

# Effect of feeding 5 days of transition milk compared with milk replacer on health status, growth rates of dairy calves

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## INTRODUCTION

Extended colostrum or transition milk feeding may confer many benefits to the calf including improved serum IgG concentrations; improved health outcomes (lower respiratory and diarrhoea scores); enhanced intestinal development and increased average daily gains (kg)

## OBJECTIVE

To compare average daily gains and health score outcomes between dairy calves fed an initial feed of 4-5 litres of first milking colostrum followed by 5 days of transition milk feeding (milings 2-3) and calves fed an initial feed of 4-5 litres of first milking colostrum followed by milk replacer.

## MATERIALS AND METHODS

- ▶ 150 calves (from 2 farms) were weighed at birth, received 4-5 litres of first milking colostrum within 4-6 hours and were randomly allocated to one of two groups.
- ▶ Group 1 (FC) were fed 3- 4 litres of milk replacer twice daily until weaning. Group 2 (TM) were fed 3-4 litres twice daily of a pool of second and third milking transition milk for 5 days and were then fed milk replacer twice daily until weaning.
- ▶ All calves were health scored (Wisconsin Madison) every second day for the entire pre-weaning period.
- ▶ First feed colostrum and TM was sampled daily at point of feeding and stored frozen at -20°C for subsequent testing. Calves were blood sampled weekly.
- ▶ The IgG concentration of the colostrum and TM was measured using a digital Brix refractometer.
- ▶ Serum IgG concentration was measured directly using radial immunodiffusion (Triple J) plates.

5 days transition milk feeding reduced morbidity, mortality and increased average daily gain in dairy calves.



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## RESULTS

- ▶ Preliminary results show that calves fed TM for 5 days performed better than milk replacer fed calves with lower mean faecal ( $p=0.05$ ) and nasal scores ( $p=0.04$ ), but there was no difference in cough and eye and ear scores between the two groups.
- ▶ No differences in mean rectal temperature were observed between the two groups. Numerical differences were also observed in the weaning weights and average daily gains (ADG) between the two groups with TM calves weaned at 91.9kg with ADG of 0.76kg per calf per day and CF calves weaned at 90.9kg with ADG of 0.73kg per calf per day (Fig. 1).
- ▶ Numerical differences were observed in time to first health score ( $\geq 1$ ) for faecal (2.6 versus 2.2 days for TM and CF groups respectively) and respiratory disease events (15.8 versus 15 days for TM and CF groups respectively), but these were not statistically significant (Fig. 2).

FIGURE 1. Bar chart to show the differences in mean Wisconsin Madison scores for the entire pre-weaning period for calves allocated to extended transition milk feeding and control groups (calves were scored every second day). Asterisks indicate statistically significant differences between groups.

