

Persistence of *Staphylococcus aureus* in subclinical mastitis in a bovine herd.

<sup>1</sup>Rossi, B. F.; <sup>1</sup>Bonsaglia, E. C. R.; <sup>1</sup>Castilho I. G.; <sup>1</sup>Dantas, S. T. A.; <sup>2</sup>Pantoja, J. C. F.; <sup>2</sup>Salina, A.; <sup>2</sup>Langoni, H; <sup>1</sup>Rall, V. L. M

<sup>1</sup>Department of Microbiology and Immunology, IBB/UNESP – Distrito de Rubião Junior S/N,18618-970 - Botucatu, SP.

<sup>2</sup>Department of Hygiene Veterinary and Public Health, FMVZ/UNESP– Distrito de Rubião Junior S/N,18618-970 - Botucatu, SP.

Brazil is the fourth place in the world ranking, with estimated production of 34 billion liters of milk, in 2015. Mastitis is a disease of major economic importance in dairy industry worldwide representing a constant challenge for producers. It is an inflammation in mammary glands, which may occur in the subclinical form, where cows do not show any visible signs of infections on the udder or in the milk, increasing the spread of the disease. Among the pathogens, *Staphylococcus aureus* is responsible for most chronic cases and low rates of cure of the disease. Therefore, the aim of the study was evaluate the persistence of that pathogen in cows with subclinical mastitis on a single farm for 12 months. A total of 665 milk samples were collected from cows with subclinical mastitis, confirmed through of California Mastitis Test (CMT) and spread on Baird Parker agar (48h/35°C) for isolation and identification of colonies. Molecular confirmation was performed by polymerase chain reaction (PCR) for amplification of the species-specific *staphylococcal nuclease gene (nuc)*, followed of extraction of DNA using the Minispin kit. *Pulsed Field Gel Electrophoresis (PFGE)* was performed according to the Pulsenet, with the restriction enzyme SmaI and run in the CHEF Mapper, over to 21 hours. The persistence of *S. aureus* was observed in 24 animals. In one of them, the microorganism was isolated for 9 consecutive months, demonstrating its ability to persist in the animal, due to several factors of virulence. PFGE of the strains isolated during that time belonged same clone, with 100% similarity. In other 5 strains isolated in the same month in different animals, 4 different pattern profiles and a group of two strains with 85.7% of similarity were observed, indicating the presence of different clones in the same herd, as well as, the same clone infecting different animals. Animals with subclinical mastitis caused by *S. aureus* tend to become chronic due to the low cure rate of the disease. Therefore preventive measures should be taken to avoid contamination between animals and staphylococcal intoxications, by the presence of these bacteria in milk.

*Key- words:* *S. aureus*, mastitis, PFGE, dairy herd.