Surviving Low Milk Prices

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INTRODUCTION

During tough economic times it is prudent to evaluate the efficiency of your business. There are many measuring sticks for success, but the most useful during good and bad times is cost per hundredweight generated from accountant summaries. It really doesn't matter how many pounds of milk your cows produce, or what your cull rate is, provided your economic model results in a low cost per hundredweight. This is a good time to consider key components to making cheap milk.

TOP TEN KEYS TO MAKING MONEY IN THE DAIRY BUSINESS

1. Keep a Full Barn
2. Healthy Fresh Cows
3. Offer a Career Change to Unprofitable Cows
4. Realize Quality and Component Premiums
5. Maximize Income Over Feed Cost
6. Procure High Quality Forages
7. Generate Pregnancies (Heifer and Cow)
8. Minimize Replacement Costs
9. Cut Costs Intelligently
10. Control Labor Costs

Keep a Full Barn

Keeping a full barn means averaging 100% of capacity over a year's time. Anything less is a lost opportunity, other than the rare circumstance where a marginal cow is not making money. The definition of "full" or "100% capacity" does not necessarily mean one cow per stall or one cow per headlock. It could mean less or more depending on the facility, environment, and management. Every dairy needs to figure out what "full" is for their facility and management, then strive to stay there all year round.

Healthy Fresh Cows

Trickledown economics relating to fresh cows are simple: poor fresh cow health leads to excessive fresh cow culling, poor reproduction, high replacement costs, high cost/cwt, and eventually a dairy in financial trouble. The number one heard health priority should be healthy fresh cows. Healthy fresh cows trump high milking fresh cows.

Offer a Career Change to Unprofitable Cows

Cows that are not covering variable costs need to be traded in for a new cow, or her spot should be left vacant. A breakeven level of production can be calculated to determine if variable costs are covered as follows: (variable costs)/(milk price per pound). Variable costs are those that disappear if one cow is culled. These include feed, bST, chemical/teat dip, interest, and antibiotic risk. If these costs are not covered by the income the cow generates every day, then the cow is not covering her variable costs. For example, suppose variable costs totaled $5.50 per day and milk is $12/cwt; breakeven level of production is $5.50/$0.12 = 45 lbs. In this case any cow below 45 lbs should be culled. This calculation is independent of the cow being replaced.

Practical uses of this calculation involve adding some common sense to the equation. Pregnant cows (for sure those>100 days carried calf) on most dairies would not be considered for culling. Cows would need to have two test days below breakeven levels to be considered (some cows may have had a “bad“ test day), and the manager or herdsman should visually evaluate before culling to be sure the milk weights are real.

Pregnant cows may be eligible for early dry if it would be less costly to feed her in the dry pen compared to keeping her in the milking string. In this case, breakeven production would be: (variable costs – dry cow feed costs)/(milk price per pound). For example, suppose variable costs are $5.50/day, dry cow feed costs are $2.50, and milk is $12; dry-off level of production is ($5.50 - $2.50)/$0.12 = 25 lbs. In this case any pregnant cow below 25 lbs should be early dried. This logic works to a point – it doesn’t make a lot of sense to early dry a cow with a poor mature equivalent (ME) that is less than 100 days carried calf.

How then is it justifiable to cull poor pregnant cows, or open cows that are poor producers but above breakeven levels? Models have been generated (Eicker et al, Kinsel, 1998, de Vries, 2004) to predict the Net Present Value of a cow relative to a heifer that could take her place. Inputs include value of sold cows, cost of replacement, feed costs, milk price, and risk of pregnancy. A Net Present Value model essentially moves all costs and revenues that are predicted to occur in the future back to present day dollars, making comparison simpler. These models, if followed implicitly, would indicate that any cow with a negative Present Value should be culled. These models are valuable and useful, but can be limited if future economic conditions differ markedly from the present. They are dependent on the cow being replaced.

Realize Quality and Component Premiums

Milk premiums in most markets are offered for high quality milk (low bacteria and somatic cell counts), butterfat, and protein. Milk quality is generally the most lucrative, followed by protein then fat. Total premiums can exceed $1.00/cwt on Holstein herds and more on Jersey and crossbred herds. When milk was $20, a $1.00 premium was nice like icing on the cake. Today with $10 milk it is monumental and potentially life-saving for the dairy.

Maximize Income Over Feed Cost (IOFC)

Income over feed cost is calculated as (milk revenue per cow per day) minus (feed costs per cow per day). If cows are milking 70 lbs, milk is $12/cwt, and feed costs are $5.50/day, then IOFC = (70 × 0.12) – ($5.50) = $2.90. Any change that increases the $2.90 is likely good provided it does not impact cow health.

The IOFC is driven by several factors. Obvious are feed price and milk price. Others include feed conversions, milk per cow, and the value of milk (i.e. components and premiums). Day to day feeding and management decisions should be evaluated using income over feed costs. Feed cost per cwt is a useful tool to gauge the entire feeding program (milking and dry) over a longer period of time, and is impacted by feed buying, shrinkage, waste, and the factors influencing IOFC. Feed cost per cwt is not useful for short term feeding and management decisions; IOFC is more appropriate.

Procure High Quality Forages

The ultimate trickledown economics on a dairy begin and end with forage quality. Cows eating lots of high quality forage under good management will likely be healthy, productive, and fertile. It is quite difficult to have healthy cows with poor forages.

