

THE BACTERIAL PROFILE OF COLOSTRUM, TRANSITION MILK, AND RAW MILK FROM GIROLANDO COWS

Karen Nascimento da Silva¹, Raquel Sousa de Marques¹, Ingrid Milena Ostos Daza², Melissa Lobato Defensor¹, Carlos Eduardo Fidelis¹, Marcos Veiga dos Santos¹, Viviani Gomes¹.

¹Faculdade de Medicina Veterinária e Zootecnia da Universidade de São Paulo, São Paulo, Brasil.

²Universidade Agrária da Colômbia, Bogotá, Colômbia
Karen.n.silva@usp.br

INTRODUCTION

The mammary gland undergoes significant physiological adaptations to meet the demands of colostrumogenesis and lactogenesis, crucial processes for milk production. However, these adaptations also contribute to the high incidence of mammary infections at the onset of subsequent lactation. This phenomenon is particularly relevant in the milk production of Girolando cows, as these animals exhibit notable sensitivity to mammary disorders during the early stages of lactation.

OBJECTIVE

The objective of this study was to evaluate the bacterial composition of mammary secretion and its changes in the first 21 days postpartum in Girolando cows.

MATERIAL AND METHODS

This research was approved by CEUA No. 2551140722 from FMVZ-USP. The study was conducted on a dairy farm with an average production of 25kg per cow per day, located in Minas Gerais, Brazil, using 50 Girolando cows with an average age of 3 years. Mammary secretion was evaluated immediately postpartum (1st milking) and at days 7, 14, and 21 after the morning milking. Samples were collected for the isolation of aerobic bacteria and identification using *MALDI-ToF*.

A descriptive analysis was then performed among the evaluated time points to identify the frequencies (%) and absolute number (n) of isolated bacteria from colostrum, transition milk, and milk. Subsequently, the values were subjected to the Chi-square test to obtain significant differences between time points ($P \leq 0.05$).

RESULTS AND DISCUSSION

Principal Bacterial Agents Identified by MALDI-TOF: *Staphylococcus aureus*, Non-aureus *Staphylococcus*, *Streptococcus* spp., *Corynebacterium* spp., *Salmonella typhimurium*, *Escherichia coli*, *Shigella* spp., *Klebsiella* spp.

Table 1: Frequency of contamination data for each bacterial genus at different collection times (T0, T7, T14, and T21).

Bacterial Agents	T0	T7	T14	T21
<i>Streptococcus</i> spp.	24%	16%	7%	38%
<i>Corynebacterium</i> spp.	8%	10%	30%	128%
<i>Escherichia coli</i>	2%	2%	2%	14%
<i>Shigella</i> spp.	6%	2%	2%	20%
<i>Staphylococcus</i> não aureus	50%	28%	28%	38%

CONCLUSION

The proportion of bacterial genera in mammary secretion showed variations in the first 21 days postpartum, which may modulate the predominance of infectious agents causing mastitis postpartum, especially during periods of adaptation and modifications in systemic immune response and mammary gland.

AGRADECIMENTOS:

