

CALVING EASE

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HOW MUCH IS ENOUGH?

How should we set a goal?

“Enough” is always defined in relationship to a goal. Some goals deal with outcomes or end results. Examples are rates of death and gain. Other goals deal with processes. These measure intermediate things. Examples are sickness rates, levels of antibodies in calf blood, and amount of colostrum fed to newborn calves. These are means by which we avoid death or achieve gains.

While raising calves, I felt it was important to set two outcome goals. I always kept track of death and growth rates. Over several years I developed a pretty solid idea of what was happening. How did I set these outcome goals for a new year? I looked back and said to myself, “This year we can do a better job than last year. Let’s see if we can raise our rate of gain from birth to thirty-five days from 1.5 to 1.7 pounds per day.” That is, my goal was to improve compared to my own history.

It is equally valid to compare your operation to an outside source. Maybe you read that a dairy industry standard or goal for mortality among preweaned calves is less than seven percent. Or, a person that you think does an outstanding job of raising calves has a growth rate at weaning that is higher than yours. It’s legitimate to use that person’s experience as a standard when setting your own goals.

Process goals are set in similar ways. My goal for calves treated one or more times for respiratory illness by 120 days was no more than five percent. That came from on farm experience. A calf enterprise with a different pathogen profile, less desirable facilities and staff might set this goal at twenty percent.

How high should we set the bar?

It is possible to set unprofitable goals. We set the goal or bar so high that the expenses are unreasonable. How can this be? The economic law of diminishing returns tells us that at some point as we invest resources in a process, the amount of return will begin to decrease compared to the investment. For example, all of us have heard about high production of corn per acre or milk per cow. At extremely high production levels (for example, a corn contest, a prize cow) the cost per unit of production is prohibitively high. The cost per bushel or pound of milk is above its market value.

If we identify the cost of inputs for a calf enterprise, we might find that eliminating the very last percent of mortality or getting the last tenth of pound gain per day is much higher than the value of the calf. Or, we may be encouraged to eliminate pathogens from calf environments. That is, get rid of all the pathogens. Biologically, that is not easy. Economically, we may ask, “How many of the pathogens can we afford to get rid of?” How low should the bacteria count be in colostrum? How many Staph species and Strep species bacteria can calves live with without significant diarrhea problems?

Redefining “Enough”

Clinical experience and economics need to come together to suggest profitable standards. We know that calves can be exposed to relatively high Staph species and Strep species contamination of their food supply (e.g., 100,000 cfu/ml) with few if any bad results. But, relatively low levels of fecal coliforms (e.g., over 5,000 cfu/ml) may significantly increase the number of clinical scours cases. Thus, while it is economically sound to get coliform counts very low, it is not equally profitable to try to suppress Staph and Strep count to the same low levels.

What standards should we set for colostrum management? This is a labor-intensive area of calf management. Do we want to adopt practices that result in an average blood serum total protein (BSTP) level of 6.0 or higher? California researchers recently reported that feeding Jersey calves roughly four quarts of high quality colostrum in two feedings rather than one resulted in higher BSTP values (2 feedings = 6.9, 1 feeding = 6.7). Clinical experience suggests that values much above 5.5 seldom have an impact on treatable scours rates. So, since both of these feeding methods result in stratospheric BSTP levels, does it make any difference, which one is used?

In contrast, clinical and on farm experience agree that calves with BSTP values below 4.5 are the ones most frequently treated for scours. In fact, my experience suggests that, in a large population of calves, death rates for these low BSTP calves are roughly three times those among calves with BSTP values 5.5 and above. Economically, it makes a lot of sense to focus on the lower end of the scale. That is where the sickness and death loss occur most frequently.

Does “enough” need to be redefined? It may not be our average BSTP. It may not be the percent above 5.5. Rather should “enough” focus on the highest risk calves? What percent of our calves fell below BSTP 4.5 last year? Can we do better this year? What percent of our calves were fed colostrum within the first four hours? Can we do better this year? Or, in terms of growth, what percent of our calves fell below 1.0 pounds gain per day at weaning last year? Can we do better this year?

Reference: Jaster, E. H. “Evaluation of Quality, Quantity and Timing of Colostrum Feeding on Immunoglobulin G1 Absorption in Jersey Calves.” Journal of Dairy Science 88:296-302.

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