Generate Pregnancies (Heifer and Cow)

There are many calculations available to determine how valuable a pregnancy is to a dairy. Somewhere around $400 is typical, and in the dairy industry we are well aware of the benefits of getting cows pregnant. Often the importance of heifer pregnancies is forgotten, but they generally make up about 35% of the pregnancies generated on a dairy. They are the easiest to get (particularly in summer), and are equally valuable to cow pregnancies in generating cow flow. The number one reason for culling on most dairies is reproduction (often called low milk). Dairies that need to purchase springing heifers to maintain herd size are really buying pregnancies. It is much cheaper to generate them on the dairy.

Pregnancy hard count estimates how many pregnancies a dairy needs to maintain cow flow. Several methods are utilized to compute a hard count. The method described here is simple and relates to cow flow. Assume for this example that a herd has 1000 milking cows (not including dry). This dairy should calve 100 animals per month or 10% of milking cows. Pregnancy Hard Count would be computed as follows:

- Heifer Calvings
    - 35% should be heifer calvings, or 35 per month
    - Inflate by 1-2% for abortions or about 36 pregnancies needed per month
    - 36 per month equates to about 25 pregnancies needed per 21 day cycle
- Cow Calvings
    - 65% should be cow calvings, or 65 per month
    - Inflate by 15% (or whatever the abortion rate for the dairy is) for abortions or about 75 pregnancies needed per month
    - 75 per month equates to about 52 pregnancies needed per 21 day cycle

The most important question to answer reproductively on a dairy is “are there enough pregnancies being generated?” Pregnancy Hard Count is more useful than pregnancy rate or conception rate in answering this question.

Minimize Replacement Costs

Replacement costs are typically the second largest cost of producing milk, behind feed costs. Conceptually, replacement cost is the cost of maintaining herd size and structure. Although genuine dairy accountants have various methods to determine replacement costs, all methods are similar to the following: (value of cows sold - cost of replacement) / cwt milk sold. The value of cows sold is impacted by the kind of cows that are sold (fat, late lactation culls that sell well or beat-up fresh cows that are thin and sell poorly), and the number that are actually sold (deads are generally not sold). The cost of replacement is impacted by what you pay for a new heifer, or the money invested in the home-raised replacement (not including value at birth). In a situation where all heifers are purchased, the value of heifer calves sold is included in the value of cows sold. Quantity of milk shipped plays greatly impacts the calculation.

Our industry focuses on cull rate as a measure of herd turnover. Replacement cost/cwt, as described above, trumps any other measure of herd turnover. It doesn’t matter what your cull rate is if your replacement costs/cwt are low. It doesn’t matter how much you pay for heifers if your replacement costs/cwt are low. The measuring stick is replacement cost/cwt, and a reasonable goal in most areas of the country is <$1.50/cwt.

Some quick cowboy math illustrates these points. The following three examples are for a herd of 1000 cows with 850 producing saleable milk.

- **Scenario A.** ~70 lbs milk, 40% cull rate, 10% death loss, $500 average cull cow price, and $1200 cost of rearing heifers.
    - Milk sold = 220,000 cwts/year
    - Value of Sold Cows = 300 x $500 = $150,000
    - Cost of Replacements = $1200 x 400 = 480,000
    - Replacement Cost = ($480,000 - $150,000) / (220,000) = $1.50.cwt
- **Scenario B.** ~80 lbs milk, 50% cull rate, 5% death loss, $500 average cull cow price, and $1200 cost of rearing heifers.
    - Milk sold = 250,000 cwts/year
    - Value of Sold Cows = 450 x $500 = $225,000
    - Cost of Replacements = $1200 x 500 = 600,000
    - Replacement Cost = ($600,000 - $225,000) / (250,000) = $1.50.cwt
- **Scenario C.** ~60 lbs milk, 25% cull rate, 2.5% death loss, $500 average cull cow price, and $1200 cost of rearing heifers.
    - Milk sold = 185,000 cwts/year
    - Value of Sold Cows = 225 x $500 = $112,000
    - Cost of Replacements = $1200 x 250 = 300,000
    - Replacement Cost = ($300,000 - $112,000) / (185,000) = $1.02.cwt

Reducing heifer rearing costs is an important factor in lowering replacement costs. Many factors contribute, but paramount is getting heifers pregnant. We often mislead ourselves by using a biased number to evaluation heifer reproduction: conception rate. While a useful number in some ways, the most important number is how many pregnancies are generated over a recent period of time such as a week, 21 day cycle, or month.

Cut Costs Intelligently.

Cutting costs is necessary and good dairyman can do this intelligently. Cost cutting is OK provided the following areas are not impacted: Forage Quality, Cow Health, Fresh Cows, and Pregnancies. Dairies that cut in these areas are signaling that they do not intend to be in the dairy business long term.

Control Labor Costs

There are many measures of labor efficiency. They include cows/employee, and pounds of milk sold/employee. While some of these measures have some utility, the ultimate measure is labor cost per cwt. It really doesn't matter how many employees you have if labor costs per cwt are "good". Several issues can skew this number, including contract labor (outside breeding services, outside maintenance services, etc) and if replacements are raised on or off the farm. Ideally only labor involved in taking care of the milking herd should be included. Labor involved with replacements or farming should be considered separate.

SUMMARY

Having a low cost/cwt trumps all other rules for making money. Those that make cheap milk will remain in business the longest if they choose.

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