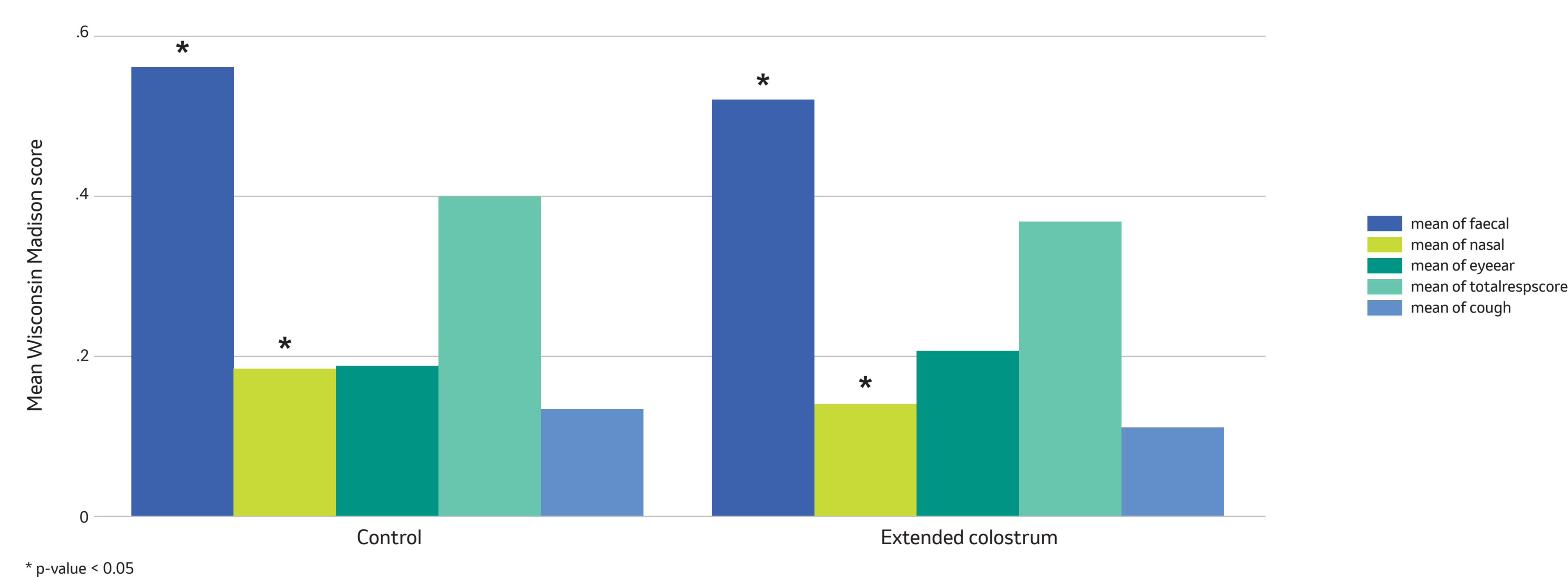
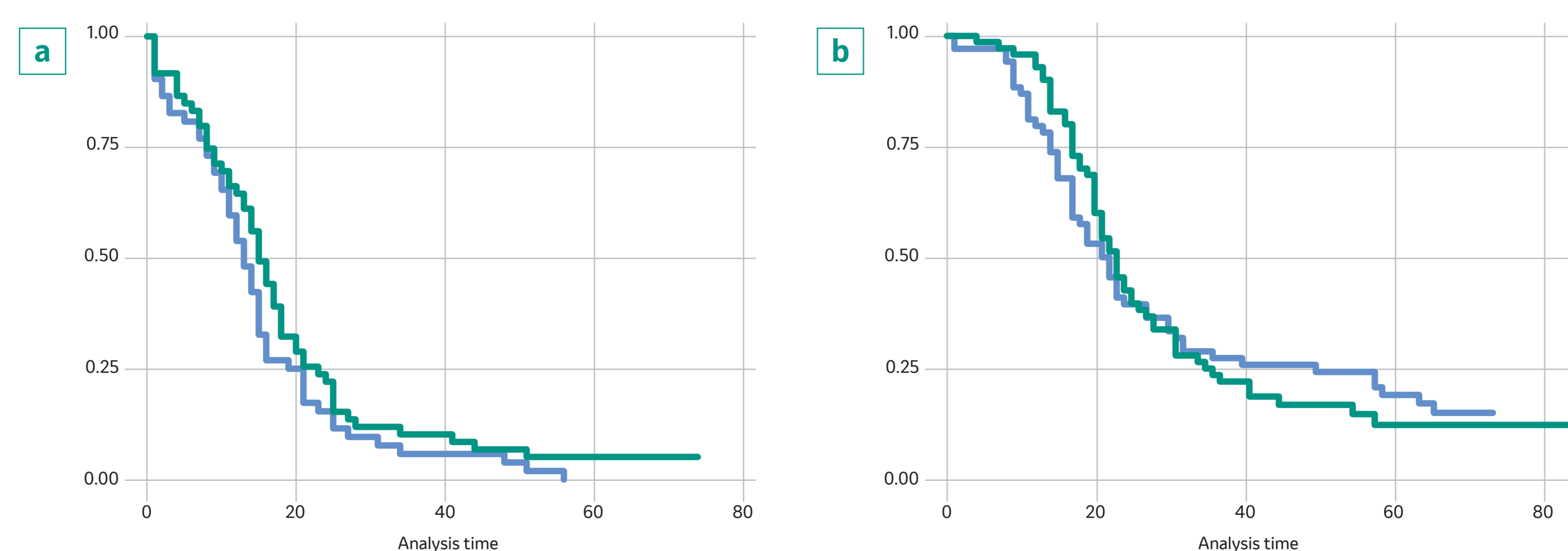


FIGURE 2. Kaplan-Meier survival curve showing time to event for a) diarrhoea score ( $\geq 2$ ) b) total respiratory score ( $\geq 2$ ) between conventionally fed (FC) and 5 days transition milk (TM) fed calves. Green line is TM group and blue line is FC group.



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