Price Volatility - What to Do About It?

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The volatility of milk prices along with increasing costs for feed ingredients and other inputs has definitely lead to many sleepless nights as dairy managers try to devise the best path forward. Generally, market prices and costs for inputs, i.e. feed and supplies, are influenced by supply and demand economics related to both domestic and international markets. Some expenses and fluctuating income are beyond one's day-to-day control, but management practices do exist to lessen the impact these financial challenges place on the economics of an individual dairy operation.

Managing a dairy business involves marrying financial considerations with sound cow management practices. Tight business times often bring out the best in business and cow managers. The key is to follow a path that results in the best short and long term financial and cow welfare situation. One needs to remember to avoid knee jerk reactions which may result in a short term financial benefit, but impact the dairy operation negatively in the long term.

Unfortunately, the dairy industry has been down this path with volatile input and milk prices many times before and over the years most operations have implemented several survival strategies. The crucial component to review now is that these practices are still in place, under ones control, and are having their intended impact and outcome. To accomplish this task, one needs to continually evaluate weekly or at least monthly, areas associated with on-going financial and cow management. Now more than ever, take control and be the best business and cow manager possible.

Controlling Feed Costs

Feed costs represent the largest expense (50 to 60% of total expenses) associated with producing milk, no great surprise here. Prices for corn grain and soybean meal tend to drive the pricing for other byproducts used in the diets for dairy cows and heifers. With the higher prices seen for corn, soybean meal, and other grain sources, limiting increases in grain prices most likely was a common discussion with one's nutritionist, especially if the price for the grain mix was not advanced contracted.

Diets for dairy cows have and will continue to include the most cost effective solutions while optimizing performance. Cows have a need for nutrients, not specific ingredients, to support the production of milk and these nutrients can came from a variety of feed ingredients. The key is to use a combination of ingredients or feeds which provide the correct balance of needed nutrients. For example, cows, more correctly the microbes in the cow's rumen, need a source of starch, sugar, and NDF to make milk and butterfat. The correct balance of amino acids must also be supplied, which sometimes makes some by-products less desirable in diets for high-producing dairy cows.

Be careful that you are not saving a "few cents" on your grain bill which results in a drop in milk production, fat test, immunity, or reproductive performance. For the most part, production per cow still drives overall profitability. For example, if production drops by just one pound of milk (@ $18/cwt), a savings of $13/ton grain mix would be needed to achieve an equal income over feed costs. The goal should be to economize on the costs of feed ingredients while maintaining or improving milk production! Nutritionists and dairy managers do not feed least cost rations, but optimized or feed efficient rations!

Know your current cost to feed your cows (feed cost per cow and per cwt milk): These calculations go beyond knowing the cost of your grain mix or commodities purchased or the feed cost calculated by a

nutritionist related to the ration they balanced. Feed cost includes not only purchased feeds but also values of feeds raised on farm. Feed cost change over time as ingredient prices change. More importantly, cows do not always consume exactly the amounts calculated by ration balancing programs and feed costs need to include feed fed but not consumed by the cows. Over the years, total feed cost has varied from $0.10 to $0.16 or slightly more on a lb of dry matter basis in corn silage based diets ($40/ton corn silage). What is your actual, current feed cost per cow, cwt of milk, and lb of dry matter consumed? Do you review these values on an on-going, monthly basis? Do you review these values with your nutritionist and how do they compare to his/her other clients or neighboring farms?

Continue to shop for the best buys. These best buys may be in the price of ingredients, reduced costs associated with hauling (back hauls etc.), purchasing in bulk, or cash versus credit pricing. Be careful when buying commodities though – know what you are purchasing. I still remember early in my career a year-long contract UK had for an 18% grain mix. The university accepts the least cost for all purchases unless a reason for rejecting the lowest bid can be justified. After the bid was accepted, this particular grain mix was discovered (after cows dropped in milk) to contain a "by-product" where some of the protein was heat-damaged and unavailable for the cow to digest. So, instead of the grain mix being an 18% crude protein, it was more like a 16% crude protein mix and less energy was also available than expected. We had to add additional soybean meal to the silage to make up for the lack of available protein. Not only did this result in an increased feed cost for the contract year over the bid price, additional labor/time was needed to feed the cows.

