



BY THOMAS QUAIFE

IT DIDN'T TAKE MUCH TO GET BOB PEIFER INVOLVED WITH "precision feeding,"

He was already on a feed-additive program to optimize the rumen bugs in his cows; he wanted to cut his soybean meal bill, and he lives in an environmentally sensitive area. So, when his nutritionist approached him about taking a more precise look at the protein he was feeding, he was willing to give it a try.

Over the past four to five years, he has been able to cut the crude protein in his rations, which helps him save on soybean meal.

And, his milk urea nitrogen levels have gone down — an indication that his cows are excreting less nitrogen. In fact, there is less nitrogen and phosphorus in the cows' manure. That is important for Peifer since he farms on the edge of the Chesapeake Bay watershed. He has a crop consultant to make sure he is not over-applying nutrients to his fields, but anything he can do to reduce the amount of nitrogen and

phosphorus excreted from his cows is a plus.

"I think (the precision-feeding program) is pretty good," says Peifer, who operates a 170-cow dairy farm near Cochranville, Pa. His herd average — about 90 pounds of milk per cow per day — also speaks volumes.

The main incentive behind precision feeding is to save money, but the environmental advantage is a nice side benefit. Indeed, it is a potential win-win for everyone involved.

More realistic

With precision feeding, you try to feed just the right amount of nutrients to a cow. For instance, instead of concentrating on crude protein, you take a closer look at the various amino acid fractions that make up the protein. And, you pay close attention to forage quality and attempt to maximize the amount of nutrients cows can get from that source rather than concentrates.



IT'S A NEW PARADIGM ON COST OF PROTEIN IN THE DIET, AND I DON'T SEE IT SWINGING BACKWARDS

How precise can you get, given the complexity of rumen fermentation? Amino-acid balancing has been practiced for decades in the swine industry. Monogastric animals like pigs are easier to program for amino acid utilization than ruminants.

But a new generation of computer models is now making it possible with ruminants.

"They're all pretty decent platforms," Elliot Block, senior manager of technology at Arm & Hammer Animal Nutrition, says of the computer models. "They're all closer to modeling the cow correctly than not being able to do it," he adds.

He acknowledges that the dairy industry still doesn't have the same precision that the hog and poultry industries do when it comes to amino-acid balancing. But, the computer models are progressing rapidly and "we can get pretty precise," he adds. It's not exactly the bull's eye, but certainly within the general target range.

Trends in place

The advent of computer models is just one of the underlying trends behind precision-feeding of dairy cows.

Certainly, the tough economic times that farmers have had to endure in recent years has made people more receptive to reducing waste and improving efficiency. High feed costs have contributed to this, as well.

"No longer can I simply sit back and feed 18 or 18.5 percent crude protein because soy is \$250 a ton," says Dana Putnam, vice president and general manager at Balchem Animal Nutrition and Health. With soybean meal now approaching \$400 a ton in much of the U.S., people have to use it more efficiently. "It's a new paradigm on cost of protein in the diet, and I don't see it swinging backwards," he adds.

With precision feeding, it is possible to feed 15.5 or 16 percent crude protein instead of 17 percent crude protein with the same results.

For the past several years, there's a trend among nutri-

tionists to formulate diets more precisely. For example, when the National Research Council (NRC) came out with its latest recommendations in 2001, it began talking about amino

acid requirements of dairy cattle instead of simply focusing on total protein or crude protein, as it had in the past.

And, dairy farmers are increasingly going back to group feeding after setting it aside for a while in the late 1990s and early 2000s.

Certainly, with the advent of bovine somatotropin in the mid-1990s, more people went to a one-group ration, since BST caused cows to make more milk and it was easier to fudge under those circumstances. Some people liked the simplicity of a one-group ration and it didn't bother them as much that they were leaving money on the table if milk prices were relatively high and feed costs low.

But the economic climate of the last few years has changed that. Now, people are feeding diets that are more tailored to specific groups of cows in order to be more efficient and save on feed cost.

Good for the environment, too

As noted earlier, there is an environmental advantage to supplying the cows' protein needs more efficiently, since it means less nitrogen and phosphorus being excreted into the environment. Based on the research, a nitrogen reduction of 10 to 20 percent is possible.

Tom Nauman, head nutritionist with Hooper Feeds in Gordonville, Pa., has helped implement precision-feeding programs with farmers in the environmentally sensitive Chesapeake Bay watershed.

"Overall, dairy farmers in the Northeast are being progressive and doing their part in the effort to clean up the (Chesapeake) Bay," he says. "Our local universities have been extremely helpful in providing information to farmers and dairy industry professionals in order to aid this effort. Farmers that are fully employing the concept of precision-feeding are benefiting by reducing feed costs while improving the environment at the same time," he says. 🐄