

Ten key herd management opportunities on dairy farms

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Tighter and potentially negative margins on dairy farms now and for the next period of time make it even more critical for dairy producers to focus their management skills on making sure that their herd management is “being all that it can be”. In a previous paper, we outlined “Ten low investment, high return management opportunities on dairy farms”. The purpose of this paper is to give some added focus to this material and add other key points for discussion and evaluation within individual dairy farms.

1) Maximize milk component production – Top-end herds in the monthly Dairy Profit Monitor benchmarking program www.dairyprofit.cornell.edu are producing a combined total of 6 lbs/day per cow or more of fat and true protein, with a solid goal across herds of greater than 5.5 lbs/day per cow. Although the major driver of fat and protein yield is overall milk yield, component percentages are also important. In general, herd-level milk fat percentage below 3.5% and true protein percentage under 3.0% in Holstein herds suggest opportunities for improvement. Motivation to seek this improvement needs to be based on the current value of milk fat and protein. Low milk fat suggests passage from the rumen of unique unsaturated fatty acids that directly inhibit milk fat synthesis and that there is opportunity either in ration formulation (unsaturated fats, carbohydrate balance, forage quality issues) or in ration implementation (dry matters, amounts fed, sorting, etc.). In the case of milk protein, levels below 3.0% suggest that rumen fermentation and microbial protein synthesis is not being maximized, or there are opportunities to improve amino acid balance by use of blended proteins or protected amino acids. The general timeline for the impact of ration changes on milk components is 10 to 14 days after implementation of the change.

2) Relentlessly seek marginal milk opportunities – Generally, the highest profit margin production is that from marginal (incremental) increases in milk production. This can be accomplished by herd-level management strategies such as changing milking frequency (e.g., 2X to 3X or 4X/2X milking), shortening dry period length on higher producing cows down to 40 days dry, use of bST, or capturing feed efficiency through use of compounds such as Rumensin. We recently completed a field study to evaluate production responses to 4X milking during the first three to four weeks postcalving followed by 2X milking thereafter. Although responses varied among farms and by lactation group within farm, all farms had positive production responses for cows milked 4X/2X and the average response was approximately 3.5 lbs of component-corrected milk yield across the first 7 monthly test days. The overall increase in labor/milking capacity for a 2X herd to actualize 4X/2X is only about 7% compared to 30% for whole-herd 3X. With any of these changes, it is important to look at not only the expected increases in production, but also the changes in input costs to determine what the actual profit may be.

3) Don't lose fresh cows -- The best dairies that we encounter maintain fresh cow loss in the first 60 days in milk at or below 6 to 7% of calvings, without keeping low producing fresh cows simply to keep this number lower. Many dairies continue to lose 10 to 15% of fresh cows during the first 60 days in milk, frequently because of health disorders caused by overcrowding either before or

after calving, frequent group changes before or after calving, or competition issues between springing heifers and older cows. Ration formulation issues are relatively rare, but ration implementation issues (long chop length of dry forages in dry/prefresh TMR leading to sorting, inaccurate weighing of ingredients, not accounting for dry matter changes) are common. Farms with high quality forages typically will need to obtain low energy forages for far-off dry cow rations because high energy intake far-off can lead to more fresh cow health disorders and increased fresh cow loss. If overall management practices and grouping are in line, there is little added value from routine drenching/pumping practices.

4) Identify and potentially cull low value and low profit cows – Identify those low producing cows who are not generating enough revenue to cover variable feed and labor expenses and use routines such as COWVAL in DairyComp 305 (either on-farm or can be run by DairyOne technician at monthly herd visit) to identify those lower value cows in the herd for either removal, dry off, or replacement. In overstocked pens, removal of low profit cows may result in little to no change in overall milk yield because of better overall performance of the remaining cows. It is important to analyze each individual herd situation, perhaps in conjunction with your agriservice professionals (consultants, extension, veterinarian, nutritionist) because the opportunity can vary widely from herd to herd.

