

Economic Impacts of Improved Colostrum Management

As the weather changes and calf health can be challenged, a reminder of the importance of good quality colostrum is warranted. Failure of passive transfer (FPT) leads to sick and dead calves, so the initial benefits of improving colostrum feeding practices are obvious. However there are other “hidden” benefits that are often overlooked, that could significantly reduce the cost of your dairy’s heifer rearing program.

More colostrum = Increased Daily Gains

Several studies have shown a positive link between high serum IgG in calves 24hs-7 days after birth and the effects on average daily gain.

A 2011 study confirmed this and found heifers with the highest IgG level (>15g/L) reach insemination weight a full month prior to those heifers that suffered failure of passive transfer (IgG <5g/L) and 21 days prior to heifers that had partial FPT (IgG levels of 5-10g/L).¹

Reducing the age at first calving by 1 month, lowered the cost of a replacement heifer program of a 100 cow dairy by \$1400.²

More colostrum = Decreased culling rates

Feeding large volumes of colostrum also has an effect on culling rate. One study showed a 16% increase in survival of heifer calves to the end of the 2nd lactation when fed 4 L of colostrum, compared to heifers fed 2L of colostrum.³

A reduction of 1% in the milking herd culling rate could reduce replacement costs by \$1000-1500.³

More colostrum = Increased Milk Production

Very early research looking into quality of passive transfer estimated that for every unit of serum IgG above 12mg/mL (measured at 24-48 hours after colostrum feeding), there was an 8.5kg increase in milk production and a 0.24kg increase in fat production in the first lactation⁴. Much has changed since 1989, but these findings were supported in a more recent study that showed that heifer calves fed 4L of colostrum at birth produced an average of 1kg more milk per day across two lactations, compared to calves fed 2L of colostrum. In this study it meant calves being fed more colostrum, produced 1030 kgs more milk by the end of the second lactation.⁴



Conclusions

The goal of a colostrum management and feeding plan is to achieve high levels of passive transfer in your calves. Taking short cuts with your practices can cost the average operation thousands of dollars annually. 4L of high quality colostrum or colostrum replacer, given within 4-6 hours after birth is the goal. Couple this with good biosecurity, other standard calf rearing management practices and a quality transition cow program – the results will equal payback for years to come.

Talk to your veterinarian today to assess and improve your colostrum management program

¹ Furman-Fratczak K., A. Rzasa, T. Stefaniak. The influence of colostrum immunoglobulin concentration in heifer calves’ serum on their health and growth J. Dairy Sci. 2011 94: 5536–5543

² Tozer PR and Heinrichs AJ. What Affects the Costs of Raising Replacement Dairy Heifers: A Multiple-Component Analysis J. Dairy Sci. 2001; 84:1836-1844

³ Faber SN, Pas N, Faber E, McCauley TC, and Ax RL. Case study: Effects of colostrum ingestion on lactational performance. Prof. Animal Sci. 2005; 21:420-25.

⁴ DeNise SK, Robison JD, Stott GH, Armstrong DV. Effects of passive immunity on subsequent production in dairy heifers. J Dairy Sci. 1989; 7:552-4