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SUMMARY OF THESIS*

SILVEIRA-FILHO, Vladimir da Mota - **Tipagem molecular de** *Staphylococcus aureus* **isolados de casos de mastite bovina no Estado de Pernambuco.** Recife, 2007. (Dissertação de Mestrado - Centro de Ciências Biológicas da Universidade Federal de Pernambuco).

MOLECULAR TYPING OF *Staphylococcus aureus* ISOLATED FROM BOVINE MASTITIS CASES IN PERNAMBUCO STATE, BRAZIL

Staphylococcus aureus is the most common etiologic agent of contagious bovine mastitis worldwide. In this study we assessed the genetic diversity of 94 isolates of *S. aureus* obtained from mastitic milk, raw cheese and milking appliances from 12 dairy herds from the State of Pernambuco (Brazil). The isolates were analyzed by the polymorphism of the 3'-end region of the gene of the coagulase (PCR/RFLP-*coa*) and the 16S-23S intergenic spacer region of ribosomal operon (ribotyping-PCR), associated to the analysis of macrorestriction fragments of genomic DNA digested by *Sma*I, by pulsed field gel electrophoresis (PFGE). PCR/RFLP-*coa* distinguished two coagulotypes: Coa1 (~720 bp) grouping 62.5% of the samples, and Coa2 (~950 bp) with 37.2% of the samples. The Coa1 was subtyped in Coa1A (59.6%) and Coa1B (3.2%) after restriction with *Alu*I and *Hha*I. Ribotyping-PCR distinguished ten ribotypes named R1 to R10. All the isolates of the coagulotypes Coa1A and Coa1B (62.77% of the samples) fitted into the ribotypes R1 to R6 and the isolates of the coagulotype Coa2 (37.23%) into the ribotypes R7 to R10. PFGE identified ten profiles of macrorestriction (A to J) with 80% of similarity among the samples. The discriminatory indices of the three methods were respectively 0.510, 0.741 and 0.836. Twenty five genotypic profiles ($G_I - G_{XXV}$) were obtained by association of these results (discriminatory index = 0.910). The G_{III} was the predominant genotype found in three herds (20.21% of the samples). PFGE was more discriminatory than the PCR-based methods. However, ribotyping-PCR is faster, less expensive and highly reproducible and could be useful for epidemiological surveys. The presence of *S. aureus* in samples of mastitic milk, raw cheese and milking appliances with the same genotypic profile points out the risk of transmission of this pathogen to the consumers and to non-infected cows. The identification of clones prevalent in a herd or a region can be used as basis for the development of specific measures for the staphylococcal mastitis control.

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