

Know the numbers that really count

Of all the numbers our records can provide, relatively few tell us that problems are developing . . . accurately and soon enough.

by Greg Bethard and Jim Barmore

IN A previous article (September 10 issue, page 603), we discussed the importance of asking the right questions when tracking the progress of a herd. The emphasis was on asking questions that are meaningful to the business, then seeking measures or monitors that address those questions.

Here's a more detailed look at some of the key questions:

Are fresh cows doing well? Monitors of limited value include average milk peaks in the herd or any other "average" that applies to cows that calved over different time periods. Better monitors include fresh cow disorders as a percent of calvings, milk weights at specific time periods during the first 60 days fresh (requires daily milk weights), first test milk weights, and 30- and 60-day cull rate (number of cows that left less than 30 and 60 days in milk divided by calvings).

Are cows getting pregnant? Monitors such as average days open, percent of herd pregnant, and calving interval are of limited value. We should be most concerned about the number of open cows in the herd, and the rate at which they are conceiving. The most appropriate monitor is 21-day pregnancy rate. That is the number of pregnant cows every 21 days divided by the pregnant-eligible pool (cows beyond the voluntary waiting period that are not do-not-breed (DNB) cows). The rate at which cows are resynchronized also is important.

What are culling patterns telling us? Overall cull rate sheds no light on this question. Two additional questions further refine the issue . . . are too many fresh cows leaving and why, plus are the cows that need to be culled the ones that are leaving? Calculating a 30-day (or 60-day or 90-day) culling rate, as previously described, will answer the first question. Quantifying the number of "bad" cows or "DNB" cows will address the second question. Any cow that is open, 100 days in milk or more and giving less than 35 pounds of milk is a "bad" cow in our estimation. This is especially true when other cows are available to fill a stall.

How is fresh cow and overall herd health? This is a somewhat vague question that can encompass many areas and will vary, depending on each dairy's ability to detect, define, and record incidence of disease consistently. Number of cows in the hospital pen, death loss, cows shipped, and disease incidence rate will provide some insight. Visual observation of the herd, including general appearance and condition of the cows, locomotion status, manure appraisal, and cud chewing may provide additional insights.

Percent born dead (DOAs) for cows and heifers calving, over a given time period, is a useful monitor of calving problems and the work being done in the maternity area. Other more subjective measures may be useful for some dairies, such as scoring calving difficulty and assistance provided.

You should track metabolic disorders as a percent of calvings over a given time period. For large dairies, this time period may be a week or month. For small dairies, this may be quarterly, semi-annually, or annually. It is useful to compare first-calf heifer disorders separately from older cows.

Dairies do not all record metabolic disorders in the same way, so they are difficult to compare or

benchmark. For example, what is the definition of an RP? Is it a retained fetal membrane soon after calving, 24 hours after calving, 48 hours after calving, or only when a cow goes to the hospital pen?

Incidence of DAs is more straightforward. Milk fever incidence is affected by the aggressiveness of the people working with fresh cows. Ketosis is very subjective and most difficult to benchmark.

Having said this, some reasonable goals are less than 3 to 4 percent DAs, less than 10 percent RPs, and less than 1 to 1.5 percent milk fever. Obviously, breed, season and environment will impact these numbers.

Are the "good" cows performing? Which are the "good" cows? Recent milk peaks or production for cows in the earlier stages of lactation are worth monitoring to evaluate to see how the "good" cows are milking. The percent of cows over



MARGINS ARE BETTER DETERMINED by feed cost per hundredweight of milk and income over feed cost by cost per cow per day. We need to focus on how heifers compare to cows, milk:feed efficiency, numbers of "good" cows and "bad" cows, and 21-day pregnancy to know when we're improving or losing ground.

100 pounds of milk may be meaningful, along with the "ceiling level" of milk production, or the top level that cows are achieving under current feeding and management conditions.

How many "bad" cows are there? Every dairy should have its own definition of a "bad" or unprofitable cow. Once the criteria for a "bad" cow is established, ask yourself whether you're removing these cows from the herd, or are you holding on to them? For most dairies, cows that are more than 100 DIM, open, and under 35 pounds would be a "bad" cow. Criteria for a cow to become a DNB should be defined clearly by the management team.

How are heifers doing compared to older cows? Mature equivalent (ME) production is an attempt to correct milk production for age, among other factors. Comparing 305 MEs for heifers and cows provides a report card for how heifers have done. First- or second-test 305 ME projections provide more timely data and provide a sense of direction of how fresh cows are doing relative to previous points in time. Both reproduction and

health data always should be evaluated based on lactation number, specifically looking at differences between first-calf heifers and cows.

What about feed intake levels and variation by pen? Most nutritionists prefer to follow dry matter intakes for the herd and by group. Many want to know if cows are converting feed to milk efficiently. The milk:feed ratio (pounds of milk per pound of dry matter intake) typically is monitored to answer this question. This value is most useful when determined for the entire milking herd. This number does have some value as long as you understand the context of how it's interpreted. The milk:feed ratio will vary considerably, depending on numerous factors, including herd status (portion of first-calf heifers in the herd, average days in milk for the herd), accuracy of measuring true intakes versus feed delivered, and accuracy of measuring 24 hours of shipped milk. It may be beneficial to monitor the variation in intake within a pen as well. This possibly will give you a handle on the impact of pen movements, weather, forage quality, and numerous other factors.

What is the pattern of milkfat and milk protein levels? Milkfat might be considered the industry "standard" for monitoring nutrition and feeding. Although valuable, it's our belief that this often is misinterpreted and misused in the industry in terms of evaluating the true rumen health and energy status of cows. Interpret milkfat levels carefully. These are easy numbers to come by on all dairies, but use with careful interpretation. Milk protein and milk urea nitrogen also are useful as monitors.

Are my feed costs acceptable? Feed cost per cow per day often is used as the primary monitor of feed costs. However, this number is limited as a monitor for obvious reasons . . . higher-producing cows eat more feed. Feed cost per hundredweight of milk is a better measure of feeding economy, and this value has some use as a report card. But it has limited use as a monitor.

Income over feed costs (IOFC) is a better monitor for short-term decisions. As an example, consider two herds with varying production and feed costs, but similar milk price (\$15 per cost per hundredweight). Herd A has low feed costs (\$2.95 per day) and low milk production (65 pounds per day), while Herd B has higher feed costs (\$3.40 per day) and milk production (75 pounds per day). Feed cost per hundredweight is \$4.54 for Herd A and \$4.53 for Herd B. However, income over feed cost (IOFC) is \$6.85 for Herd A and \$7.85 for Herd B.

This example illustrates several points. First, feed cost per hundredweight is not necessarily a good monitor. Second, benchmarking between herds can be very misleading. Feed cost per hundredweight is not adjusted for fat and protein content of milk, so herds with higher components often will have a higher feed cost per hundredweight, all else being equal.

Some dairies also will include dry cow feed cost in the feed-cost-per-hundredweight calculation, while other dairies will not. This can be a significant source of error when benchmarking feed costs between dairies. Generally, using both IOFC and feed cost per hundredweight of milk will provide a more accurate assessment of feed costs than either one alone. For sure, both of these monitors are better than feed cost per cow per day.

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