TITLE: THE ANTIMICROBIAL RESISTANCE PROFILE OF *Salmonella* spp. ISOLATED FROM BEEF IN MATO GROSSO, BRAZIL

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ABSTRACT:

Salmonella spp. is a pathogen that causes salmonellosis, a disease transmitted mainly by the consumption of raw or undercooked beef. Currently, increases in the incidence of antibiotic-resistante *Salmonella* spp. strains has occurred, isolated from animals or their products, which may make it difficult to treat the disease when caused by multi-drug resistant strains. In this study, we aimed to determine the antimicrobial resistance profile of *Salmonella* spp. isolated from beef produced in the state of Mato Grosso, Brazil. A total of 107 *in natura* refrigerated and vacuum packed beef samples were submitted to bacteriological analysis, and 6 *Salmonella* spp. strains were isolated, which were then evaluated for antimicrobial susceptibility by the agar diffusion antibiogram technique. Twenty antimicrobial agents widely used in human and veterinary clinic (Ampicillin - AMP, Cefoxitin - CFO, Ceftiofur - CTF, Cefepime - CPM, Aztreonam - ATM, Imipenem - IPM, Gentamycin - GEN, Erythromycin - ERI, Azithromycin - AZI, Chloramphenicol - CLO, Florfenicol - FLF, Ác. Nalidixic - NAL, Ciprofloxacin - CIP, Enrofloxacin - ENO, Rifampicin - RIF, Sulfonamide - SUL, Trimetropime - TRI, Nitrofurantoin - NIT, Tetracycline - TET, Cotrimoxazol - COT) were evaluated. The growth inhibition zone diameters were interpreted according to the Clinical and Laboratory Standards Institute (CLSI). All 6 strains (100%) presented MDR, i.e., demonstrated resistance to at least four antibiotics, indicating higher resistance rates to 10 antimicrobials: AMP, SUL, FLF, CTF, RIF, CLO, TRI, CFO, ATM, NIT. The antimicrobial agents NAL, ERI, SUT, AZI and CIP showed intermediate resistance rates, and the isolates presented greater sensitivity only to GEN, TET and IPM. The MDR profile of *Salmonella* spp. found in strains present in beef produced in the state of Mato Grosso evidence possible difficulties in the treatment of salmonellosis transmitted by beef consumption and points to the urgent need for stricter control over the indiscriminate use of antibiotics in the treatment of both human and veterinary infections.

Keywords: Antibiotics, Salmonellosis, multi drug resistant (MDR) strains

Development Agency: Fundação de Apoio a Pesquisa do Estado de Mato Grosso (FAPEMAT), Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES)