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How progress and economics are changing the way cows are fed

This is the fourth in a series of articles about PDMP's Premier Partners.

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Special for Farmshine

LEBANON, Pa.—Escalating costs for traditional dairy feed ingredients have led to other ingredients also rising in price. However, there are usually opportunities to utilize some degree of alternative feeds to provide the nutrition needed by high-producing dairy cows.

Progressive dairies strive to produce more milk per cow to manage the margin between milk price and input costs. Dairies also have more to think about today in terms of manure nutrient management. These are just some examples of how progress and economics are changing the way cows are fed.

“The challenge,” says Dr. Charlie Gardner, technical support veterinarian for Cargill Animal Nutrition, “is to understand the nutrient needs of the cow and to know what ingredients can provide those nutrients at the lowest cost.”

Instead of focusing on the amount of soybean meal—or even protein—in the ration, sophisticated tools are available today to evaluate ingredients, energy, and protein according to the true nutrient needs of the cow.

Regarding protein, for example, Gardner points out: “We know we can feed lower protein rations if we provide the proper levels of amino acids and the proper nutrients that will drive microbial growth in the rumen.”

With energy, he says, it's not just starch, fiber, fat and sugar, but rather the availability of the starch, the digestibility of the fiber, and the type of fats that enter into the equation.

Perhaps the most important questions are: What are the needs of the farm? What are the goals for the herd? What are the limitations?

One dairy may be happy at 60 pounds/cow/day production, with the focus on healthy cows; another may want to get to 90 pounds, whatever it takes, and still keep the cows healthy. Some farms are more interested in components. Some just want to keep costs down. Some are more driven to find a balance.

“It's important to ask questions and listen,” says Gardner, noting the collective team effort includes recent dairy science graduates, Ph.D. nutritionists, veterinarians, and research scientists.

“We have tools available today to consider many things in our ration balancing program that are designed to meet the cow’s nutrient needs at the minimum cost,” he explains. “We can plug in the animal requirements—production, components, dry matter intake, number of first calf heifers in the herd, current and optimum body condition—in order to make sound decisions about feed choices.”

Other farm factors enter into the equation—from feed management practices to facility constraints and cow comfort. Forage quality is also a huge factor.

“In our day-to-day work, we may spend 15 to 20 percent of our time on nutrition, and the rest of our time on the farm is involved with management, facilities, and forages,” explains Marc Sholder, dairy focus consultant serving customers in Lancaster and Chester counties.

With 26 years experience as a former dairy practitioner, Dr. Gardner has seen many challenges and opportunities on a variety of farms.

Cow comfort is a big part of how cows perform today, he acknowledges.

At Bob and Dave Bomberger’s Meadow Wood Farms, Lebanon, Pa., for example, dairy focus consultant Ken Otis observes: “this is a very comfortable barn.”

Adds Gardner: “The sand bedding, open sidewalls, and also excellent management of cow comfort, remove obstacles to *let* the cows milk, rather than pushing to *make* them milk.”

Producers are also more focused today on feed management to minimize inconsistencies in the ration.

At Meadow Wood, for example, “Dave measures dry matters three to five times per week, weighs refusals daily, and has good communication with his employees,” notes Otis. “It makes a huge difference to know what the cows are actually eating.”

Gardner stresses the point that feed bunk management—pushing up feed, keeping fresh feed in front of the cows, regular testing for dry matters—are things that have nothing to do with the feed itself, but have everything to do with the optimal performance of the feed in terms of cow health and production.

So how has the current market for dairy feed ingredients affected the approach of producers and nutritionists in feeding the cows?

“The biggest change I’ve seen is the type of rations we feed today,” observes Otis, who has been feeding dairy herds for 31 years. “Today, we lean more toward feeding nutrients versus ingredients.”

“We’ve adopted a nutrient-driven philosophy, utilizing a wide variety of ingredients to meet the needs of the cow,” Gardner adds. “But to do this effectively, we need to really know the nutrient profiles of these non-conventional ingredients.”

