Weaning calves earlier saves money

High milk replacer costs have all of us looking for ways to save money. Getting calves off to a good start lets you wean them earlier.

by Coleen Jones, Jud Heinrichs, Sylvia Kehoe, and Jorge Elizondo

Latest estimates of average calf weaning age in the U.S. tell us that 70 percent of calves are weaned at 7 weeks of age or older. In addition, 25 percent of farms surveyed said they weaned calves at 9 weeks or later. Considering that calves with adequate rumen development can be physiologically ready for weaning as early as 3 weeks of age, many farms have a big opportunity to wean calves at younger ages and save money and time spent on them. Early weaning is not a new concept, but especially in times when money is tight and milk replacer costs are high, you may want to think about your current practice.

Have to develop the rumen...

First, a quick review of rumen development which is the key component of a successful early weaning program. When the calf begins to eat dry feed, especially starter, the rumen begins to supply nutrients produced by fermentation, and the population of rumen bacteria begins to grow. Fermentation of the starch component of grain produces volatile fatty acids, particularly butyrate, which stimulate growth of rumen papillae and metabolic activity in the rumen. After about three weeks of eating grain, the calf’s rumen will have enough bacteria fermenting enough feed to supply her with a substantial amount of energy. The rumen bacteria themselves also provide an important source of nutrition, microbial protein, as they are washed out of the rumen, digested, and absorbed in the small intestine. Microbial protein is very digestible and contains a favorable profile of amino acids.

From a management standpoint, we can assist this process by providing free-choice water and a quality grain mix with a coarse texture in the first few days after birth. By 3 to 4 weeks of age, the rumen can be well developed and ready for the change to a diet of solid feeds. The sooner the starter is digested by the calf, the sooner rumen development occurs. It takes about 21 days to develop the rumen papillae from the initial time that grain is fed. This development time is from when grain is first fed, bi it 2 days of age or 20 days of age. Thus, weaning calves at 3 weeks of age is recommended. However, weaning at 4 weeks of age is under good to excellent management situations. In addition, no differences were seen in calf health throughout these experiments. Rumen development observed at 5 weeks of age was similar for all calves, and no differences in body composition were detected at 8 weeks.

What about milk production?

DHA records were collected for calves from these studies and analyzed to see if weaning age affected age at calving or first-lactation milk production. Forty heifers were included in this part of the experiment, and PTA (predicted transmitting abilities) for sire and dam’s fat production were included in the statistical analysis. Regardless of age at weaning, all heifers calved at approximately the same age, 23.4 months. First lactation 305-day mature equivalent (M.E.) milk production was projected at 30,690 pounds, with no difference between treatments. Milk composition was not affected either; fat was 3.83 percent with an M.E. of 1153 pounds. Protein was 3.0 percent, and the predicted M.E. was 906 pounds.

Calves can be ready for weaning by 3 to 4 weeks of age; however, in this study the calves weaned at 3 weeks required extra attention. The extra time and labor required to get these calves eating starter suggest that waiting until 4 weeks of age would be best. Weaning as early as possible gets calves started on dry feed, saving time and money for labor and feed.

It is important to remember that early weaning cannot succeed without early rumen development. If the rumen is not prepared to handle dry feed, the calf will suffer a growth spurt for up to 3 weeks after weaning. This postweaning slump can occur at any age or weaned calf weight if the rumen is not adequately developed.

With proper rumen development, the vast majority of calves can be weaned by 4 to 5 weeks of age, but avoid making weaning decisions by age alone. Instead, use the amount of starter eaten by calves as the primary indicator of weaning time. Calves that eat 2 pounds of grain per day for three consecutive days are ready to be weaned. To use this system, you must know how much starter is fed each day. Weigh 2 pounds of grain and mark the amount on the container used to feed calves to ensure accuracy. Measuring

The authors are a research associate and professor in the Department of Animal Science at Penn State, an assistant professor at the University of Wisconsin-River Falls, and a Ph.D. student at Penn State, respectively.