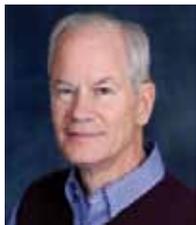# Calf and heifer strategies tested

HOW the Spanish calf and heifer ranch, Rancho Las Nieves (RLN), researches growing strategies was discussed in the April 10, 2008 issue, page 264. Several management issues were highlighted along with a description of data collected and how this factored into making management decisions.

Kertz

At the 2010 Tri-State Dairy Nutrition Conference, Alex Bach presented a sequel in raising dairy replacements objectively by using on-farm records to make decisions. Fallout from the Icelandic volcano prevented his presence at the program, but he made the presentation via video and then was available via web camera to take questions.

The whole reason for collecting and analyzing data is to help reduce age at first calving which, despite general agreement on the goal, has not changed much in more than 20 years in the U.S. It still averages about 25.5 months of age. Since few calf/heifer operations or dairies measure growth, and then typically only body weight, how can decisions be made to improve?

At minimum, dairy farmers and growers should measure weight, height, and intakes. These then provide the basis for many data-based decisions.

A word of caution

Often, we use averages as the basis for deciding how well a growth process is going. But the variation around that average also should be considered. For instance, an average age at first calving of 26 months with a spread from 24 to 28 months might be better than having an average of 24 months with a spread of 18 to 30 months.

Averages also can be skewed by lag, momentum, and bias. Lag refers to time elapsed between an action being taken with the average reflecting the change, momentum refers to responsiveness of that average to recent changes, and bias reflects its deviation from a "more general" average due to exclusion or inclusion of data.

Serum protein often is used to evaluate immune passive transfer in calves. Serum IgG concentration actually is more meaningful, but it also is more time consuming and expensive to analyze.

A summary from 207 RLN calves originating from 57 different herds found that 41 percent of calves had serum protein concentrations at or

below 5.5 g/dl upon arrival. However, there were no differences in respiratory problems or scours related to serum protein. Part of this lack of response could be due to average age being about 11 days when calves arrived at RLN, real lack of cause-and-effect association, and the hydration status of the calf may have been artificially high which would have diluted serum protein concentration. While serum protein may be a good indicator of a good colostrum program, management and cleanliness (most especially of the colostrum and calf) may be more important in minimizing health problems.

Weaning strategies

There have been several studies which varied practices before, at, or after weaning. Generally, I have recommended weaning at 6 weeks and then keeping them in hutches or pens two more weeks to facilitate more starter intake, rumen development, and minimize the impact of weaning and moving calves into a group right at weaning time.

In a study at Waseca, Minn., grouping calves immediately after weaning and moving them to groups of 10 versus keeping calves in individual pens for 14 days after weaning before grouping did not result in any difference in performance at 112 days of age.

In a RLN study, calves grouped in super hutches (eight calves) at 49 days of age had greater daily gain, body weight, and respiratory cases at 56 days than calves kept in hutches for 56 days. Each treatment of calves had milk replacer reduced to one-half during the last seven days and then individually fed in hutches or trough fed in the super hutches.

In the RLN study, hutches were well-bedded with straw, and hutch size was small with no accessible outside area for calves so hutch-fed calves may have been too limited for space which may have predisposed them to respiratory cases. Authors acknowledged this in stating ". . . could be that hutch dimensions limited the environmental quality as the calf body mass increased over time. Thus, the results of the current study should be applied only to calf-rearing conditions similar to the ones described herein and should be applied to other conditions with caution."

Farms vary so much

Since there are a multitude of factors that affect calf performance around the weaning transition period (two weeks before and two weeks after weaning) such as changes in feeding programs, group sizes, ambient conditions during the year, vaccinations/dehorning/treatments, the devil is in the details as

GROUPING CALVES IMMEDIATELY after weaning and moving them to groups of 10 versus keeping calves in individual pens for 14 days after weaning before grouping did not result in any difference in performance at 112 days of age.

to how well a given protocol may work on different operations.

Another RLN study measured the impact of the first super hutch grouping of eight calves based on their previous history of respiratory incidences. When some calves with at least one previous respiratory incidence were in a group, that commingled group had a shorter time before appearance of its first respiratory incidence than a grouping of calves that had never experienced a respiratory problem. And while the latter calves (no respiratory problem) by happenstance had a lower average body weight entering the group, they had the greatest daily gain. Thus, taking into account previous respiratory incidence may minimize the incidence of overall respiratory cases.

Consistency vital

Reducing variation in performance of grouped calves/heifers can depend on feed distribution and pen composition. When the RLN total mixed ration always was fed to pens in the same direction by the feed truck, variation in daily gain got larger towards the end of the feeding route. This could be because of errors in loading the TMR truck, mixing the TMR, and feeding out the TMR so that the amount fed per group varied. The latter could be minimized by feeding out the TMR to groups receiving the same TMR in different order each day.

A recent Idaho study with a large calf operation sorted calves into four groups based on feed intake during the previous three weeks when calves were individually hutched until 56 days of age. Calves were formed into six groups: random control, 20 calves in the highest feed intake group (HH), 20 in the lowest group (LL), five calves from highest mixed with 15 calves from the lowest group (HLL), five calves from the

lowest mixed with 15 calves from the highest group (LHH), and 10 calves from highest and lowest groups (HL).

At 84 days of age, the amount of variation of final body weight was lowest for the highest previous feed intake (HH) and for lowest previous feed intake (LL), followed by control, LLH, HHL, and HL. In other words, grouping calves based on their preweaning intake improved overall performance and consistency of gains.

How big?

Other subject areas reviewed were grouping strategies and practices, seasonal and social stress effects on breeding heifers, potential for limit feeding heifers, and setting goals. This last point requires some understanding of what are realistic body weight and height measures for first-calf heifers, as well as what their mature body weight would be. Some have proposed that body weight should be 55 and 82 percent of mature body weight at breeding and first calving. Since mature body weight is not known until 5 to 6 years of age, Bach developed a model based on 1,820 RLN heifers that estimated mature body weight between 0 and 250 days with a correlation of 0.68. In other words, the equation accounted for 68 percent of the variation in predicting mature body weight.

With another data set of 650 heifers tracked into their first lactation, Bach determined that the combined effect of mature body weight and body weight at breeding revealed that the greater the mature body weight, the greater the milk yield.

The overall message is the importance of having access to or generating data from measurements in an operation. That enables us to see how best to grow calves and heifers with the ultimate goal being higher milk yield.