Forage quality is a big part of this paradigm shift. “The sharpest managers are paying attention to producing better forages, and using good preservatives to maximize nutrients,” he observes. “Today, this makes all the more sense because it’s an opportunity to save on purchased feed, or to sell corn and feed something else.”

Otis notes some dairymen are using alternatives in the dairy ration and selling corn and soybeans this year.

But as Sholder points out, there are things to watch out for when feeding alternatives. “You don’t want to leave the door open to inconsistencies,” he says. “That’s why we test values for every supplier. With a database of past history to go by for the alternative feeds stored in our mills, there’s a higher degree of confidence in what the cows end up with in terms of nutrients.”

Manure nutrient management objectives, coupled with high-priced feed ingredients, have also caused producers and nutritionists to look more closely at things like: How much protein am I feeding?

“The traditional ration was 18% protein; now we’re seeing herds get to 17 to 17.3% protein, even some herds under 17%,” observes Otis.

“More and more we see the focus shifting to nutrients, versus ingredients,” adds Sholder. “For example, amino acids versus soy or cottonseed.”

On the subject of high production and healthy cows, Gardner doesn’t see a conflict. Some people believe high-producing cows are more prone to disease, but the former dairy practitioner has found that with more fiber and forage in the diet, as well as attention to dry cow and transition nutrition and management, there’s no difference in disease prevalence between lower and higher producing herds.

“From a health perspective, in the lactating dairy cow, the rumen needs effective fiber,” he explains. “For profitable production, we also need digestible fiber. Proper forage management can help provide both.”

Today, the role of providing dairy nutrition is equally focused on working closely with producers to get the very best forages possible and in developing transition rations that are extremely important to herd health and production.

This is where the nutrition equation gets back to the farm’s goals, facilities and management practices.

“On some farms, the facilities can be a limiting factor,” Gardner relates. “Ventilation or cow comfort can be such that the cows are not eating huge amounts of feed. In those situations, it can be a mistake to push them more to milk more.”

When there are limiting factors, trade-offs come into play. “Within reason, we can afford to feed whatever nutrients are needed to support high production,” he says. “The challenge is to know when increasing a nutrient will lead to a corresponding increase in production.”

For example, in some herds, adding something will give a profitable boost in production where in other herds there can be factors that limit production, so the added nutrient would only add to cost, without the corresponding production increase.

In addition to the database of suppliers, ongoing research at Cargill’s Innovation Campus, Elk River, Minnesota, “helps us pinpoint nutrient needs with greater precision than ever before,” adds Gardner.

With 14 mills and 340 employees, the company’s Northeast Region uses these tools to serve about 4,000 dairy farms.

While today’s high prices have driven the use of a wide variety of by-products in dairy rations, the bottom line is the same no matter what the current market for ingredients.

“Cows need nutrients, not ingredients,” Gardner states, noting that a focus on nutrients affects the way dairies buy their feed, and it requires a level of trust.

“Ken is a good sounding board. He’s here once a week to go over things, and if we need help in any area, he has access to plenty of expertise,” says Dave Bomberger, who manages the cow side of Meadow Wood Farms, with his brother Bob managing the crops and forages.

Effective management of nutrients is important here because Dave identifies their biggest challenge as agricultural land base and urban sprawl. “Our goal is to supply the community with a good product and try to do a superior job of it,” he says.

The Bombergers have met most of their suburban neighbors and do their best to be sensitive to the community in their farming practices.

The way cows are fed and managed affects not only milk production and profitability, but also the management of manure nutrients and crop rotations on the farm.

“Dave doesn’t even ask me anymore what’s in the ration,” notes Otis about feeding the 500-cow dairy herd at Meadow Wood. “They are less concerned with what ingredients are in there and have a better understanding of feeding nutrients.”

In addition to working with farm advisors, Gardner highlights the many resources available to producers today. “It’s important for producers to avail themselves of continuing education programs, including those offered by PDMP, and to take advantage of opportunities to network at events like Dairy Summit,” he says. “These opportunities help producers discover ways to make their farms run more effectively.”

As a PDMP member, Dave values the “networking with other members, being involved in the meetings, and learning new things.”

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