

At the Hoard's Dairyman farm . . .

We've been boosting our milk components

HAVING Guernseys, with their high solids, and selling milk in Upper Midwest Order 30, we've always paid attention to component levels. Since last September, we have been shipping our milk to Alto Dairy Cooperative. Heavy into cheese, the co-op gives members the choice between cheese-yield pricing and regular federal-order component pricing.

Our herd has averaged 4.6 percent fat and 3.25 percent protein. It was clearly best for us to choose cheese-yield pricing, and that is the only reason we regretfully ended our membership in Foremost Farms (Golden Guernsey).

When cheese is a \$1.40 a pound, each full point in protein test, moving from 3.3 to 3.4, was going to be worth about 30 cents more per hundredweight. Of course, when cheese prices are higher, higher component levels are even more important . . . for everyone being paid on components.

We first wanted to know how we compared to other Guernsey herds. For a benchmark, we went to the website of USDA's Animal Improvement Programs Laboratory.

There we found standardized, average production figures for nearly 8,000 Guernseys. Average fat test was 4.44, and average milk protein was 3.29. We were about average for protein and slightly above average for fat. Table 1 shows averages for the six dairy breeds.

Working with our nutrition consultants, we began to experiment with ration changes that might improve our component levels. Our farm manager, Jason Yurs, says that most of our early attempts involved changes in the nitrogen, protein, and amino acid sources fed. We boosted roasted soybean to get more bypass protein. We tried some urea to get more available nitrogen. We tried a commercial, protected-amino acid supplement. None of these things, by them-

selves, seemed to make much difference in milk protein.

We realized at about that time that, both on farms and in research trials, people were starting to see some results from also making changes in the carbohydrate side of the equation. Specifically, people were trying different sources of sugars that would be readily available to the rumen bugs. The goal was to get the right amounts and types of carbohydrates and protein sources.

We tried that approach and thought we began to see some response. After using a couple of different sugar sources, along with protected amino acids, early last fall, we settled on molasses because of its cost and availability.

During midsummer 2004, our milk proteins from the plant were

as low as 3.14. We began to see some response at the time of the year that component levels normally began to rise. So, to see whether we were actually making any gain, we compared our milk plant protein tests to those from the year before. See Table 2.

Table 2. Plant protein tests

	Hoard's Dairyman Farm	
	03/04	04/05
July	3.15	3.17
August	3.15	3.15
September	3.22	3.26
October	3.38	3.41
November	3.35	3.40
December	3.34	3.41
January	3.38	3.44
February	3.34	3.52
March	3.29	3.56

At first glance, it wasn't easy to see much improvement. But, we also were getting more milk per cow right along. We needed to determine whether we actually were producing more pounds of protein per cow. It is pounds of protein and butterfat that people on any type of component pricing get paid for. We turned to our DHI monthly summaries for this (Table 3).

It looks as if the improvements

Table 1. 2003 lactation averages

	Milk	% Fat	# Fat	% Protein	# Protein
Guernsey	16,469	4.44	731	3.29	541
Holstein	24,876	3.65	907	3.01	748
Jersey	17,612	4.61	812	3.56	627
Brown Swiss	20,715	3.99	827	3.31	685
Ayrshire	17,738	3.84	681	3.13	555
Milking Shorthorn	17,381	3.57	620	3.08	535

Source: USDA's Animal Improvement Programs Laboratory

we thought we saw were real. We made the major ration changes in September and October of 2004. Since then, we have been produc-

Table 3. DHI pounds milk protein per cow

	Hoard's Dairyman Farm 03/04	04/05
July	1.75	1.62
August	1.60	1.78
September	1.64	1.81
October	1.65	1.87
November	1.68	1.83
December	1.72	1.91
January	1.72	2.05
February	1.67	1.81
March	1.70	1.96

ing 0.2 to 0.3 pound of additional protein per cow per cow, compared to a year earlier. That extra protein has been worth 60 to 90 cents per cow per day to us.

We seemed to have done this without sacrificing butterfat test. Our September 2004 through March 2005 plant butterfat tests averaged 4.63 this year. A year earlier they averaged 4.64, and we now are feeding monensin. The following table shows a fairly typical ration for the past few months at the Hoard's Dairyman Farm.