5) Ensure that all management protocols are working and being followed – Protocol drift in many areas of dairy herd management (an incomplete list includes milking routines, calving and colostrum management, reproductive program implementation, and feeding management) is common. This can easily lead to drag in milk yield, higher SCC, poorer conception rate, increased morbidity and mortality in calves, lower feed efficiency and poorer rumen health among other issues. Are you losing out on milk quality premiums because of milking routine/facility issues or a few high SCC cows that are elevating the entire tank? Take the opportunity to review protocols with employees and provide feedback to ensure that these protocols are getting the response and return that you expect.

6) Don't incur heifer rearing costs longer than necessary – Despite years of research and herd experience that suggests that herds can grow heifers well and calve them at 21 to 22 months of age, many herds still average 24 to 26 months age or higher at first calving. This can incur substantial additional cost both in terms of feed requirements and facility/labor to support additional heifer inventory. An Excel spreadsheet calculator for evaluation of the heifer enterprise is available at the PRO-DAIRY website located at <http://www.ansci.cornell.edu/prodairy/index.html>

7) Maximize your reproduction program – Better pregnancy rates on dairy farms generally correspond with lower days in milk and more overall production of milk components. The calculated cost per day open increases from about \$3 per day at around 120 DIM to \$5 per day later in lactation. Is your current reproductive management program getting all cows bred for the first time by 70 days in milk, with overall calculated 21-day pregnancy rate at 20% or greater? Strategic use of synchronization programs combined with attention to detail in all aspects of breeding protocols are key aspects of reproductive management.

8) Optimize neonatal management -- Opportunities exist on many dairies to decrease stillborn (DOA) rates and decrease morbidity and mortality in calves through the milk-fed phase and

weaning. Our best dairies consistently maintain dead-on-arrival (DOA) rates in female calves at around 4 to 5% of calvings; however, a number of dairies have DOA rates of 8 to 10% or more. Intensively managing the calving process for a “just-in-time” move from a close-up group to a calving area usually decreases DOA rates (and also decreases overall fresh cow problems). More calves born alive provides more calves that either eventually enter the herd or can be sold to improve cash flow.

Once born alive, studies suggest that calf mortality rates average 8% and morbidity averages about 30%. Excellent colostrum management [4 quarts of quality colostrum (> 45 to 50 mg/ml of IgG; < 100,000 CFU/ml of bacteria) within 4 hours of birth for Holsteins) is critical to ensure that calves have sufficient passive transfer of immunity and nutrition immediately after birth. Calves should be fed to double their birth weight by 56 days of life, which is higher than traditional feeding recommendations – this plane of nutrition both enhances the efficiency of lean gain and provides nutrients to allow the immune system to function, thereby decreasing veterinary and medicine costs for the calf program.

9) Strategically identify ration opportunities – Opportunities exist both in terms of using accurate forage analyses to enable tighter ration formulation and more sophisticated forage analyses (e.g., fiber digestibilities) integrated with nutritional models to optimize use of homegrown forage within dairy rations. If forage is of high quality and inventory is adequate, is it being utilized to its potential? Likewise, if high quality forage is not available, are there other ration adjustments that can be made to optimize milk yield? Recent work has suggested that there may be opportunities to strategically decrease protein feeding levels and maintain high milk and milk component yield. This strategy has focused primarily on decreasing rumen degradable protein supply to about 8 to 9% of diet dry matter and using high quality undegradable protein sources and amino acids to ensure adequate metabolizable protein supply. Economics likely will make this approach more attractive in high corn silage based diets when haylage inventory is limited. Research consistently indicates that there is no productive or reproductive reason to exceed approximately 0.40% phosphorus for fresh cows, and 0.35% phosphorus for cows at other stages of lactation. Ration levels of 0.35% phosphorus are typically achieved using only basal feed ingredients, and no added phosphorus from mineral sources. When making changes to the overall ration program, it is important to measure and track net milk income over feed costs to ensure that the changes you are making are providing the results that you are looking for.

10) Maximize your feeding management program – The feeding management program can result in hidden losses in feeding programs. Opportunities range from decreasing shrink at the silo by better face management in bunks and bags to accurate and frequent (at least weekly) assessment of silage dry matters to ensure more consistent delivery of diets to cows. This is another area in which protocol drift both within a feeder and across multiple feeders is common, which can change particle size and consistency of diets, which contributes to inconsistent intakes and lower efficiency of use of rations.