

Abstract

In this study, we investigated the level of microbial contamination of Enterobacteriaceae and their antibiotic resistance in Sistan and Baluchestan province. 104 samples of mushroom, poultry, meat and simple Samosa (Indian fast food) samples from Sistan and Baluchestan province for 7 times sampled and transferred to the Zabol University School of Veterinary Medicine, unit of Food Quality Control Laboratory, to avoid secondary contamination in sterile conditions alongside the ice. 25 gram samples were transferred to 225 mm lactose broth and then, in the EMB medium for *Escherichia coli* and in SS (Salmonella-Shigella) agar, bismuth sulfite agar and brilliant green agar medium for Salmonella were cultured on a plate. Moreover, for confirmatory tests of *Escherichia coli*, from green metal colonies transferred to culture media SEM, TSI, MR-VP and Simon Citrate and for confirmatory tests of Salmonella, black colonies grown in SS agar, brilliant green agar and bismuth and sulfite agar were cultured on LIA, TSI culture medium. Finally, the susceptibility of the bacteria to the antibiotics such as Ampicillin (AM), Amikacin (AN), Amipenem (LMP), Ciprofloxacin (CP), Amoxiclav (AMC), Gentamicin (GM), Nalidixic acid (NA), Ceftriaxone (CRO), Tetracycline (TE) and Sulfamethoxazole (SXT) was assessed. Friedman test was used to compare the susceptibility of bacteria to different antibiotics. SPSS software was used for data analysis. The significance level (or α level) for this study is chosen and set to $P < 0.05$. The results of this study showed that 45 cases or 43.3% and 13 cases or 12.5% were infected respectively with Salmonella and *Escherichia coli*. Antibiogram results showed that the highest susceptibility to Salmonella was related to Nalidixic acid (57%), Gentamicin (43%) and Sulfamethoxazole and ceftriaxone (39%) and the most resistant were ampicillin with 77%, Ampenem 59% and Ciprofloxacin 41%. In the case of *Escherichia coli*, the highest sensitivity was for nalidixic acid (62%), ciprofloxacin, amoxiclav and sulfamethoxazole (46%), and the most resistant cases were for Ampenem (77%), ampicillin (46%) and tetracycline (38%). According to the study, the most likely cause of contamination was the use of raw materials with high microbial load, as well as the lack of proper heating and personal hygiene in the preparation of samosa and, more importantly, secondary contamination.

Keywords: Samosa, *Escherichia coli*, Salmonella, Antibiotic resistance, Sistan and Baluchistan



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