

IMMUNOLOGICAL QUALITY OF COLOSTRUM AND SPECIFIC ANTIBODIES AGAINST ENTEROPATHOGENS IN COLOSTRUM AND TRANSITION MILK OF GIROLANDO CALF

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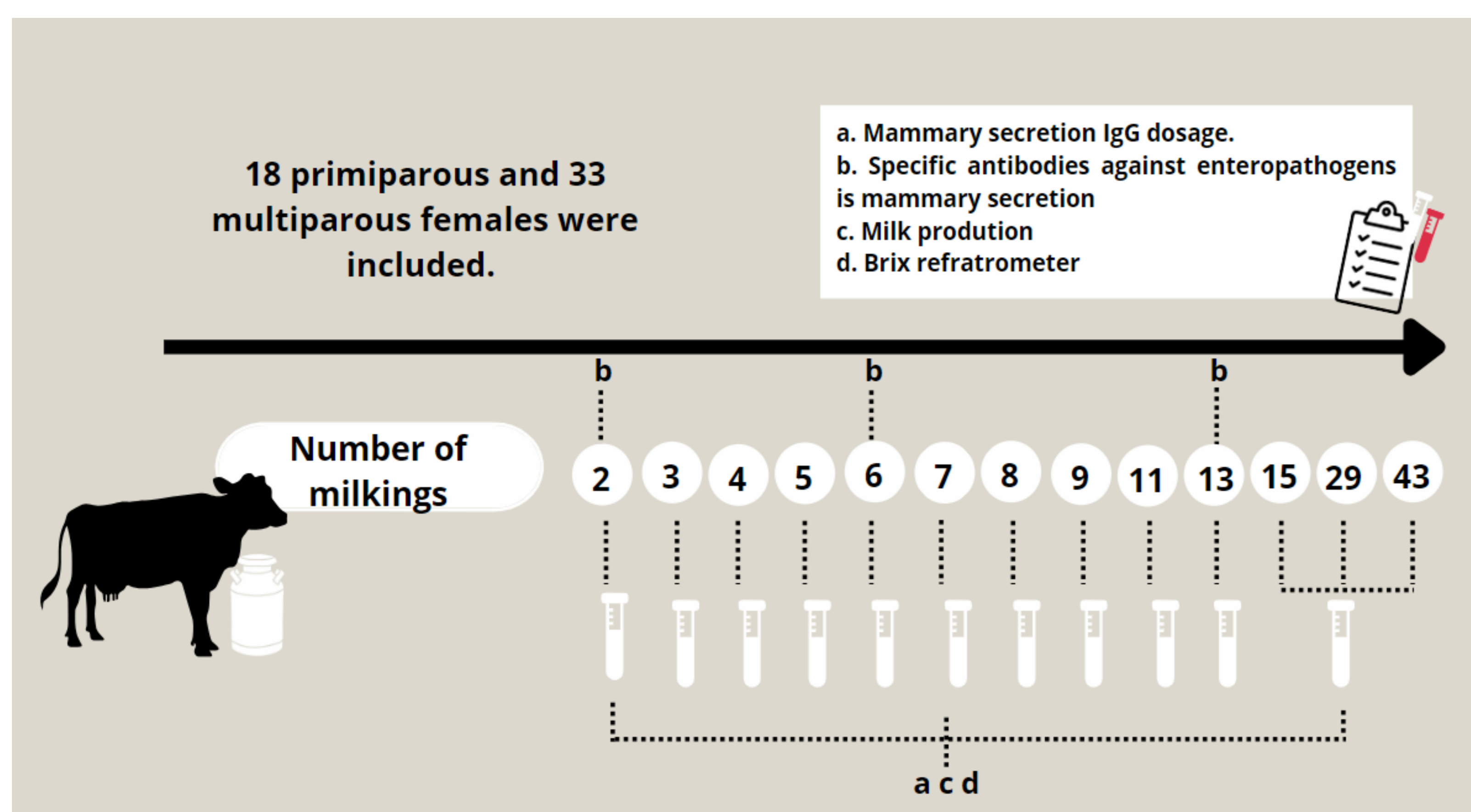
INTRODUCTION

The management of colostrum and passive transfer of IgG is essential for enhancing the innate immune response against enteropathogens in bovine neonates. However, the specificities among beef, dairy, and dual-purpose breeds raised in tropical countries have been scarcely explored in the literature.

OBJECTIVE

This research aimed to evaluate the dynamics of total IgG and specific antibodies against enteropathogens from the 1st to the 43rd milking postpartum in Girolando cows, using on-farm methodologies and sandwich ELISA (total IgG), competition ELISA (Rotavirus/Coronavirus), and blocking ELISA (*E. coli* K99 and *Clostridium perfringens* toxins - CP).

MATERIAL AND METHODS



RESULTS AND DISCUSSION

Only 5 exhibited colostrum with low immunological quality (IgG \leq 50g/L), with 4 being primiparous and only 1 multiparous.

Table 1 .Volume and colostrum immunological quality from primiparous and multiparous Holstein x Gir crossbred dams.

| Variable | Primiparous (n= 18) | Multiparous (n= 33) | P value |
|-------------------------------------|------------------------|------------------------|---------|
| | Mean \pm Std Error | | |
| Milk Volume (mL) | 3.250 \pm 1.38 | 2.440 \pm 0.36 | 0.65 |
| Transition milk (kg) | 4.19 \pm 0.33 | 5.71 \pm 3.29 | 0.06 |
| Whole (kg) | 6.63 \pm 0.35 | 9.96 \pm 0.22 | 0.01 |
| ELISA IgG (ng/ml) | 110.06 \pm 9.56 | 111.76 \pm 8.66 | 0.76 |
| Colostrometer (mg/ml) | 72.85 \pm 14.59 | 92.50 \pm 9.05 | 0.15 |
| Brix (%) | 25.44 \pm 1.80 | 27.68 \pm 0.84 | 0.14 |
| Colostro balls (g/cm ³) | 1046.67 \pm 7.14 | 1062.75 \pm 3.67 | 0.13 |
| IgG mass (mg/dL) | 144 \pm 32.40 | 201 \pm 67.03 | 0.02* |

The effect of parity was detected for the concentration of specific antibodies (ACs) against *E.coli* K99 in the blood serum, being higher in multiparous cows. Effect of time was detected for the volume of transition milk (2nd – 6th milking) and whole milk (7th – 43rd milking), % Brix, total IgG (mg/mL), and specific IgG against enteropathogens in mammary secretion. In the serum, the effect of time was detected for specific antibodies against Coronavirus, Rotavirus, CP beta, and *E.coli* K99. An interaction between parity*time was detected for Brix (%) and inhibition (%) of specific antibodies against CP alpha and Coronavirus.

CONCLUSION

This study determined physiological modifications of total IgG and specific antibodies against enteropathogens, which were more pronounced in mammary secretion than serum, between the 1st and 43rd postpartum milkings in Girolando cows. These findings provide a basis for specific applied research projects for the breed, genetically adapted for tropical and subtropical countries like Brazil

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