feeding warm water.

As a result, if calves were maintained in a low temperature of 67°F (19°C), calves could lose 0.2 lb. of daily gain, which could result in about 850 lb. more milk in the first lactation and a combined 2,280 lb. over their first three lactations.

When trying to understand why there was a wide range of 0-29.2 lb. in daily gain before weaning in the database, the researchers found that it was mostly related to colder weather. Calves born during winter months (average outside temperature of 32°F) consumed about 1.43 Mcal per day less energy above maintenance than calves born during warmer months (average outside temperature of 67°F).

For each megacalorie of additional energy calves consumed above maintenance each day in colder weather, they produced 517 lb. more milk in the first lactation and 2,000 lb. over their first three lactations. These are astonishing results, but they are just being left on the table unless the call feeding program is adjusted for colder weather.

In southern climates, the rejoinder is that they do not have very cold weather. However, if wintertime daily temperatures average just 50°F with a daily range of 40-60°F, calves could lose 0.2 lb. of daily gain, which could result in 170 lb. less milk in the first lactation and 400 lb. less milk over the first three lactations.

I have been in northern Florida during January over the last several years, and up to 10 consecutive nights down to freezing temperatures. Also, Texas had two weeks of some of the worst cold and windy weather ever last February, which decreased daily gains by 0.4 lb. at 50°F at days of age for calves born at one ranch during those two weeks.

Cold stress is happening, but unless we measure bodyweight gains regularly, we may not “see” it in the calves. As I indicated, there are options to address this situation. The best implementable approach needs to be developed for a given operation to adjust the liquid feeding program for calves in colder weather.

While I hesitate to use “rules of thumb,” they can often be more readily understood and remembered. So, for each 10°F decrease in average daily temperature below 60°F, calves will lose about 0.2 lb. of daily gain. For younger calves, adjustments need to come from the liquid feeding program. For larger calves, that may require some additional energy through the liquid feeding program, but it also requires greater attention to fostering starter intake that, in turn, requires more attention to feeding warm water.

The Bottom Line

Take a critical look at average ambient winter temperatures in your region. It can be 60°F during the day but 40°F at night. If the average for a 24-hour period is 50°F, calves could have lost 0.2 lb. of daily gain. Now, multiply that by each 10°F interval daily decrease below 60°F, and at an average of 30°F, calves could have lost 0.6 lb. of daily gain.

It does increase costs to make these feeding adjustments, but not doing it also increases costs in the form of less daily gain and, most likely, less milk production down the road.

References

Dracy, A.E., and A.J. Kurtenbach. 1968. Temperature change within the rumen, crop area, and rectal area when liquid of various temperatures was fed to calves. J. Dairy Sci. 51:1787-1795.


