



University of Zabol  
Graduate school  
Faculty of Veterinary Medicine

**Thesis for obtaining a master's degree in hygiene and food quality control**

---

**Investigation of the presence of Staphylococcus  
in three dates varieties in Kerman province**

---

**Supervisors**

Dr. M. Alipour Eskandani  
Dr. R. Hajimohammadi Farimani

**Advisor**

Dr. M. Rahnama  
Dr. D. Saadati

**By**

A. Hashemi Nia Bami

**January 2021**

## Abstract

**Introduction:** Dates are one of the most important horticultural products in the country and its microbial safety is important due to its general health and special importance in maintaining export markets. Since the harvesting, grading and packaging of dates is done by direct human intervention and manually, the possibility of the presence of *Staphylococcus* bacteria in dates is predicted.

**Objective:** In this study, the presence of *Staphylococcus* population and its racial diversity on Mazafati, Krout and Halilei date cultivars from the cities of Kerman province are investigated.

**Methods:** In an applied study during the years 1399 and 1400 on 36 packages of dates (12 samples of Mazafati dates, 12 samples of Krout dates and 12 samples of Halilei dates) randomly from stores and cold stores of cities Bam, Barvat, Fahraj and Rostamabad were collected and transferred to the laboratory under sterile conditions for microbiological tests. From each package, 30 g of dates were mixed with 270 ml of peptone water diluent and diluted up to 10 to a negative power of 5 and superficially in Parker board culture medium.

Representatives of colonies grown in the last countable dilution were selected for microscopic observation, gram staining, catalase and coagulase tests, and DNA extraction. Genetic grouping was performed using ARDRA method. The 16S rRNA gene representing the fingerprints was amplified by PCR after sequencing and compared with the genes in the gene bank.

The experiment was calculated in a completely randomized design with 95% confidence of the bootstrap method and SPSS statistical software version 25 was used for statistical analysis of data.

**Results:** Out of 36 samples, 4 samples (11.1%) were infected with *Staphylococcus* bacteria, which is a small percentage.

**Conclusion:** The present results showed a low percentage of *Staphylococcus* bacterial infection in date fruit, which requires more extensive research to prove the presence of this bacterium.

The importance of training and applying hygienic methods to human resources when harvesting, separating and packing is all the more necessary.

**Key word:** *Staphylococcus*, Dates, Mazafati, Krout, Halilei, Bam