This ration is fed as a one-group TMR in our comfort-stall barn and at an outside bunk. Ration specifications are 0.76 net energy-lactation, 18.1 percent crude protein, 11.3 percent rumen-degradable protein, 19.2 percent acid detergent fiber, 28.2 percent neutral detergent fiber, 41.0 percent nonfiber carbohydrate, and 5.0 percent fat.

Metabolizable protein supplied is 4.65 pounds per day. Of that, 6.5 percent is lysine, and 2.2 percent is methionine. The lysine-methionine ratio is 3 to 1.

Through all of this, we kept a pretty close eye on our plant milk urea nitrogen (MUN) levels. Our

A typical ration	Pounds
Alfalfa silage	38.0
Corn silage	24.0
Cottonseed	2.0
Custom mix	19.5
Includes dry corn, 11.1; soybean meal, 4.0; roasted beans, 2.0; premix, 1.51; molasses, 0.7; linseed meal, 0.7; blood meal, 0.3; fat, 0.3; and protected amino acid, 0.02	

MUNs had been running in the range of 14 to 16. Since the changes, they mostly have been in the range of 12 to 14. However, there was a stretch during February and March of this year when our MUNs shot back up to the 15 to 16 range, even though milk protein stayed above 3.5 percent and pounds of protein shipped stayed strong, also.

"The biggest question is whether we are feeding excess rumen degradable protein," said our nutritionist Matt Kooiman. "The (NRC) model says we're not, but the cows seem to be telling us different."

The ration changes added cost, so we needed to make sure we could justify the additional expense. We use homegrown forage, ground dry corn, and roasted soybeans. Jason Yurs, the farm man-

ager, had locked in the prices of most of our purchased ingredients.

Our forage costs averaged 76 cents per cow per day (silages both at \$70 per ton of dry matter and hay at \$120), and our nonforage costs, including cottonseed, averaged \$2.42 for a total of \$3.18 per cow per day.

Our tank average hovers between 50 and 55 pounds. At 50 pounds per cow, feed cost per hundredweight of milk is \$6.36. At 55 pounds, it runs \$5.78. Our mailbox price between September and February averaged \$19.07.

Of course, in this black and white world, comparing feed costs for our Guernseys and those of other high-solids herds with most other herds can be misleading. We really need to look at feed cost per pound of milk protein and butterfat combined, total solids, or some other such yardstick. With daily feed cost of \$3.18 per cow and average protein (1.96 pounds) and butterfat (2.48) production totalling 4.44 pounds per cow, our cost per pound of protein and fat combined turns out to be 72 cents.

Another way to look at feed cost is cost per pound of dry matter. With daily feed cost of \$3.18 and dry matter intake of 43.7 pounds, we're running right at 7.2 cents. That's a little high compared to industry goals of 6 to 7 cents. We will be working to lower that without giving up much in component production.

We also realize that cow health affects our margins just like feed

cost does. We're quite pleased with how healthy our cows are (knock on wood), and we will make ration changes very carefully.

From day to day (we're on everyday pickup), we watch our milk protein and butterfat tests very closely. However, what we really need to know is how we're doing on shipping protein and fat from day to day and week to week, especially when we switch to a different hay silage bag or make other feed changes.

We have devised a spreadsheet to help us track that. For each pickup, we enter the tank weight and protein and butterfat tests that we get each day from Alto's website. The spreadsheet calculates total pounds of protein, butterfat, and the two combined. The spreadsheet also is set up to provide the percent change from day to day in tank weight and combined protein and fat. Any time milk volume and total component volume move in opposite directions by more than 1 percent, we begin to look for a reason.

You don't have to be on a cheese-yield pricing to get a payback on improving components. The average price paid for protein in federal order component markets last year was \$2.60 a pound. Each 0.1 pound change in milk protein per cow per day is worth 25 cents per hundred.

Also, the average federal order butterfat price last year was \$2.09 per pound. Each 0.1 pound change in butterfat shipped per cow per day is worth 21 cents per hundredweight of milk. 