

Title: ANTIBIOTIC SUSCEPTIBILITY PROFILE OF GRAM-NEGATIVE BACILLI ISOLATED FROM BRAZILIAN FARMHOUSE CHEESE AND SALAMI

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ABSTRACT:

Gram-negative bacilli are responsible to contaminate the water and human foods. Thus, they can cause different type of infections and intoxications when ingested, mainly by old-aged people and immune compromised patients. Antibiotics have been used at agro business combating pathogens in livestock, and when it is associated to animal growth promotion can increase the number of resistant microorganisms on this kind of business, so, it is important to evaluate the resistance to antimicrobial agents. The aim of this study was to evaluate the presence of these microorganisms in farmhouse cheese and salami and to determine the antibiotic susceptibility profile. In this study, 45 samples were collected in ten Brazilian capitals, covering the five geographic regions, since February to May 2013. Gram-negative bacilli were isolated in MacConkey agar, Chromogenic agar for *Escherichia coli* and coliforms, and Chromogenic agar for *Salmonella*, then phenotypically identified by Bac tray®. In order to determine antibiotic susceptibility profile it was employed the Kirby-Bauer method. We obtained 166 Gram-negative bacilli isolates including 95.2% Enterobacteriaceae and 4.8% non-fermenters bacilli. Among 158 Enterobacteriaceae isolates, *E. coli* was the most frequent (36.8%), followed by *Klebsiella* spp (17.7%), *Proteus* spp (13.9%), *Hafnia alvei* (11.4%), *Enterobacter* spp (8.9%), *Salmonella* spp (4.4%), *Citrobacter* spp and *Serratia* spp (2.5%), *Morganella* spp (1.9%). All isolates of *Salmonella* spp showed resistance to nalidixic acid, 71.4% to ampicillin, 42.9% to ceftriaxone and sulfamethoxazole/thrimetoprim, and none for ciprofloxacin. Among the *E. coli*, the incidence of resistance to sulfamethoxazole/trimethoprim was 13.8%, 12.1% to cephalotin, 10.3% to ampicillin, 6.9% to cefuroxime, 5.2% to amoxicillin/clavulanic acid, and none to cefoxitin gentamicin, ciprofloxacin, ampicillin, meropenem, ceftazidime and cefepime. Resistance to two or more antibiotic were observed in 7 out of 58 *E. coli* isolates. Bacterial contamination in farmhouse salami and cheese can occur due the poor sanitary conditions. The use of raw material, from animals treated with antibiotics, can contribute for increasing antibiotic resistant microorganisms.

KEY WORDS: antibiotic susceptibility; Gram-negative bacilli; farmhouse foods