

ARE YOU LEAVING MONEY ON THE TABLE?

Don't overlook the potential causes of milkfat depression.

BY MEGAN PIERCE



MILKFAT DEPRESSION IS AN AGE-OLD PROBLEM AND there's plenty of research to explain why it occurs. Despite this knowledge, milkfat levels have been on the decline across the country. For example, in the Mideast Federal Order, most months in 2010 were well below the 10-year average for milkfat percentage.

And, milkfat depression is a problem that has a serious impact on the bottom-line. Milkfat is worth more money today than it ever has been, says Gene Boomer, veterinarian and manager of field technical services with Arm & Hammer Animal Nutrition. In 2009, the average price per hundredweight for butterfat was \$1.25. In 2010, butterfat rose to \$1.85 per hundredweight and, as of June 2011, the average price for butterfat rose to \$2.37, making the yearly average for 2011

\$2.24. This butterfat is worth almost \$1 more per hundredweight today than 2009. And, dairy farmers in a wider area of the country are getting paid on components and not just milk flow, notes Boomer.

In the summer months, the heat may take the blame for low milkfat levels. But it's important to remember that milkfat depression is a multi-factorial problem. As the weather starts to cool off, be sure to evaluate all of the risk factors on your farm to maximize milkfat and your bottom-line.

Fiber first

Check to see if your ration contains adequate effective fiber. This is the most common cause of low milkfat.

You want to feed a ration that contains at least 23 percent effective fiber. If fiber is lacking and too many concentrates are being fed, you will have milkfat depression, notes Boomer. Adequate levels of effective fiber will help slow down the passage of nutrients through the rumen, acting as a natural buffer.

Use a shaker box to evaluate particle sizes. Rations that are too fine in particle size, combined with inadequate forage or fiber levels, will aggravate milkfat depression. If particle sizes are too coarse, animals will sort the feed, which also causes problems.

Limit pounds of dry matter fed from by-products to less than 20 percent of the total ration dry matter.

Master bunk management

Evaluate dry matter intakes and watch for large variations in intake.



CASE STUDY: HIGH MILKFAT LEVELS POSSIBLE THROUGH SUMMER

Pete Drehmann is a veterinarian in Pound, Wis., who has been working to improve milkfat levels in a 3,000-cow herd that he works with.

This past February, Drehmann decided to make a ration change to see if he could improve the milkfat levels. This herd tends to see its milk production go up from February to June. And, when milk production starts to increase, fat content slides.

Drehmann says his goal was to raise the dietary cation-anion difference or DCAD level in the diet by at least 10 points. He also wanted to raise the potassium level in the diet to 1.8 or 2 percent. "Raising the potassium levels this high is difficult to do in high corn silage diets. In this particular case we were able to raise the potassium to 1.5 percent," explains Drehmann. Two weeks after the ration change, milk production held and fat content started to go up.

As a result of these changes, this herd gained almost 9 pounds of 3.5 percent fat-corrected milk. "There was no control group, but the trend was compelling," says Drehmann. The improved fat content also held. As of July, this Holstein herd averaged a 3.45 percent butterfat, up from 3.2 percent, with an average milk production of 89 pounds per cow.

In the past, this herd had not made these ration changes because it was very expensive. The ration change came at a cost of 30 cents per cow, but yielded a 6-to-1 return on investment.

Others have tried this ration change and gotten no response, says Drehmann. "At the suggestion of Gene Boomer (with Arm and Hammer Animal Nutrition) we moved the DCAD level 10 points at once, instead of trying to slowly increase the DCAD level."

This particular herd also did not have any other underlying issues that could have been causing milkfat levels to drop. "From a metabolic and reproduction standpoint, you can't really find fault with this herd," he says.

Overcrowding and availability of bunk space have a big impact on milkfat level; be sure that cows have enough space. Prevent slug feeding. Slug feeding alters rumen fermentation, which creates subclinical acidosis and can impact milkfat, notes Boomer.

Make sure cows don't run out of feed and watch for spoilage in the feed bunk. Clean feed refusals out of the bunk on a daily basis.

Don't let your feed inventories run out. If you have to start feeding forages prior to completing fermentation (four to six months for corn silage), it will impact milkfat, says Pete Drehmann, veterinarian from Pound, Wis. "How you handle forages and diet consistency makes a big difference." One farm that Drehmann works with, that maintains high butterfat levels, has long carryovers in its feed. This farm will feed 2010 corn silage until April 2012. "A long carryover allows us to feed very consistent forages," he adds.

Silage faces should also be kept very tight. Avoid any mold or spoiled feed. "Feeding bad feed will kill components and milk production," notes Drehmann.

Source your unsaturated fatty acids

Look at the total grams per cow per day intake of unsaturated fatty acids (UFA) and what the sources are.

Account for varying levels of UFA's in by-products. The amount of fat in different by-products can vary tremendously, and the same by-product coming from different mills can also have different levels of UFAs.

Different sources of fat also have different availabilities to the cow. Whether it's the basal diet, cottonseed, dry distiller's grain, tallow, calcium salts, vegetable oil or rumen inert fat, it makes a difference. "Be aware that corn silages and corn grain can contribute high amounts of UFA to the diet due to the quantities fed," notes Boomer.

Boomer does note that you can get by with more UFAs in the ration if there is no heat stress or you have enough effective fiber in the diet.

Reflect on ration starch and sugar levels

Examine the levels of starch and sugar in the ration.

The total starch and sugar level in the ration should be approximately 30 percent of the diet; anything more than that will result in poor rumen fermentation. The goal for starch alone is 23 to 25 percent.

Check on metabolizable protein

Evaluate the level of predicted metabolizable protein reaching the small intestine. Look to see what the levels of lysine and methionine are.

Shoot for a goal of 2.4 percent methionine and 7.2 percent lysine. Diets lacking in protein can cause milkfat depression.

RAPID RECOVERY POSSIBLE

The good news about milkfat depression is that when it does happen, recovery can be pretty rapid.

In an experiment conducted at Penn State University, researchers induced milkfat depression by feeding a low-fiber and high-soybean-oil diet and then recovery by feeding a diet higher in fiber and low in oil. Milk samples were taken every other day to observe the milkfat yield over time. "Milkfat levels decreased when cows were fed the low-fiber and high-oil diet, and by seven days milkfat levels were significantly decreased," says Kevin Harvatine, assistant professor of nutritional physiology at Penn State University. "When we switched to the recovery diet, milkfat yield increased and returned to control levels by day 11."

What this research tells us is that any factor that can cause milkfat depression could have happened seven to 10 days prior to when milkfat depression is observed. If the risk factor is eliminated, recovery should be seen in 10 to 14 days. "Knowing this timeline is very important so dairy farmers can identify the causative factors of milkfat depression and also to know just how long to wait to see if a diet correction was indeed effective in raising milkfat levels," explains Harvatine.

Minerals matter

Look at the levels of potassium, sodium, magnesium and chloride in the diet.

All forages should be tested by wet chemistry to determine the level of potassium, sodium, magnesium and chloride in the diet. Don't just use book values or NIR.

It is considered ideal to have potassium to magnesium in a ratio of 4 to 1. Excessive potassium will prevent magnesium absorption, which plays a crucial role in milkfat depression.

Keep an eye on chloride levels. Research indicates that as chlorides starts exceeding 0.35 percent of dry matter, the risk for milkfat depression is increased. While many diets have a basal level of chloride higher than this due to forage chloride content, the effects can be mitigated by adjusting dietary cation-anion difference or DCAD.

Potential for potassium carbonate

Analyze the amount of potassium carbonate in the diet.

Research presented at the 2010 American Dairy Science Association (ADSA) annual meeting shows that potassium carbonate supplementation can help alleviate milkfat depression. New research presented at the 2011 ADSA annual meeting also indicates that the addition of potassium carbonate to the diet could be a way to improve milkfat.

Current guidelines for early lactation cows in the summer for potassium are 1.7 to 2.0 percent and 1.6 to 1.9 percent in winter.

As you can see, there are a number of factors that can result in milkfat depression and when any of these factors go awry, you could have problems. Evaluate your herd to make sure you are maximizing milkfat production and not leaving money on the table. 🐄



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