

Nutrition: success depends on close attention to details

■ Putting the right ration in front of your cows is only a small part of what it takes to produce a lot of milk and keep your animals healthy, according to industry nutritionists.

by Ron Goble

There is more to dairy cow nutrition than putting a consistently good meal in front of your cows, according to nutrition specialists.

“Operating and managing a dairy is like piloting a huge Boeing 747,” said Abraham du Plessis, DVM, from Cargill Animal Nutrition in Central California. “These planes have instruments that tell them how high and how fast they are flying; what direction they are going.”

The dairy management consultant, who is also a veterinarian, compared those critical airplane instruments to the tools that a dairy might use. Dairy Comp or Feed Watch are examples of the high tech instrumentation available for the dairy. Having the ability to monitor how the cows are eating, milking and reproducing is essential, he stressed.

Management is key

Not only do good nutritionists focus on the feed ingredients and ration components, but

they look at a wide variety of management practices that impact the effectiveness of a dairy producer’s nutrition program.

First of all, those employees who are entrusted with the feeding duties need to be well trained and then well managed on a daily basis. Feeders need to put the exact amount of every feed ingredient required into the mixer. Different pens of animals may require different rations and it can be a challenge to the feeder to make sure he gets the right ration in front of the right cows at the right time.

“Accurately measuring ration ingredients and feedout is essential, and our computer programs tell us how well the feeders are doing their job. Adjustments can be made at any time,” he said.

The nutritionist needs to consider a multitude of factors besides the actual ration formulated that will affect performance. For example,

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Abraham du Plessis checks feed mix put in front of some cows under his nutritional care.

FYI

■ To contact Abraham du Plessis at Cargill, call 559-799-8747 or by e-mail at Abraham_duPlessis@cargill.com.

is there adequate, fresh feed in the bunk when the cows come back from milking? Has it been pushed up so it is accessible? Are there plenty of water troughs supplied with fresh water available for the cows? Are the pens crowded? How far are cows walking to and from the milking parlor? Is there enough attention paid to cow comfort – stall dimensions, cooling, bedding and grouping? Are most of the cows chewing their cud while lying down in the freestalls or corrals? What is the reproductive track record for the herd?

“The answers to all these questions and more will help determine just how effective a nutrition program can be,” he said.

Crisis periods

The most stressful period in a dairy cow's life dairy cow is two weeks before calving and three weeks after calving. “She changes from being in a positive energy balance, to going into an energy crisis where she is using a lot more energy than she can take in,” the nutritionist said. “That causes havoc with her metabolic system. She now starts mobilizing body fat, which if excessive can result in ketosis and fatty liver problems.”

He mentioned other conditions. Milk fever and hypocalcemia occur when a cow is losing more calcium into her milk than she can take in her diet. Her body tries to respond to shortages by mobilizing calcium from her own bones. However, feeding a specific diet to a cow before she calves can combat this malady, he declared.

“There are basically two kinds of diseases – clinical and subclinical,” du Plessis explained. A clinical disease is occurring when you can look at an animal and tell they are sick – sunken eyes, droopy ears, not eating. With subclinical diseases the animal can appear normal. Everything may look good but the only place you may see abnormality is in milk production.

Confounders

When production problems are evaluated, it's not always an easy fix when trying to get milk cows back on track. Interpreting the data available may be difficult because of what du Plessis called confounders. A confounder is a factor that confuses the



The quality of corn silage fed at your dairy can vary dramatically from one day to the next, depending on how it was harvested and packed.

interpretation of the data that a producer sees. Looking at the milk production of two dairies might show one producing 80 pounds of milk per cow per day, while the other is only producing 70 pounds. Yet, they may be feeding the same ration.

“You might say that one is doing a lot better than the other. But one dairy could be milking 60% first lactation animals while the other only 30%. That can skew the results when nutritionists only look at production numbers without adequate background. That's an example of a confounder. Other examples of confounders include days in milk, number of times milked, season and BST usage,” he said.

Having trouble getting cows pregnant last year might be attributed to something as simple as the weather. A mild summer may really make the biggest change, said du Plessis.

“You have to know what those confounders in dairying are when interpreting data,” he said. “Most of all, dairymen need good data. And the better the data the more educated decision you will make. Unfortunately, many decisions are made on the fly, based on feelings and not on hard numbers.”

Case study

Cows at a California dairy were producing 80+ pounds of milk per cow per day early this year. In April, however, their production dropped into the high 60s. Neither the dairyman nor the nutritionist could figure

out why production had dropped so much. They sampled the feeds and had experts come look at the cows.

After three or four months of trying to find the bottleneck that caused production to plummet, the dairyman lost confidence in his nutritionist and handed over the responsibilities to du Plessis and his colleague, Doug Degroff.

Search for needle in haystack

In order to leave no stone unturned, du Plessis and Degroff started with the basics. Here are a few of the items they stressed:

1. Study the existing and historical diets fed to cows.
2. Sample every single feed ingredient and have it comprehensively analyzed for dry matter, protein, fiber, crude fat, ash, starch levels and minerals.
3. Evaluate production, reproduction, udder health, culling and milk component records.
4. Observe and evaluate different groups of cows for body condition, disease, demeanor, cud chewing, manure and motility.
5. Gain a proper understanding of management and feeding practices, including cow movement, grouping, milking routine, BST usage and feeding times.

What you see isn't what you get

“Often times, the diet that nutritionists put on paper isn't the diet put in front of the cows because of varying factors. It could be that an ingredient

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being fed to the cows doesn't match the analysis that he has in his ration balancer," said du Plessis. For instance, the fiber or protein could be a lot lower or higher than called for in the ration.

Forages, such as corn silage, wheat silage and alfalfa haylage, can show large variance on dry matter and energy content. Corn silage could vary from 25% to 45% dry matter. Alfalfa hay can also show a big variance on fiber and protein levels. Grains, by contrast, don't vary too much. Canola, cottonseed and almond hulls, for example, are pretty consistent in their nutrient values.

Large dairies may be feeding up to 200 tons of corn silage per day. At that pace, the feeder moves through the silage bunker rather quickly and the feed quality might change significantly.

It is very well established what fiber, protein and minerals levels need to be to get top milk production out of cows, said du Plessis. "On paper it looked like the cows should milk and reproduce really well, but they weren't. So what was the disconnect?

In this example du Plessis and Degroff found the herd that wasn't milking well had have very low butterfat and poor feed efficiency. This typically occurs when feeding too much grain and not enough fiber, which was found to be the case.

Check culling data

Besides reproduction, producers should check culling data. Which cows are leaving the dairy? When are they leaving the dairy and why? Udder health and mastitis data are also important benchmarks. Mastitis can have a huge effect on production and reproduction, said du Plessis.

"So there is a wealth of production data that you can learn from in order to make good management decisions," du Plessis said. "It's up to the nutritionist to analyze and interpret the data correctly. If he does, the producer should see a steady turn-around in his milk production figures and the overall health of his animals."

So to have a successful nutrition program, the nutritionist who can match what's on paper with what the cows actually eat - while keeping a sharp eye on other dairy management practices - is the one who will have the most successful herd performance. ■