

# Balage: Great Promise, But Some Problems

(Continued from Page C16)

have optimal ranges of dry matter for the forage material to be harvested. The optimal range for balage is 40 percent to 50 percent dry matter.

2. Every time you change silos or cuttings within a silo, your cows go slightly off-feed (sometimes a lot), and the result is often a slight drop in milk production for a day or two.

Using balage from different bales that vary greatly in dry matter and nutrient content is like feeding forage from a different silo or cutting every day.

It is critical to harvest forage as balage at the proper dry matter content (40 percent to 50 percent). Forage baled any wetter than that significantly increases the formation of higher levels of butyric acid during the fermentation process. Butyric acid is less palatable and of lower feed value.

In addition, slime molds are more likely to form on wetter bales, leading to decreased intake by the cows. In contrast, balage that is too dry may not have enough moisture to ferment properly, leaving a material that is more vulnerable to spoilage, or that may result in heat damage in the core of the bale.

When feeding by the bale, changes in forage dry matter can alter the nutrient amounts that you thought you were feeding to your cows. For example, let's look at two 1,400-pound bales that will be fed to a group of 50 cows. On a dry matter basis, each bale tests 16 percent crude protein, but one bale is 50 percent dry matter and the other is 40 percent. On day one, the cows consume 16.8 pounds of dry matter per cow (840 pounds total) and 2.7 pounds of crude protein per cow from that forage. On day two, the cows consume 11.2 pounds of dry matter from the balage (560 pounds total), with only 1.8 pounds of protein. That is a wide variation in nutrient intake for high-producing cows, especially if the balage is their only source of forage.

Consider also that a very diffe-

rent type and amount of acid formed during fermentation in the bale that was 60 percent dry matter than did the one with 40 percent. Frequent variation in the intake of levels and types of acids that enter a cow's rumen for further microbial breakdown and use by the cow tend to lower intake and digestibility while the population of microorganisms in the rumen adapts.

Daily changes can make it nearly impossible for rumen microorganisms to completely use the nutrients taken in by the cow.

Several Susquehanna County farmers participated in a small study last fall and winter where they sampled every bale of balage fed to their herds for a four-month period. Most of them fed their cows only grain and balage. The illustration shows the daily dry

matter variation observed in bale-to-bale dry matter as fed for a 29-day trial period.

The rate of variability of dry matter and nutrients on some of these farms was great. In fact, from a standpoint of properly feeding dairy cows, the rate was too great. Nutrient content of the bales also was significantly different. Bales ranged from 74 to 37 percent dry matter.

The key to making balage a success is to strive for a consistency of 40 to 50 percent dry matter in baled and wrapped forage.

Balage can solve many forage supply problems, but only if you harvest it at the proper maturity and moisture. It takes at least the same amount of management to put up good quality balage as it does any other forage. The advantages of balage are certainly outweighed by the disadvantages if the preparation is not properly managed.

## Dairy Project Gains National Recognition

**HARRISBURG (Dauphin Co.)** — A new farm-based initiative aimed at stemming the flow of agricultural pollutants into the Chesapeake and Delaware bays was recognized by the National Forum on Nonpoint Source Pollution as one of 25 projects throughout the country demonstrating innovative, nonregulatory approaches to reducing water pollution.

The initiative is the Dairy Network Partnership and is a coalition of farm and environmental organizations. Members of the Partnership include the Chesapeake Bay Foundation, the Rodale Institute Research Center, the Pennsylvania Association for Sustainable Agriculture, Penn State University and the Atlantic Dairy Cooperative. The Partnership project is funded by The Pew Charitable Trusts, the nation's largest private environmental grantmaker.

"The Dairy Network Partnership was selected because it represents a cooperative, locally based initiative to address the problem of nonpoint source pollution," said Jolene Chinchilli, Pennsylvania executive director for the Chesapeake Bay Foundation and co-chair of the Forum's Voluntary Initiatives Workgroup. "This is the only demonstration project in Pennsylvania, and one of only two in the Northeast recognized by the Forum."

Dairy farming is important to the economy and cultural heritage of southeastern Pennsylvania, but

it can be a significant source of water pollution. The primary goal of the Partnership is to identify and implement new incentives that will encourage dairy farms to adopt farming practices that help protect water quality while supporting a strong farm economy.

Between 1987 and 1992, Pennsylvania lost 13 percent of its farms. To prevent further loss of farms to other land uses that are potentially more damaging to the

environment, the Partnership will focus on practices that can improve the farmer's bottom line. One example is intensive grazing where livestock graze on small sections of pasture on a rotational basis. The result is improved grass growth, reduced erosion and runoff, increased forage supplies, and lower labor and production costs for the farmer.

The Dairy Network Partnership and the other 24 projects demonstrate how voluntary initiatives,

education, and economic incentives can help combat nonpoint water pollution. The Forum, convened by The National Geographic Society and The Conservation Fund, is comprised of national leaders from business, the environment, government, media and philanthropy, including William C. Baker, president of the Chesapeake Bay Foundation, and Rebecca W. Rimel, president of The Pew Charitable Trusts.

## Medicated Premix Approved For Use

**NUTLEY, N.J.**—Avatec® (lasalocid) Medicated Premix, a feed additive used successfully for many years by U.S. and international poultry producers, has been approved for use in turkeys by the Food and Drug Administration.

Produced and marketed by Roche Animal Nutrition and Health, a division of Hoffmann-La Roche Inc., Avatec is expected to become available to producers later this spring.

According to Roche, Avatec is the U.S. turkey industry's first and only "divalent" ionophore. "Avatec is effective against all three pathogenic *Eimeria* species of coccidia in turkeys—*E. adenoeides*, *E. gallopavonis* and *E. meleagrimitis*," said Dr. Annamaria Castiglia, a technical services veterinarian with Roche. "It protects against coccidiosis with minimal resistance and cross resistance."

As an added benefit, she said, Avatec does not depress weight gain, feed conversion or feed and water intake.

Avatec has also established a strong safety record. In product safety trials, feeding Avatec at levels three times the maximum approved dose for 16 weeks did not affect weight gain or feed conversion, she said. Toxicity has not been observed in turkeys treated with Avatec in the later stages of

production.

"The product can be used in growing turkeys without worrying about problems associated with toxicity," Castiglia said.

Avatec can be fed to turkeys during the entire growing period at a dosage range of 75-125 ppm (68-113 grams) per ton of feed. This wide dosage range lets turkey operations adjust treatment levels to the severity of the coccidial problem.


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