Food Safety and Inspection Service (FSIS). Initially, this survey was to target known operations with repeated violative tissue residues. Positive samples would have resulted in possible regulatory actions by FDA's Center of Veterinary Medicine (CVM) against the producer and the possibility of dairy product recalls by FDA's Center for Food Safety and Applied Nutrition (CFSAN). After considerable opposition from the dairy industry, the survey was postponed, redesigned and slated to begin in 2012.

The revised FDA milk residue survey began in January 2012 and addresses industry concerns with the previous plan. As reported by the National Milk Producers Federation (NMPF), "The FDA milk residue survey project is now underway. The FDA residue survey involves the collection of a total of nearly 2,000 universal milk samples at central milk testing laboratories: 900 milk samples from dairy producers with a cull dairy cow tissue residue violation, and another 900 random milk samples. FDA will have the samples blinded at the central laboratories, and then shipped…". The samples will be tested for 26 antimicrobial (antibiotics) and anti-inflammatory residues not routinely analyzed in milk samples. It is anticipated that the process will take about a year and that FDA will issue a data analysis and summary of findings at that point.

So what potential impact could this have for the United States dairy industry? I doubt that this will turn in to the US equivalent of the 2008 Chinese milk scandal. The Chinese event involved the willful deceit of consumers by the Chinese dairy industry as they used a number of unsavory practices to conceal the adulteration of milk. As a result of the scandal, 11 countries stopped all importing of manufactured Chinese dairy products. In a time that has seen an increased cost environment and robust export sales, our industry can ill afford a "scandal" that results in a further erosion of profitability. FDA notes the following reasons for drug residue violations in dairy cattle:

- Failure to maintain treatment records;
- Failure to follow labeled withdrawal times;
- Failure to properly identify treated cows;
- Increasing the labeled dosage;
- Increasing the length of treatment and
- Giving the drug in an unapproved route of administration.

There are several resources available to help dairymen document their efforts in avoiding residue violations. The state of Virginia has actively promoted the Beef Quality Assurance (BQA) certification program among cattlemen. While BQA has not been widely embraced by the dairy industry, the program does have a dairy component and is widely implemented in other states such as Pennsylvania and California. Information on Virginia's BQA program can be found at: www.apsc.vt.edu/extension/beef/programs/vabeef-quality-assurance/ Alternatively, the National Milk Producers Federation has developed a good resource manual titled Milk and Dairy Beef Drug Residue Prevention. It can also be found online at http://www.nationaldairyfarm.com/.

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

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