What herd records can and can't tell us

Many of the benchmarks our industry has used don't do a good job of alerting us when problems are brewing.

by Greg Bethard and Jim Barmore

AS AN industry, we have used computers to process and calculate a wealth of data about our herds and farms. We have developed many benchmarks and typically have provided a "report card" that suggests past success or failure. However, report cards generally do little to predict future outcomes. More importantly, benchmarks often are too slow in identifying trends that tell us there is a serious problem developing.

Aggressive and successful businesses are more interested in where they are going than where they have been. Still, our industry is overloaded with benchmarks that show past performance and provides only historical perspective. Although benchmarks and report cards have value in certain instances, they do not necessarily provide meaningful information to help dairy owners and managers navigate and improve over the upcoming weeks and months.

As opposed to a report card, we try to develop "monitors" to access dairy performance. What does the word "monitor" mean as applied to dairy records? As a verb, it means the process of tracking parameters to detect change or lack of progress. As a noun, it is a specific parameter that is measured routinely.

What can we gain from monitoring records on a dairy or heifer operation? There really are three reasons to monitor:

- You can evaluate the impact of a management change.
- You can detect an undesirable trend or result.
- You can motivate change.

Possible changes include a revised ration, grouping changes, facility changes, and so forth. Before any change is implemented, you should have a plan for how to evaluate the response. You need to know what past results have been and establish the ability to measure future performance with the appropriate numbers.

It is important that you answer some questions before you determine what measures you're going to track. For example, a question may be: "Is fertility in my herd declining in this hot weather?" Which measure or measures would appropriately answer this question? It makes little sense to monitor a parameter and then decide what questions it may answer.

Monitoring data requires time and effort. Someone must collect the data, and then the data must be analyzed and interpreted. If this process does not result in discussion and/or action, then why bother? Indeed, the goal of monitoring is to find areas where changes can be made to improve the business. Monitoring can be a waste of time and effort if decisions aren't made and changes in practices do not result.

In short, monitors should:

- Be proactive
- Be readily measurable
- Impact improvement and profit
- Minimize variation, momentum, and lag and bias
- Result in discussion and action

No monitor is perfect, although some are better than others. Most monitors have one or more inherent problems, according to dairy records analysts Steve Eicker and John Fetrow. Those problems may be variation, momentum, lag, or bias.

Variation results from a few observations having large impact on overall results. That's why we especially have to be careful looking at the records of smaller herds. For example, suppose in one week that a group of 10 cows were palpated for pregnancy, and four were checked pregnant. Suppose the next week that another 10 cows were palpated, and three were pregnant. The numbers would suggest that palpation pregnancy rate dropped from 40 to 30 percent. This is a 25 percent reduction in palpation pregnancy rate. Did the dairy really get 25 percent worse in a week?

Momentum is when too much time goes into the calculation, making changes difficult to detect. Big changes in performance are not detected quickly if there is too much momentum. Rolling herd average, average days open, average calving interval, and average milk peaks are examples of measures with too much momentum. Rolling herd average is the classic example of a number that is very slow to change, since a year's worth of data goes into the calculation.

Lag is the time between when an event occurs and when it is measured. For example, age at first calving is a parameter that has significant lag. By measuring age at first calving, we are measuring an event that happened nine months ago (conception). Although a heifer grower may want to record age at first calving for a report card or for marketing purposes, it has no value as a monitor.

Bias occurs when data is ignored or not included in the calculation. This includes using a subset of the herd or not accurately recording data. Conception rate is a good example of a parameter with bias.

Suppose a dairy has 100 cows come into heat in a given 21-day period. The herdsman feels confident that 50 of the cows are in good heat and will conceive but is not sure of the other 50. If only 50 are bred, and 40 conceive, the records would indicate an 80 percent conception rate (40/50). If all 100 cows were bred, and 60 conceived, then conception rate is 60 percent. If conception rate were the parameter used to monitor success, the first alternative would be optimal. However, the latter example with a lower conception rate resulted in 20 more cows getting pregnant!

Traditional monitors include rolling herd average, milk peaks, days open, calving interval, age at first calving, and so forth. We've already said that these parameters are worthwhile as report cards, but have limited use as monitors. Our point is that if these numbers get worse, the dairy likely has had a problem for some time.

Milk peaks can be useful provided the time frame is appropriate. Average milk peaks include cows that have calved over many months, making it difficult to quickly determine change.

So, what questions should we be asking to monitor herd performance? Here are some of the key questions that we like to go over regularly with our clients:

- Are fresh cows doing well?
- Are cows getting pregnant?
- What are culling patterns telling us?
- How is fresh-cow and overall herd health?
- How are the "good" cows in your herd performing?
- How many "bad" cows are there?
- How are your first-calf heifers doing compared to older cows?
- Are your dry matter intakes acceptable?
- What is the pattern of milkfat and milk protein levels?
- Are your feed costs acceptable?

These certainly are not the only questions. Along with their advisors, each dairy should develop a set of questions that are important to their operation. In the next issue, we will look at monitors or measures that address these key questions.

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