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

A study of antibiotic residues in milk of Shahrekord city

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Abstract

Because of its minerals, vitamins and other nutrients, cow's milk is used as a complete food and a healthy drink among all people of different ages. Therefore, it is important and necessary for this food to be healthy and of good quality. Many factors may reduce the quality of milk for the consumer. One of these factors is antibiotic residues in milk. Antibiotics are used in the treatment of disease or animal growth. These drugs remain in milk and animal meat for some time. Consumption of milk contaminated with antibiotic residues in humans causes health problems, and in industry it prevents the production of fermented products. It is almost impossible not to use these drugs in livestock, but by observing the time of prohibition of consumption of milk and meat contaminated with antibiotic residues and observing the amount of the permissible limit for the use of antibiotics in the treatment of livestock diseases. It is possible to prevent the dangers and damages caused by the residues of these drugs in humans and industry. In this research, the study of antibiotic residues in raw milk of Shahrekord city was done. 144 samples of raw milk were randomly collected from industrial and traditional cattle farms in Shahrekord city during three months of winter and three months of spring. In this way, 72 samples were taken from industrial and traditional cattle breeding in winter and 72 samples were taken from industrial and traditional cattle breeding in spring. The samples were transported to the laboratory of a raw milk collection station in Shahrekord in the 100 cc bottles with the type of cattle farm written on them inside the ice pack. The temperature and acidity of each sample were measured, and the residual beta-lactam and tetracycline antibiotic residues were determined using theoin sensor quality kits made in Belgium. SPSS version 26 and Excel software were used to analyze and review the results of this research. Chi-square test and Fisher's exact test, statistical analysis of the results were used for the statistical analysis of the results. The results of the statistical analysis showed that the prevalence of infection with antibiotic residues out of 144 samples, 28 samples (19.4%) were contaminated with antibiotic residues, of which 15 samples (20.4 %) were industrial animal husbandry, and 13 samples (18%) were traditional animal husbandry. Out of 28 infected samples, 24 samples (85.7%) were contaminated with beta-lactam antibiotic residue and 4 samples (14.3%) were contaminated with tetracycline residue. Also, 19 samples out of 72 samples in winter (26.4%), and 9 samples out of 72 samples in spring (12.5%) were contaminated with antibiotic residues. Unfortunately, the amount of antibiotic residue contamination in this area is high and this can be due to the lack of hygiene in the livestock keeping environment. Lack of hygiene causes diseases such as mastitis, followed by excessive use of antibiotics.

Keywords: raw milk, antibiotic, residues, Shahrekord.