

PROFIT SEMINARS

By Jessica C. Scillieri Smith

The economics of milk quality

As milk prices fall this year, dairy producers are looking for tactics to maintain profitability. How can production be increased? How can costs be reduced? No area of the farm is immune from scrutiny and all current practices should be evaluated for their “bang for the buck.” Milk quality should be one of these areas, as the economic effect on the dairy goes far deeper than the premiums seen in the milk check.

First, start by calculating how much additional money could be gained by comparing current milk quality and mastitis to the farm’s Somatic Cell Count (SCC) goal. The University of Minnesota’s Department of Animal Science website www.qualitycounts.umn.edu provides an excellent resource in an Excel spreadsheet to quantify the income waiting to be captured. It’s not hard to quantify the cost of medication and veterinarian time related to clinical mastitis or even the potential premiums received from a lower SCC. The lost income of waste milk, reduced production, involuntary culls and effect on reproduction are the “hidden” costs of poor milk quality. Comparing a farm’s current situation to its goal using this model will quantify the additional income that can be reaped from improving bulk tank SCC.

Figure 1 provides an example from this resource of potential income on a 320 cow dairy that reduces SCC from 250,000 cells/ml to 150,000 cells/ml and clinical mastitis from 2% to 1%.

Figure 1. Estimated economic “losses” due to milk quality when the current level is compared to a goal. This example is a 320 cow farm, with a SCC of 250,000 cells/ml and 2% clinical mastitis per month, compared to a SCC goal of 150,000 cells/ml and 1% clinical mastitis. Actual numbers will vary by farm. Analysis used University of Minnesota’s Quality Count\$ spreadsheet S-MP-3, found at <http://qualitycounts.umn.edu/ExcelSpreadsheets/index.htm>.

\$ 4,627	clinical	losses due to excess clinical mastitis
\$ 8,205	production	dollars of milk lost per year due to subclinical mastitis’ effect on production
\$ 10,964	premiums	losses due to lost premium income
\$ 47,846	culls/deaths	losses due to excess culling and death
\$ 71,642	total losses per year above the desired baseline	
\$ 199	losses per cow per year above the desired baseline	

No farmer wants to dump more milk or treat more cows than necessary. These are “high profile” losses associated with milk quality and mastitis. Fortunately, expenses and lost income can be quantified, and options are available to mitigate the effect on the bottom line. Culturing cows with clinical mastitis, either at a lab or with on-farm culture, will help identify animals that have negative cultures and would not benefit from intramammary antibiotics. In addition, those cows with infections can be treated with the most appropriate therapy for that type of infection to optimize response. Using such techniques reduces antibiotics used by the farm, improves response to treatment and allows milk to go back in the

Improve Somatic Cell Count to improve a farm’s bottom line.

tank faster. Waiting 24 hours for initial results does not increase the risk of the cow becoming chronically infected, diminish treatment efficacy or negatively impact culling rates. For a few dollars this additional information, coupled with a pathogen-based treatment protocol from your veterinarian, can net \$20,000 to \$30,000 per 1,000 cows annually in reduced costs and increased profits.

The hardest aspect of lost income to conceptualize is the effects on the cow. It is common to see a reduction in milk production during an episode of mastitis, which should improve after the cow has recovered. However, milk production will be reduced for the remainder of the lactation, resulting in a long-term effect due to the “hidden cost” since it is difficult to see on a day-to-day basis. For cows with clinical mastitis, milk on average is reduced by 4.4 pounds (2 kg) per day! For a cow that is still early in lactation, those unseen pounds of milk can really add up over the duration of the lactation.

The effect of mastitis, both clinical and subclinical, has further reaching effects than just the mammary gland. Inflammation in the udder can also affect the reproductive system. Cows that experience mastitis before insemination have an increased calving interval, a decreased conception rate and increased risk of early embryonic death. Mastitis has far less of an effect on a pregnancy after 45 days. Cows that experience mastitis (both clinical and subclinical) before insemination or in the first 45 days after insemination are less likely to conceive or

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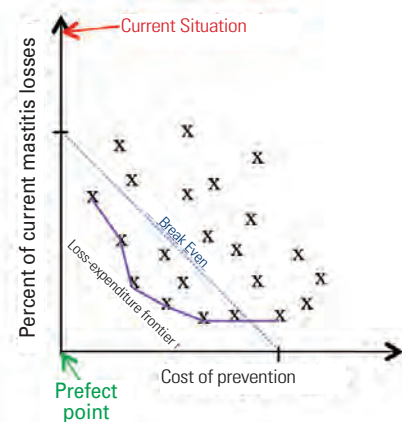


Figure 2. A comparison of different options to improve current mastitis in relation to the current situation (red arrow). All options result in different costs (increasing along x-axis) and different reductions in current losses from mastitis (y-axis). While no solution will eliminate mastitis losses 100% without any cost (which would be the “perfect situation” at the green arrow), the best situations (x marks) will get you the closest (loss-expenditure frontier). Yalcin, et al, Preventive Veterinary Medicine, 1999.