Consider the pros and cons of feeding multiple rations: Formulating and feeding more than one ration (or multiple rations, i.e. high, mid, and low) for a herd of cows often does result in feed cost savings. Lower producing cows may perform as well, if not better, on rations formulated to prevent the accumulation of unneeded body condition where they convert nutrients into milk instead. These diets often have more forage and digestible fiber-type by-products than the high group diets and can be cheaper than a high group diet. A balance between additional labor/time needed to mix additional rations versus feed savings needs to be considered.

At Least Monthly Review On-Farm Feeding Programs

More than ever, continuously reviewing your current feeding program and tweaking it to reflect current quality and amounts of forages being fed is important. This helps one make the best use of home-grown forages, corn, and beans. We all understand that forage quality varies between cuttings and years and rations need to be adjusted to reflect these changing qualities. The key is to make this a priority to optimize your resources and production per cow. One area we often forget is that the digestibility of starch in corn silage increases with storage. Thus, new crop corn silage fed in September is different than that fed 6 months later.

Process corn grain adequately prior to feeding: Corn grain that is finely ground (400 microns) provides more energy to the bacteria than cracked corn or more coarsely ground corn. Thus, the reason corn used in TMR rations is finely ground vs being cracked or ground.

Test forages: Forages comprise about 50% of the dry matter intake of lactating cows. Rations need to reflect changing forage quality to ensure that cows and, most importantly, the rumen microbes that in turn feed the cow, are getting the nutrients they need to make milk. Improvements in forage quality can decrease the need for grain and/or increase production.

Harvest the highest quality of forages possible.

Ration Delivery: Ensure that diets are delivered to the cows as balanced such that feed intake is not compromised. Consistency of rations though a consistent mix and adequately, but not excessively mixed ration, is a hallmark when feeding dairy cows.

Don't limit feed intake: Cows eat and need to eat a tremendous amount of feed over the day. Cows eat

numerous (often up to 10) meals daily when given the opportunity. Feed needs to be available in the feedbunk when these cows chose to eat. The inclination, especially with higher feed prices, is to cut down on the amount of feed left in the bunk at the next feeding time, often referred to as "feeding to a slick bunk". The problem comes as groups of cows don't eat the exact same amount each day and the last thing wanted is to limit intake, especially of early lactation cows. If limiting the amount of feed left over at the next feeding, the bunk needs to be monitored and cows fed earlier when they are empty or contain less refusal than normal.

Review feeding programs for heifers and dry cows: Feeding programs are designed for heifers to grow and be a proper size and age at calving. However, cost savings may be in the form of the amount and composition of grain mix needed. For example, if one could reduce the amount of grain fed to a group of 50 bred heifers by 1 lb/head as well as saving $10/ton, a savings of over $250 per month could be realized.

Control Feed Waste

Minimizing feed waste (referred to as feed shrink) of both forages and grains (individual grains, grain mixes, or/and commodities) is one aspect of a feeding program that must be managed since it impacts feed usage and cost as well as overall profitability of a dairy operation. In order to manage the amount of feed used on-farm, actual usage and disappearance needs to be measured. To accurately determine feed shrink, the amount of each commodity needs to be weighed at either delivery or harvest and at feed out. The difference between these amounts reflects the shrink or amount of feed lost due to wind and rain, birds or rodents, spilt feed while loading, feed tracked on tractor tires, errors with TMR scales, feeding errors, and mismanaged practices during storage of silages. Today, the routine use of scales for delivery trucks and feed tracking software, for example Feed Watch™ or TMR Tracker™, make these calculations routine and easier for managers to detect problems or opportunities. Once detecting that losses are greater than established benchmarks or have increased over time, feeding practices can be evaluated and then modified to decrease feed shrink.

