LAMBS DO BETTER ON CASEIN-BASED MILK REPLACERS OVER WHEY IN THE FIRST THREE WEEKS OF LIFE

In nature, lambs are reared by their mothers receiving numerous small feeds of milk throughout the day. However, in dairy sheep operations this is often not possible therefore lambs will need to be reared using milk replacer to help maximise the yield of milk harvested for sale. Lambs may also need to be reared using milk replacer if they have been orphaned, or their mothers are unable to meet their nutritional needs (e.g. some triplets and quadruplets) in sheep meat and dairy production systems.

The question therefore arises: which lamb milk replacer will provide the best growth, health and survival rates? The impact of whey-based milk replacers on calf performance have received attention in the literature but the production performance of lambs reared on casein-based milk replacer has not been described.

A study was conducted with 289 lambs to evaluate the effect of casein-based versus whey-based lamb milk replacers on the growth, health and survival of lambs in the first 3 weeks of rearing using an ad libitum milk feeding system at commercial scale. The results of this study were recently presented at the International Symposium on Ruminant Physiology in Leipzig, Germany.

During the 3-week rearing period, lambs reared on an ad libitum casein-based milk replacer grew faster (Figure 1), had lower mortality and antibiotic use and improved overall feed conversion efficiency than lambs reared on whey-based milk replacers

These results highlight that the casein-based milk replacer used in this study under an ad libitum milk feeding regime supported greater growth independent of birth-rank and reduced the incidence of disease in the first 3 weeks of life compared to the whey-based milk replacer. Animal performance beyond 3 weeks of age remains to be established. The differences in production performance are likely driven by the greater intake and quality/digestibility of milk proteins in the casein-based versus whey-based milk replacer.

Selection of milk replacer for lamb rearing should consider not just feed cost, but economic and welfare implications of slower growth, increased antibiotic treatment and increased mortality.

Reference: 1. McCoard SA, Ryrie J, MacDonald T, Hea SY, Khan MA, Stevens D. Growth and health of lambs artificially reared with casein- or whey-based milk replacer. International Symposium on Ruminant Physiology, 3-6 September 2019, Leipzig, Germany (poster presentation).

Figure 1. Effect of milk replacer protein source (casein-based milk replacer, CBMR; whey-based milk replacer, WBMR), birth rank (single/twin vs triplet/quad) and sex, and their interaction, on average daily gain. Data are presented as means + standard error.