

**TITLE:** ACTION OF DISINFECTANTS USED IN MILKING ON BIOFILMS IN THE FORMATION AND CONSOLIDATION OF STAPHYLOCOCCUS AUREUS OBTAINED FROM THE MILK OF COWS WITH SUBCLINICAL MASTITIS.

**AUTHORS:** SOARES, K.D.A.; VIANA, C.; CAMPOS, M.E.M.; SOARES, C.E.A.; LIMA, A. dos A.; SILVA, T. M. S. S.; ALVES, E.S. do A.; MELO, N.S.da S.; MEDEIROS, E.S.de; NERO, L.A.

**INSTITUTION:** UNIVERSIDADE FEDERAL RURAL DE PERNAMBUCO (Rua Dom Manuel de Medeiros, s/n, Dois Irmãos - CEP: 52171-900 - Recife/PE – BR); UNIVERSIDADE FEDERAL DE ALAGOAS (Fazenda São Luiz, s/n, CEP: 57.00-000 Viçosa-AL – BR); UNIVERSIDADE FEDERAL DE VIÇOSA (Departamento de Medicina Veterinária Avenida PH Rolfs, s/nº Campus Universitário 36571.000 – Viçosa – MG – BR).

Microorganisms frequently present in the milking environment such as *Staphylococcus aureus* pose risks to the health of the herd by the ability to cause mastitis. These agents have the ability to adhere to the roof and form biofilms, which is responsible for the survival and often the resistance to the action of disinfectants and environmental conditions. The objective of this study was to evaluate the action of disinfectants used in milking on biofilms in the formation and consolidation of *Staphylococcus aureus* obtained from the milk of cows with subclinical mastitis. *Staphylococcus* spp. were selected and characterized for the biochemical profile and presence of the femA gene for *S. aureus* identification. The action of two disinfectants used in pre and post dipping based on chlorhexidine (2%) and lactic acid (2%) on biofilms in formation and consolidated from 86 isolated strains of *S. aureus* isolated from cases of subclinical mastitis, which were initially classified phenotypically into strong and moderate biofilm producers. It was observed an excellent reduction rate for biofilm in formation, in this context lactic acid presented better results, with 100% reduction. For the consolidated biofilm the best percentage of action was cloroxidine with 43% reduction. It is concluded with this study that the products tested presented a high reduction in the adhesion rate of all the isolates. However, action on consolidated biofilms was more significant only for the clodexidine-based product. It is noticed the necessity of the elaboration and use of disinfectants that act in the isolated microorganisms as well as in biofilms. In addition, there is a need for more rigorous programs in the management of milking to control mastitis and to prevent the adhesion and formation of biofilms by *Staphylococcus aureus*.

**Keywords:** bacterial biofilms, disinfectants, accession, consolidated biofilm.