



University of Zabol
Graduate Management
Faculty of Veterinary Medicine

Department of Food hygiene and quality control

**The Thesis Submitted for the degree of M.Sc
(in the field of Food Hygiene and quality control Science)**

Study of fungal contamination of local cookies in Zabol city

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Abstract

Food borne diseases due to consumption of contaminated food are considered as a critical health problem worldwide and in most countries over the past few decades there has been a significant increase in the incidence of diseases caused by microorganisms in food and many funds are compensated for treatment of such diseases annually. Fungal spores are scattered in the air and if they do not comply with hygiene standards, they can easily contaminate the cookies. In addition, local and industrial cookies are more likely to be contaminated with a variety of microbes, including molds, due to their ingredients, manufacturing and storage conditions, and distributors. The purpose of this study is to determine the fungal contamination in the consumed cookies in Zabol City. In this study, 200 samples of simple and date cookies were randomly sampled from 16 regions in 3 different turn from in Zabol and transferred to the food laboratory of the Faculty of Veterinary Medicine. Necessary microbial tests were performed according to Iranian national standards to check for fungal infection. The data were analyzed using Pearson Chi-square test and Fisher's exact test with the help of SPSS software version 25. The results of this study showed that 67 of 200 cookie samples were contaminated with mold and the infection rate of cookies was 35.5%. Fungal species of *Aspergillus* including *Aspergillus niger*, *Aspergillus treus*, *Aspergillus flavus*, *Aspergillus orize*, *Aspergillus acraseus* and *Penicillium*, *Corollaria* were identified and observed in this study. The results of statistical test at the significant level of $P < 0.05$ did not show a significant relationship between product type and excessive pollution. According to the results, the contamination of cookies with mold is high. Most likely, the reasons are related to its ingredients, so it seems necessary to observe hygienic principles and raise the level of awareness of those involved in the preparation and distribution of these products.

Keywords: fungal contaminants , cookies , Zabol