TITLE: OCCURRENCE AND ANTIMICROBIAL RESISTANCE OF *Escherichia coli* Shigatoxigenic IN BEEF PRODUCED IN MATO GROSSO, BRAZIL.

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ABSTRACT

The *Escherichia coli* Shigatoxin-producing (STEC) is a group of pathogens of great importance to public health due to the presence of two immunologically distinct toxins, called Stx1 and Stx2 with cytotoxic capacity, and have multiple resistance capacity due to the ease of *E. coli* in acquire conjugative plasmids carrying the resistance gene. In this context, we aim to estimate the prevalence and to evaluate the antimicrobial resistance profile of *E. coli* STEC in fresh bovine meat produced in Mato Grosso, Brazil. Sampling was of 107 beef samples produced by 13 different slaughterhouses, the bacteriological analyzes were following the recommendation of the FDA (2011), with enrichment in MacConkey sorbitol and tellurium agar, trypticase soy agar and eosin methylene blue agar. The isolates were tested by molecular analysis using the primers: LP30, LP31, LP43, LP44, PT-2, PT-3, AE22, AE20-2, MFS1Fb and MFS1R described by the FDA with application the duplex and triplex-PCR. The positive isolates were tested for antimicrobial resistance using diffusion disks for the following antibiotics: ampicillin (10 μg), florfenicol (30 μg), imipenem (10 μg), cefepime (30 μg), tetracycline (30 μg), cotrimoxazole 25 μg), sulfonamides (300 μg), gentamicin (10 μg), rifampicin (5 μg), azithromycin (15 μg), erythromycin (15 μg), ceftiofur (30 μg), nitrofurantuin (300 μg), trimetropine (5 μg), Aztreonam (30 μg), enrofloxaxin (5 μg), cyprofloxaxin (5 μg), chloramphenicol (30 μg), nalidixic acid (30 μg). The prevalence of *E. coli* STEC in beef was 4.67% (5/107), and all 5 isolates showed the *stx2* gene. All strains showed resistance to ampicillin, rifampicin and erythromycin and all isolates were sensitive to the antibiotics Ceftiofur and Cefepima, enrofloxaxin, Imipenem, Gentamicina, Tetracyclina, Clotrimoxazol, Trimetropima, Aztreonam, Enrofloxaxina and Ciprofloxaxina. The index measuring the ratio of antibiotic tested to the amount of resistant antibiotic ranged from 0.25 (5/20) to 0.40 (8/20) and all isolates showed multiple resistance to different classes of antibiotics. The presence of the pathogen can generate risks to public health, restrict international transactions and bring economic losses to the slaughterhouses, and strains resistant to antimicrobials make it difficult to treat the infection.

Keywords: gene ***s****tx 1* e *stx2*, colibacilosis, Biology Molecular, Food microbiology.

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