

TITLE: PROFILE OF ANTIBIOTIC RESISTANCE AND DETECTION OF *mecA* AND *blaZ* RESISTANCE GENES IN *staphylococcus aureus* AND *staphylococcus sp.* ISOLATED FROM ENVIRONMENT MILKING OF FARMS IN THE INTERIOR OF STATES PERNAMBUCO AND BAHIA.

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ABSTRACT:

Mastitis caused by *Staphylococcus sp.* are a recurrent problem in dairy cattle. Infections caused by this genus are becoming more difficult to treat, due to the virulence mechanisms of this bacterium, such as resistance to antibiotics that are indiscriminately used by the producers. The strains commonly isolated in cases of mastitis are *Staphylococcus* resistant to beta-lactams antibiotics. These mechanisms of resistance are controlled by two genes, responsible for encoding the penicillinase which cleaves the beta-lactams class of penicillins and *mecA* gene responsible for encoding a penicillin binding protein (PBP), which acts on the cell wall of bacteria, altering them in such a way that the beta-lactams do not find receptors to bind in the bacterium. This study aimed to verify the resistance profile to antibiotics and the presence of the *mecA* and *blaZ* genes isolated from the milking environment samples, as floor, milking machines and hands of the milker. Samples were collected with sterile swabs from 12 farms in the states of Bahia and Pernambuco for the isolation of *Staphylococcus*. 20 *Staphylococcus aureus*, 1 positive-coagulase *Staphylococcus* and 1 negative-coagulase *Staphylococcus* were identified. These isolates were submitted to the Muller-Hinton agar antimicrobial diffusion susceptibility test. For the 11 antibiotics used, the bacteria showed sensitivity to six, among them: Ampicillin, Norfloxacin, Enrofloxacin, Azithromycin, Tetracycline and Cephalotin, while the other 5 isolates were resistant to Amoxiline, Oxacillin, Penicillin G and Nalxyic Acid. These isolates were submitted to a DNA extraction method, and a PCR (Polymerase Chain Reaction) was performed for the detection of resistance genes to antibiotics, *mecA* and *blaZ*. For the *blaZ* gene, only 1 isolate was considered positive, in turn, 9 isolates showed positive results for the *mecA* gene and for the other isolates, there was no amplification for both genes. In view of these data, it was observed that the bacteria present in the milking environment present the characteristic of resistance to antibiotics, a fact that represents a serious public health problem, since these bacteria can be disseminated in milk or in the environment due to inadequate sanitary management, and can contaminate healthy animals and men.

KEYWORDS: genes, *Staphylococcus aureus*, surface, resistance

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