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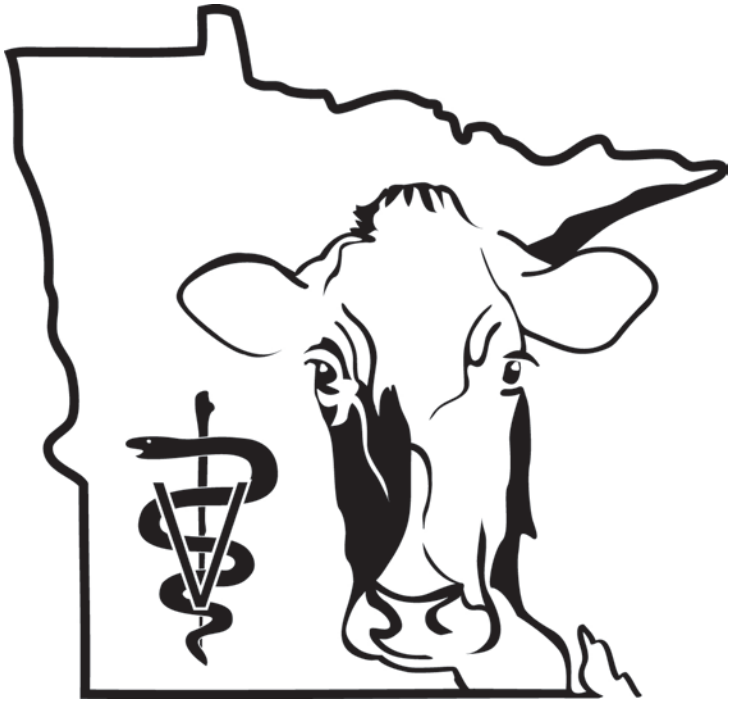

ST. PAUL, MINNESOTA
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The effect of plasma-derived colostrum replacer feeding programs for prevention of *M avium* ssp. *paratuberculosis* in dairy calves

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The objective of this study was to estimate the relative risk of *Mycobacterium avium* ssp. *paratuberculosis* (MAP) infection in calves fed a plasma-derived commercial colostrum replacer (CR) vs. bovine maternal colostrum (MC) after birth. Within 0.5 to 1 h after birth, calves were separated from their dams and systematically (every other calf) assigned to be fed MC (n = 270) or CR (n =249). Calves were followed to adulthood and tested for MAP infection using serological ELISA and bacterial fecal culture test for MAP at ~ 30, 42, and 54 months of age.

The cumulative incidence proportion of MAP infection (serological ELISA) was not significantly (p = 0. 11) different in cows fed MC (0.06) vs. CR (0.04). For cows testing positive on the fecal culture test, a marginally significant (p = 0.05) difference in incidence proportion of MAP infection was observed in cows fed MC (0.11) vs. CR (0.07). Combining serological ELISA and bacterial fecal culture test outcomes via a parallel test interpretation criterion, a significant (p = 0.03) difference in incidence proportion of MAP infection was observed in cows fed MC (0.12) vs. CR (0.07).

Cox proportional-hazards models were fit to the data to evaluate the effect of feeding MC vs.CR on the hazard of MAP infection. Because 12 herds participated in this study, frailty terms were included in the models to adjust for possible between herd variations. Cows in the CR group had a lower hazard of MAP (serological ELISA) infection vs. cows in the MC group — an effect that was not significant (HR = 0.54, p = 0.15). Similarly, the hazard of MAP (bacterial fecal culture) infection for cows in the CR group was lower than that of cows in the MC-group but this effect was not significant (HR = 0. 61, p = 0.12). When we combined the serological ELISA, and the bacterial fecal culture test outcomes via a parallel test interpretation criterion, the hazard of MAP infection in cows in CR group vs. cows in the MC group was lower, although this effect remained non-significant (HR = 0.60, p = 0.09).

Although our data did not show with 95% certainty the evidence favoring use of CR feeding programs for prevention of MAP transmission in calves, this study found that calves on a CR feeding program will have an ~ 40% reduction in risk of MAP infection compared to calves on a MC feeding program ~ 90% of time.