

Lessons Learned With Low Milk Prices

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Take Home Messages

- As the U.S. milk market continues to have shifts changes in milk prices, position your future for short term and long term flexibility.
- Key factors when adjusting rations will forage quality, strategic use of by-product feeds, and economic feed benchmarks.
- When making feed changes, do not sacrifice performance, herd health, or reproduction.

Introduction

When reviewing the 2009 dairy industry and economics, no one could image the steep drop in milk price at farm gate (40 percent), the quickness of the drop (less than one month), and the length of the decline (entire year with no breakeven prices occurring). Another interesting fact was in the U.S.D.A. summary in September, 2009; Illinois had the higher milk increase (5.1 percent compared to 2008) on the same number of cows (102,000) while many other states reported less milk and fewer cows. What may have happened in Illinois that allows us to look back to look ahead or prepare for the next milk price challenge?

Providing Economic Flexibility

Illinois dairy managers can have several advantages compared to other dairy managers facing the 2009 low milk prices with high feed prices.

- Illinois dairy producers had ample supplies of forages and corn produced on the farm which did not have to be purchased in the initial five months 2009. This advantage reflects the agronomic management skills of Illinois dairy producers, but they may not have capture higher market prices if they sold feed. But, this strategy avoided out-of-pocket costs which bankers encouraged dairy managers to avoid.
- Illinois producers had not expanded as other dairy farmers and had paid down debt. Bank and interest payment could be avoided. Stable land equity allowed credit to extended compared to dairy cows that lost 25 to 50 percent of equity.
- Illinois dairy farms (average herd size of 106 cows) use family labor as a resource. Dairy farm families did not draw \$50,000 (Minnesota guideline for a dairy farm family with two children) short term.
- Because the average Illinois herd size is under 150 cows, dairy farm managers could qualify for the MILC program providing \$1 to \$2 per cwt month added income. A rBST payment for not using this technology resulting in forty to sixty cents per cwt income source. One Illinois cooperative provide a dollar advanced patronage per cwt payment for several months to assist financially stressed dairy farms.

Making Correct Decisions

An important decision was not to make short decisions to save a nickel while leading to a long term loss of a dollar. Examples of key decisions choices are outlined below.

- Reducing or removing minerals and vitamins can save six cents (heifers) and twenty cents (lactating cows) a day. Because minerals do not immediately reduce milk yield,

dairy managers reasoned this may be a prudent move. However, when mineral deficiencies occur six months later (reduce immunity, slower growth, and declining fertility), it results in large negative economic impacts which may be difficult to pinpoint.

- Holstein heifers must gain over 1.7 pounds per day if they are expected to calve at 23 to 24 months of age weighing 1250 pounds after calving, and produce lactations yields above your herd average. The cost of delayed calving is \$2 per day (reflects only added feed costs).
- An increase in somatic cell count due to reduced immunity and health (removal of organic trace minerals, less vitamin E, and/or energy shortage for example) will lead to a loss of 2 to 2 ½ pounds per increase on linear somatic cell count score.
- An increase in days open will cost \$2 per day (each day over 120 days open) to \$8 per day (each day over 180 days open) based on Wisconsin data which could be related to negative energy balance due to removal of fat or effective feed additives.
- Dropping an accelerated heifer feeding approach can reduce milk yield in the first lactation by 1100 pounds due to its impact on mammary gland development. This decision is a long term investment of \$30 to \$50 added feed costs not recovered for nearly two years in higher milk yield based on IL and NY data.
- Feed additives must be purchased (an out-of-pocket cost) which can return 3 to 10 times the cost of the feed additive (for example a buffer returns 30 cents in added milk production for a six cent investment). The feed additives listed are ranked: 1st choice-- monensin (an ionophore); 2nd choice—silage inoculants; 3rd choice—organic trace minerals; 4th choice—yeast-based products; 5th choice—rumen buffers; and 6th choice—biotin.
- Shifting from a one group TMR to multiple TMRs may be an alternative to lower feed costs. Feeding a ration higher in forages to lower producing cows can save 75 cents or more per day and can improve metabolic health of late lactation cows based on Michigan research. Consider low producing cows may consume 4 to 6 pounds less dry matter which can reduce the estimated savings. High producing cows may need more nutrients to replace lost body weight in late lactation. Heifers may need added nutrients to grow reaching their mature weight. Another economic consideration is if the one group TMR contains expensive nutrient sources (such as inert fat, amino acids, added fat/oil, or high quality RUP protein sources).

