

The effect of colostrum supplementation during the first 5 days of life on calf morbidity, enteric pathogens, weight gain and immunological response.

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INTRODUCTION

Post-closure colostrum feeding is not frequently practiced on modern dairy farms. However, post-closure colostrum feeding can be beneficial for the gut health and immunity of young calves, and makes optimal use of eventual dam vaccination against calf enteric diseases.

OBJECTIVE

The objective of this study was to investigate preweaning:

- ▶ health
- ▶ performance
- ▶ immunity
- ▶ enteric pathogen shedding

in calves supplemented with colostrum from dams vaccinated against rotavirus, coronavirus and *Escherichia coli* F5 during five days after birth compared to non-supplemented calves.

MATERIALS AND METHODS

The study was run on a commercial dairy farm. New-born calves, from dams vaccinated with Bovilis® Rotavec Corona, were fed at least 3L of colostrum from their own dam in the first 24h after birth (d1).

The calves were randomly assigned into:

1. Colostrum post-closure group: Receiving additional colostrum from Bovilis® Rotavec Corona vaccinated cows mixed into the milk replacer; on d2 one liter colostrum and on d3-d5 half a liter colostrum supplement.

2. Control group: Receiving similar quantities from d2-d5 of a supplement nutritionally equivalent to colostrum, however without colostrum bioactive and immunological components.

Calves were weighed at birth, d28, and at weaning (±2m of age).

Faecal samples were taken on d7, d14, and d21 for detection of rotavirus, coronavirus, *Cryptosporidia*, *Clostridia*, *E. coli* F5 (ELISA calf side kits).

Serum samples were taken on d1, d7, d14, and d21 to determine antibody levels to bovine coronavirus, rotavirus, and *E. coli* F5.

This study indicates a trend towards lower excretion of *Cryptosporidia* and rotavirus in preweaning calves supplemented with colostrum from vaccinated dams.



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RESULTS

The study is ongoing. Here are presented results from 19 treatment calves and 21 control calves.

Passive transfer of immunity in all calves was adequate to good and similar for both groups.

No significant difference in average daily weight gains detected in this early analysis.

All faecal samples were negative for BCoV and *E.coli* F5. On d14 lower percentage of calves from colostrum post-closure group were positive for rotavirus and *Cryptosporidia*.

FIGURE 1. Trends in Serum IgG and serum *E. coli* F5 antibodies in calves.

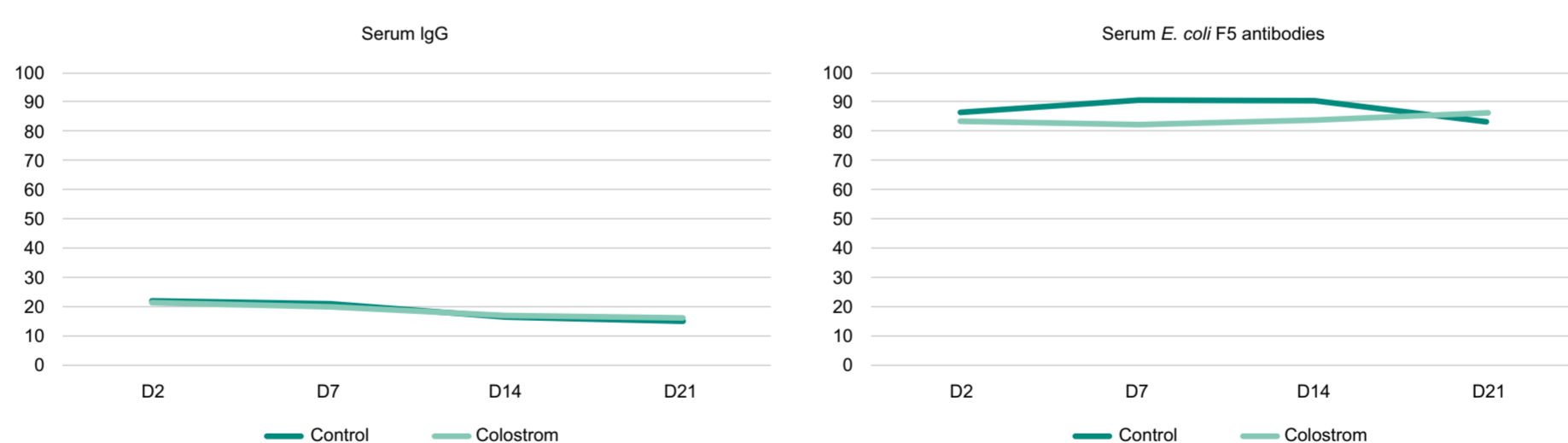
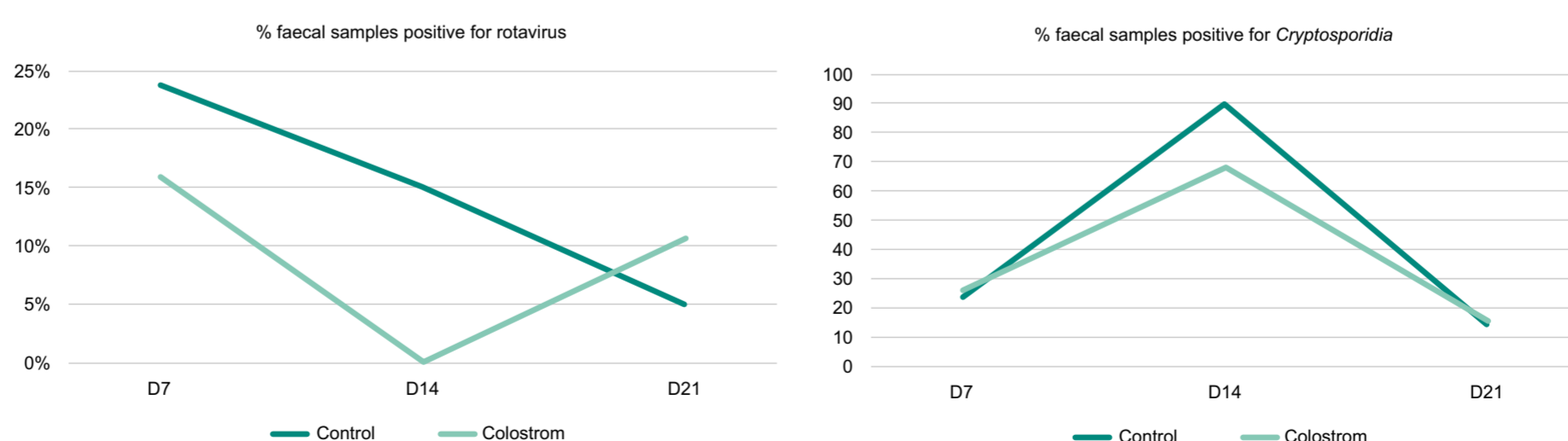


FIGURE 2. Enteric pathogens found in faecal samples of the calves.



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Colostrum group = Colostrum supplementation post-closure until d5.
Control group = Nutritional equivalent placebo supplementation.