



ORIGINAL ARTICLE

Evaluation of Sulfonamide Antibiotic Residues of Honey Samples Produced in Different Regions of Qazvin Province by ELISA

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KEYWORDS

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ABSTRACT: Honey is a unique food product containing bioactive compounds derived from bees and plants. Nowadays, animal food products that may contain antibiotic residues have caused a lot of concern for the consumers. The presence of antibiotic residues in honey may be harmful to human health. One of the most important risks of antibiotic residues in food products is the occurrence of drug resistance in pathogenic bacteria in the body. Regarding the complications caused by these residues, the present research has investigated sulfonamide antibiotic residues in the honey samples consumed in Qazvin province. The present research is a cross-sectional study performed in different regions of Qazvin province in 2019. For this purpose, 80 honey samples were collected from different regions of Qazvin. The samples were transferred to the food safety laboratory of the Health Faculty under proper conditions. First, the samples were tested to check the sulfonamide antibiotic residue by the semi-quantitative ELISA assay. The data were recorded in SPSS 23, and data analysis was done by one-way analysis of variance (ANOVA) and (post hoc) Tukey test at the significant level of $P < 0.05$. According to the results of the ELISA assay, 10-120 ng of sulfonamide antibiotic residue was found in 23.75% (19 samples) of the samples. The findings showed that the highest and the lowest sulfonamide concentrations were respectively reported as 30.81 and 6.26 ppb, and the average sulfonamide residue was obtained as 14.50 ppb. According to the results, more than 75% of the honey samples collected from Qazvin province are free of sulfonamide or contain a little sulfonamide concentration. The research showed that most of the honey samples collected from different regions of Qazvin province are free of sulfonamide or contain a little sulfonamide concentration. Regarding the important role of honey consumption in health and the wide use of antibiotics in beehives, it is necessary to take the necessary actions to control the quality of this product.

INTRODUCTION

Honey is a naturally sweet food product produced by honeybees gathering the flower nectars, the matters

secreted from the living parts of plants, and insect secretions. This product is a complex combination of the