THE MANAGER

rectly. They were willing and appreciative of the help.”

While Jake initially thought the farm could do their own planning he soon recognized the value of hiring a professional business planner.

“Business planning was most important. It opened our eyes to see what kind of position the business is in financially and to see where the business can go. The biggest value was setting up the LLC,” Jake said. “Mark helped us budget five different scenarios with varying herd sizes. It gave us confidence to begin the new facility. Our goal is to have 400 cows by the end of the year.”

The business planning process has also helped prepare them to meet successfully with loan officers and to develop a relationship that will support them as the farm heads into a year of tight milk prices, Jake said.

“They had to take two leaps of faith: one was with the initial barn and parlor and with production improvement, and they did it. The second big leap was purchase of the neighboring farm, which started the second phase. They’re still not where they want to be in the long run, but they have a lot of determination. One of our goals is to increase to 400 cows quickly to help with cash flow,” Mapstone said.

The farm also is implementing a Comprehensive Nutrient Management plan. As part of that, new manure storage was built and plans are underway to build feed storage. While Environmental Quality Incentives Program (EQIP) funds were used for the manure storage construction, the Conways said it was useful to have DAP funding for the planning process while they were waiting to receive EQIP funding.

“One of the biggest challenges to building a barn is cash flow. The hardest part of the manure storage was waiting on grant money,” Jake said.

“The process to receive funding through DAP is simple,” said PRO-DAIRY DAP program coordinator Caroline Potter. “It fits well with other programs and facilitates design of funded projects to get Best Management Practices implemented quickly. They can begin

planning while waiting for project funding from other grant sources to come through.”

DAP also encourages farmers to tap into outside expertise and through DAP consultants are working with farms they haven’t worked with before, Potter said.

“DAP has helped me get in contact with the next generation on many farms that I may never have had the opportunity otherwise,” Mapstone said. “DAP really helps bring smaller farms along in monitoring budgets, timelines and financial understanding. The process of benchmarking helps them improve financial performance and record keeping, to see where they compare, and to develop strategic moves.”

Farms who are thinking about expansion or generational transfer should use the system, Randy said. He also recommends a profit team, because, he said, it helps all their consultants be more accountable.

“There are a lot of experts out there. The more ideas you have, the better management decisions you can make,” Randy said. “It’s really helpful to bring a team together to help plan for the future. Even if you’re not expanding there’s always planning to do.”

The next steps for the farm depend on land availability. The herd can grow to 500 cows with existing land resources. But, the brothers can also envision growing to 1,000 cows, if more land were to become available.

“We’re really blessed. I certainly wouldn’t be doing this without the boys. I have the best job because I get to work with my boys. I want to be financially stable so hopefully they will have free time and quality of life,” Randy said. “In this day and age you can’t farm without all the consultants and the extra help. As we’ve grown there’s been a learning process. Without them it would be overwhelming.” □

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carry the embryo to term. The cost of having a cow open longer than 150 days is \$2 to \$4 per day.

It’s one thing to figure potential lost income due to milk quality, but another to figure out what steps to take to improve. Improvements have to make sense financially and have to pay for themselves over time. A way to consider options for improving is to evaluate the potential cost versus the potential reduction in costs associated with mastitis for each option. A strategy that has an equal cost compared to benefit would break even. Strategies with a lower cost than benefit are financially advantageous for the farm and should be considered. Many common practices in the industry are good examples of financially beneficial strategies, such as pre- and post-dipping, dry cow therapy and routine equipment testing.

Figure 2 shows the comparisons of costs and benefits. Each “x” is a different strategy or combination of strategies to improve milk quality. Those that have a cost equal to the reduction in mastitis-

related losses will break even. Those that have a lower cost compared to the reduction in losses are beneficial to the dairy and are closer to the “loss-expenditure frontier” and are the best “bang for your buck.”

Every farm can continue to improve its milk quality, increase income and reduce expenses. Smart approaches to reduce the risk of mastitis, along with making intelligent treatment decisions, will reduce expenses from antibiotic use and milk down the drain. It should also result in a fatter milk check through cows that are able to reach their potential and increased quality premiums. All changes should be evaluated objectively to ensure that the potential benefit outweighs the cost to the dairy so that each dollar spent is a wise investment during leaner months. In the end improving milk quality is good for the dairy farmer and the dairy consumer! □

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