Monitoring Feed Changes From Cow Responses

When dairy managers made changes, lactating cows will respond (cows actually “talk” to you). Monitor the following cow measurements to determine if your change led to lost income or health.

- MUN (target 8 to 14 mg /dl to avoid lost nitrogen while maintain milk protein)
- Milk protein and milk fat test (meet or exceed breed averages)
- Management level milk or 150 day milk (should increase or maintain herd values)
- Fecal scores ranging from 2.5 to 3.5
- Changes in feed bench marks (Table 1)
 - *Herd feed efficiency* from 1.5 to 1.7 with each change in 0.1 point worth 34 cents per cow per day.
 - *Feed cost per pound of dry matter* at 8 cents per pound of dry matter reflects the cost

- of feed ingredients selected when building and balancing the ration.
- *Feed cost per cwt* (\$5 to \$6 per cwt) reflects the cost per pound of dry matter, amount of dry matter offered including weigh backs, and milk yield. Milk yield is key factor
- *Income over feed costs* represents margin (dollars available) for fix, variable, labor, and return to management. Milk price is a key factor in this value.

Feeding Strategies That Worked

- Forage quality is a key solution. Consider increasing corn silage levels in your ration as feed cost per cow per day may drop 15 to 30 cents as protein prices remain competitive. Evaluate the use of low lignin forages and forages high in NDFD (neutral detergent fiber digestibility).
- Use of computer modeling programs allow for fine-tuning rations. Lower levels of protein based on amino acid balancing and rumen microbial estimation can be reduce feed costs while optimizing production.
- Insure starch levels and starch utilization are optimal. Lower levels of starch (20 to 22 percent) can maintain milk production with high quality forage, rumen fermentable fiber, adding sugar, and/or feeding an ionophore. Plant or kernel processing of corn silage and processing corn grain can increase starch availability in the rumen and reduce fecal losses of starch. If fecal starch is over 5 to 7 percent, examine sources and processing reducing starch utilization.
- By-product feeds can be an excellent nutritional source and economic correct decision. Distillers grain and wet brewers grain can reduce protein costs. Corn gluten feed, soy hulls, and wheat midds can maintain energy levels while reducing feed costs (Table 2).
- Review shrink losses. Managing and monitoring weigh backs can increase profitability. One guideline is to target 1 to 2 percent weigh back per cow per day. Fine tuning feed bunk management may allow feeding to an empty bunk.

Table 1. Target feeds, level of intake (pounds of dry matter), and feed bench mark values for a Holstein herd producing either 70 or 80 pounds of milk.

Feed Ingredient	Lb (DM) (lb)	Cost (lb/DM) (\$)	(Cost/day) (\$)
Forage	28	0.06	1.68
Grain-energy	10	0.07	0.70
By-products	6	0.10	0.60
Protein supplement	5	0.10	0.50
Min/vit/additive	1	0.40	0.40
Consultant	na	na	0.10
Total	50		3.98

Table 2. Breakeven prices for various by-product feeds and recommended levels of inclusion in lactating cow rations. Feed Val 3 was used to calculate breakeven prices with soybean meal entered at \$350 a ton, shelled corn at \$3.50 a bushel, tallow at 30 cents a pound, dicalcium phosphate at \$25 per cwt, and limestone at \$10 per cwt.

By-product	Breakeven price (\$ per ton)	Level (% ration DM)
Soy hulls	\$109	10

Cottonseed, fuzzy	\$230	10
Corn gluten feed	\$140	25
Brewers grain (30% DM)	\$ 66	15 to 20
Corn hominy	\$140	10 to 20
Corn distillers grain	\$252	10 (> 10% oil) 20 (< 10% oil)