

Title: ANALYSIS OF GENETICS DIVERSITY OF *Staphylococcus* spp. FROM MILK PRODUCTION LINE BY PULSED FIELD GEL ELECTROPHORESIS.

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Abstract:

Staphylococcus spp. is one of the most important causes of bovine subclinical mastitis and responsible for severe financial losses for farmers worldwide. Although some studies have shown it is not possible to eradicate intramammary infections caused by this microorganism, adoption of control practices reduces the incidence and prevalent to acceptable levels. Among factors contributing to the spread of microorganisms in the herd, the human element is the most important. Man hosts *S. aureus* in their nasal and pharyngeal mucosas, hands and skin, and can transmit these microorganisms to animals, utensils and milking equipment. Molecular typing is a powerful tool that can provide information about genetic characteristics of microorganism responsible for mastitis. Development of a rational and effective strategy based on genetic variability and directed against microorganism that commonly cause disease is important for control of mastitis. Pulsed field gel electrophoresis (PFGE) has been considered one of the most reliable and reproducible typing procedures, allowing for the detection of a high degree of DNA polymorphism. The aim of this study was to investigate the clonal relationship among *Staphylococcus* spp. by the technique of PFGE. The data obtained enable the knowledge of the genetic profiles allowing the understanding of diversity of clones in order to improve control programs. Eight dairy farms located in the state of Rio de Janeiro were selected for the study. A total of 36 strains of *Staphylococcus* spp. were typed by PFGE. The strains were collected from bovine milk and from the milk production line. Nine representative profiles were generated among the bovine milk isolates, while only three profiles were generated among the isolates collected from the milk production line. Results showed a genetic diversity among the isolates and the absence of a predominant profile. Additionally, it was observed that several isolates from bovine milk production line presented a high degree of similarity. The analysis showed a greater genetic distance among the *Staphylococcus* spp. isolated from bovine milk compared with the isolates collected from the milk production line. These results indicate that the study and monitoring of pathogens isolates from bovine milk as the milk production line is essential for the development of new measures to control bovine mastitis.

Keywords: bovine mastitis, productive line, PFGE (Pulsed field gel electrophoresis)

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