Reduce Grain/Commodity Losses: Generally, dry commodities stored in bins have less storage losses (usually less than 4%) compared to those stored in open-face, 3-sided commodity sheds (5 to 15% depending on commodity). Certain commodities, like whole fuzzy cottonseed, will not flow through feed bins and thus, must be stored in a commodity shed. Weather, i.e. wind, can increase feed shrink not only at delivery and storage, but as importantly when commodities are loaded into the TMR mixer. These wind-related losses can occur when commodities are stored in open-sided commodity sheds as well as feed bins and liquid delivery systems. Use of properly constructed windbreaks, for example "L" shaped commodity sheds positioned perpendicular to the prevailing winds or totally enclosed commodity sheds can help reduce feed shrink. Storage losses with wet commodities, such as wet brewers or distillers grains, are higher (generally 20 to 25%) than when stored as a dry ingredient and, as such, these higher losses must be considered when calculating the economics of using these feeds.

Reduce Forage Losses: Silages properly stored in bags, uprights, bunkers, or trenches generally have storage losses of 5 to 10%. Mismanagement of any of these silage storage structures can represent the greatest amount of feed lost on today's dairy operations and the greatest opportunity for changes to positively impact profitability!!! Improperly stored forages, especially those stored in bunkers and trenches, can have storage losses from 10 to 15% or more above the normal storage losses. For example, dry matter losses can be substantial in bunkers and drive-over piles not harvested at the correct moisture, packed adequately, and covered with plastic that is weighed down adequately, i.e. with tires which touch. Filling silos above sidewalls increases their capacity for storage, but if not packed adequately, especially on the sides above the silo walls, can result in much wasted feed due to spoilage.

A study with uncovered bunker silos showed a 75% loss of dry matter of corn silage within the top 10 inches and 25% losses within the next 10 inches of surface area on top of the bunker compared to bunkers properly covered with plastic and tires. For a 30 by 100 ft bunker, approximately 50 tons of silage would

be lost. This amount of silage is equal to the amount needed to feed approximately 10 lactating cows for a year or $2250 worth of silage (valued at $45/ton silage). These losses are substantial and are not seen unless the difference between the amount of silage entering and fed out of a structure is measured. To make the best use of forage resources, proper management of forages during storage and at feedout is critical. Alfalfa hay stored inside generally averages 3 to 5% feed shrink as a result of storage losses.

Other Aspects of Dairy Cow Management Impact Use of Feed Dollars

Reproductive efficiency, cow comfort, mastitis control programs, and replacement management practices impact the efficiency of which feed resources are used on a dairy operation.

Reproductive efficiency: Dairy cows with long days in milk or long dry periods are not as efficient at using feed resources compared to early lactation cows. Thus, keeping on top of the breeding program such that a majority of cows are bred and pregnant within the first 130 to 150 days in milk is important.

Cow comfort: Dairy cows need a comfortable place to rest for approximately 12 hours daily. During this time period, dairy cows ruminate (chew their cuds) which, in turn, buffers the rumen contents and decreases the particle size of forages to increase feed digestion. Minimizing the effects of heat stress through the use of the appropriate number, size, and location of fans in the resting area and holding pen is an important part of cow comfort and getting cows to milk to their genetic potential and rebreed in a timely manner.

Mastitis control programs: Cows with an elevated SCC have reduced milk production, produce unsaleable milk if treated, and have reduced reproductive efficiency. Although high SCC cows do not have higher feed costs, they do have lower income over feed cost due to reduced amount of saleable milk.

Heifer rearing programs: Replacements represent the future productive units of the dairy operation. As such, they need to be fed and managed so they grow and calve at the proper size at an age of 22 to 24 months. In addition, the number of heifers raised needs to match the number needed to replace culled cows and adjust for growth in herd size, if desired. Excess heifers could be sold at an early age or breeding programs adjusted to produce the number of dairy replacements needed, thus freeing up forage, facility, labor, and economic resources. Delaying age at calving increases rearing and associated feed costs and increases the amount of forage needed. In the US, delayed age at calving is generally associated with an additional $2 to $3 daily feed costs (with today's feed prices—even higher) for those heifers calving after 24 months of age. Not to mention, they are consuming 20 to 23 lb/day of dry forage (depending on breed and amount of grain fed), thus increasing the forage needs of the dairy operation and manure that must be handled. Heifers consume a tremendous amount of feed (5.5 to 6 tons of dry forage) over a 2-year growth period per heifer. Consequently, the number of heifers being raised needs to be reviewed so feed dollars and resources are wisely allocated.