Will multiple component milk pricing pay?

By Dr. George F. W. Haenlin
University of Delaware

Milk price supports and major changes in dairy programs continue to be in the spotlight. Multiple component pricing–the adjustment of milk prices for other components of milk besides butterfat–is one of these proposed changes.

One argument in favor of such a pricing method is that most milk produced today goes into manufactured dairy products, particularly cheese. These products depend on the solids content of milk for quality and yield.

Milk of average composition contains 87.7 percent water, 3.7 percent butterfat and 8.6 percent solids-non-fat (SNF). The SNF component includes 4.8 percent lactose, 3.2 percent protein and 0.6 percent minerals. About 78 percent of the protein in milk is usable, as casein, for cheese making. Milk solids levels vary from farm to farm and seasonally. Since solids and protein are not strongly correlated with butterfat, it makes sense to test and price milk according to its solids or protein content as well as butterfat.

The idea of pricing milk on this basis isn't new. I did a lot of basic research on this subject at the University of Delaware in the 1960s. But there are roadblocks to implementation. These include: (1) the high cost of testing for solids, protein and especially casein; (2) disagreement over which components to test and pay for–SNF, protein or casein; (3) the absence of established market values for protein or other solids except casein; (4) current Federal Market Order regulations; (5) the economics of processing fluid milk; and (6) the uncertainty of farmers as to what financial impact multiple component pricing would have on them.

California is the only major U.S. area to have implemented multiple component pricing, though such systems have been used for years in Europe. Californians test for fat and solids-not-fat, pricing milk according to pounds of solids. Differentials for fat and SNF are related to butter and nonfat dry milk prices and a value is assigned to water as the "carrier." Fluid processors pay the same SNF component price as other processors.

California standards require fluid milk products to have above average SNF contents or to be fortified with nonfat dry milk. This encourages fluid processors to purchase high SNF milk. It concerns me and many others that the Northeast, with its problems of low fluid milk use, does not adopt this practice.

In the past few years various dairy cooperatives and processors, mainly in the Midwest, have implemented their own multiple component pricing plans. These plans are based on protein content rather than SNF. Farmers receive a protein bonus (or premium) or a differential like that paid for butterfat. Premiums normally range from 3 to 12 cents per 0.1 percent of protein or 30 cents to $1.20 per pound of protein in 100 pounds of milk. These bonuses are often contingent on such quality standards as somatic cell count to help assure normal yields for cheese processors. Twelve cents is about half of protein's worth in cheese and slightly more its value in nonfat dry milk.

Another plan adopted by cheese processors in unregulated regions is end-product pricing. This recognizes the value of fat and SNF or protein in cheese production. Processors calculate a farmer's milk price by using a yield formula, multiplying this by the cheese price, and subtracting a processing margin.

Scientists at Cornell University recently studied the potential impact of various pricing plans on farm income and returns to processors, using monthly milk weights, protein and fat tests from 93 farms in western New York. Under a fat-protein differential system, 56 producers lost an average of $607 in income (8.5 cents/cwt) and 37 producers gained $731 (10.2 cents/cwt). When end-product pricing was compared with the current system, 56 farmers lost an average of $1,249 (17.4 cents/cwt), while 37 increased their income by an average $1,942 (21.6 cents/cwt).

The study showed that the farms which lost money under either of these multiple component systems had protein levels below the standard 3.16 percent. In fact, there were more farms below this protein standard than above it. Higher producing farms had above average protein levels and there was a positive but weak correlation between a farm's fat and protein contents.

For example, two farms currently had equal fat levels and prices but under the alternative pricing systems their prices changed due to differences in milk protein content. Only one herd in the study had fat levels over 4.0 percent and this herd ranked first in price per hundredweight under all the pricing programs. (Effects of cattle breed on milk composition were not studied.) Fat and protein content of milk from different farms varied widely (3.27 to 4.48 percent and 3.05 to 3.56 percent, respectively), so there was a significant spread in prices per hundredweight of milk under the different pricing plans.

Producers whose milk tests were below average would be disadvantaged under such pricing systems, but this doesn't mean that all Holstein herds would suffer or that only owners of Jerseys and other colored breeds would benefit. As with the current butterfat differential, Holsteins can compensate for a relatively lower test by having a higher volume.

The specifics of any component milk pricing plan need to be carefully examined. No particular plan is automatically good or bad. Better cheese yields from higher testing milk and the superior consumer taste appeal of this milk, which could lead to increased fluid consumption, could be strong arguments in favor of implementing multiple component pricing plan for milk.

Only then will testing the milk from individual cows for protein or SNF content make financial sense to dairy farmers. Those presently testing for these factors are building for the future by identifying cows and bulls with the genetic ability to transmit higher component potential to their offspring.

Good weed control practices save money

NEWARK, DE – Spring planting will soon be in full swing. A key part of any farm management system is good weed control. This is closely tied to making timely chemical applications, using proper herbicides and getting good coverage.

"Everything must work together so each job gets done at the right time," says University of Delaware extension county agricultural agent Dean Belt. "Have spray equipment in top condition well in advance. This allows you time to clean it out properly and make necessary adjustments, repairs and calibration checks."

Calibration is vital to knowing how much chemical is being applied to crops, Belt says. There are many reasons to calibrate before you enter the field.

If too little is applied or if the spray pattern is uneven, weed control may be poor. If too much is applied, extra money is spent with no chance of getting a return on it and crop injury may result. Calibration will pay for itself and isn't nearly as complicated as it sounds.

Another way to save time and money is to mix chemicals properly. Wrong or incompatible mixes can cost money, time and performance, Belt says. Before tank mixing, make sure the products are labeled to mix together and compatible for the planned spray program, especially when using liquid fertilizer in place of water.

Before starting the mixing operation be sure the sprayer and tank are free of oil, grease or any chemical residues. Then:

- Fill the tank one-quarter full with the liquid carrier and turn on the agitator. Adjust the agitation to bring about a rolling action that reaches the surface of the liquid.
- Premix chemicals in buckets of water if possible. This step greatly reduces compatibility problems.
- Add the compatibility agent to the tank according to its label.
- While agitating, add pesticides slowly to the tank in the following order: (1) Add wettable powders and water dispersible granules, allowing time for thorough mixing. (2) Fill the tank to about 90 percent of capacity, then add the liquid. (3) Finally add any elumsifiable concentrates to the tank. Complete filling with water and you're ready to spray.

The agent strongly suggests making up an easy-to-follow check list for each spray schedule. It's a

(Turn to Page A17)