

**TITLE:** ANTIMICROBIAL RESISTANCE OF *Staphylococcus aureus* ISOLATED FROM CASES OF SUBCLINICAL BOVINE MASTITIS IN DAIRY FARMS IN THE SOUTH AND NORTHEAST REGIONS OF RIO GRANDE DO SUL.

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**ABSTRACT:**

*Staphylococcus aureus* is one of the main agents that causes bovine mastitis, with isolation rates in the herds varying between 8.3% and 49.2%. In this sense, bacterial resistance and mechanisms of antimicrobial resistance have been described for many products used in the routine of the veterinary clinic, making difficult the milk production and the control of the disease. Thus, this study aimed to identify the resistance of microorganisms identified as *S. aureus* to antibiotics commonly used in the dairy production. Seventy-seven *S. aureus* isolates were subjected to antimicrobial susceptibility tests on Mueller Hinton agar supplemented with different antibiotics at their breakpoint concentrations: ampicillin (66 µg/mL), ceftiofur (60 µg/mL), tetracycline (160 µg/mL), lincomycin (38 µg/mL), tylosin (300 µg/mL), oxacillin (512 µg/mL), vancomycin (32 µg/mL), ciprofloxacin (64 µg/mL), erythromycin (512 µg/mL) and gentamicin (512 µg/mL). Plates were incubated at 37 °C for 18 h, and the cultures that presented colonies growth in the inoculated spot were considered resistant for the tested antibiotic. Based on obtained results, 70 (91.0%) isolates were characterized as multidrug resistant. Resistance to each antibiotic was: 39 (55%) for ampicillin, 76 (99%) for ceftiofur, 56 (73%) for tetracycline, 53 (69%) for lincomycin, 53 (69%) for tylosin, 42 (55%) for oxacillin, 62 (67%) for vancomycin, 70 (91%) for ciprofloxacin, 56 (73%) for erythromycin and 1 (1%) for gentamicin. Gentamicin was the only antimicrobial effective against almost all isolates. In contrast, ceftiofur and ciprofloxacin showed resistance to almost all isolates. Almost 50% of the isolates were resistant to ampicillin and oxacillin; however, after gentamicin they were the most effective active antibiotics. It can be concluded that *S. aureus* was resistant and multiresistant to almost all the tested antibiotics.

**Keywords:** Active principles, breakpoint, multiresistance.

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