



University of Zabol
Graduate Management
Faculty of Veterinary Medicine
Department of Health and Food Quality control

Title:

**Evaluation of Enterobacteriaceae contamination in carrot juice
supplied in Zabol juice stores and their antibiotic resistance**

Supervisors:

Dr. M. Rahnama – Dr. M. Alipour Eskandani

Advisors:

Dr. D. Saadati – Dr. A. Afshari Moghadam

By:

Najmeh Mesbah

Summer2020

Abstract:

In this study, we investigated the rate of Enterobacteriaceae infection and their antibiotic resistance in carrot juice offered in juice stores in Zabol city. We obtained 100 samples of carrot juice in juice stores in Zabol city then to the Health and Quality Control Laboratory of the Faculty of Veterinary Medicine, University of Zabol. The samples were weighed at 25 g and then added to 225 ml of lactose broth or peptone water. It was then added to EMB, Selenite Cystine Broth and Tetrathionate broth culture medium to isolate *Escherichia coli* and to search for *Salmonella* bacteria. We then added it to SS agar and bismuth sulfite agar and brilliant green agar media and cultured linearly. Also, for *Escherichia coli* confirmation tests, colonies with metallic green polish were transferred to Simon Citrate, TSI, SIM and finally to MR-VP culture medium. For *Salmonella* confirmation tests, colonies grown in SS agar, brilliant green agar, and bismuth sulfite agar were deep and shallow cultured on TSI and LIA culture media. Finally, the susceptibility of the obtained isolates to the following antibiotics was assessed: nalidixic acid (NA), ampicillin (AM), Amikacin (AN), Imipenem (IMP), Ciprofloxacin (CP), Gentamicin (GM), Ceftriaxone (CRO), Tetracycline (TE), Amoxiclav (AMC), and Sulfamethoxazole (SXT). The findings of this study showed that out of 100 samples of carrot juice studied in this study, 72 cases (72% with 95% confidence interval from 63% to 80%) were infected with *Salmonella* and 5 cases (5% with 95% confidence interval from 1% to 9%) were infected with *Escherichia coli*. *Salmonella* was most resistance to AM, TE and AN ,SXT isolates For *Escherichia* the most allergy was related to antibiotic.

Keywords: Carrot juice, *Salmonella*, *Escherichia coli*, Bacterial resistance