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**The Thesis Submitted for the Degree of M.Sc (in the field of
food hygiene and quality control)**

Investigation of coliform contamination of local spices (achaar) in Zabol , 2021

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Abstract

From the past till now, the spices have been used to enhance the flavor of food in making and processing of it. The local spice "Achar" belongs to Sistan region, which has a long history in this region. Most people in Sistan and Baluchestan province, especially Zabol city, consume it constantly. Coliform bacteria are among the food contaminants. Among them, *Escherichia coli* is an indicator of fecal contamination of food and is very important from this aspect. In this study, coliform contamination in local spices (Achar) in Zabol city was investigated and 120 samples of Achar spices were randomly prepared from all over Zabol city during two weeks, of these 120 samples, 60 samples were in powder form and 60 of them were in the form of circl. Also, from every 60 samples, 30 of them were in bulk and 30 of them were packed. Out of every 30 samples, 15 of them were obtained from the shop and 15 of them were purchased from hawker. The samples were transferred to the quality control laboratory of Zabol Veterinary faculty in sterile conditions with specification label and microbiological tests were performed on them to detect coliform and fecal coliform bacteria. The results were analyzed by SPSS software version 25 and Chi-square test was used for statistical analysis. The results of statistical analysis demonstrated that the prevalence of coliform bacteria in all samples was 32.5% and the prevalence of fecal coliforms was 12.5%, which is higher than the Iranian standard. Contamination of "Achar" spices with these bacteria could be due to: poor personal hygiene, using of contaminated raw materials, improper storage conditions. Contamination rate could be decreased with control of incoming raw materials, personal hygiene control, especially of people in contact with spices, using of high-quality raw materials and using the right storage.

Keywords: Contamination of coliforms, fecal coliforms, spices, Achar, Zabol.