

Study of Level and Sources of Pollution in Yazd's White Cheese in Brine by Some Metals

Sadeghizadeh, J.¹, Azizi, M. H.^{2*}, Dadfarnia, S.³, Hossaini, S.M.⁴

1. M.Sc. graduate, Institute and Faculty of Nutrition and Food Technology, Shahid Beheshti University M.C.
2. Associate professor, Dept. of Food Technology, College of Agriculture, Tarbiat Modares University
3. Professor, College of Chemistry, Yazd University.
- 4- Assistant Professor, Department of Food technology ,chemical Engineering, Amir Kabir University

In this research with respect to results arising from dietary absorption of heavy metals such as increase in heart and blood vessels disease, disorder in immunity and nervous system, reduction of fertility rate, increase in children death rate, and most important of all, automatic absorption and the point that cheese is one of the chosen food for feeding children and other age groups, level and source of pollution of Yazd's saline cheese to some metals was evaluated.

In this research from milk send to company , water used in process, used salt , packaging container PS+ AL (polystyrene + Aluminum) and cheese, 6 of each sample and totally 90 sample from 3 company A, B, C randomly was sampled; samples got ready for evaluation of metals such a lead, cadmium , arsenic, iron, zinc, copper and tin By slurry method, and final measurement of 2 metal iron and zinc by Flow Injection Analysis Atomic Absorption Spectrometry (FIA-AAS) and of other metals by Electro thermal Atomization Atomic Absorption Spectrometry (ETA – AAS) took place. Should be mentioned that 3 companies produced cheese was quarantined for 45 days in lacquered tin and 7 days in packaging containers and then was evaluated, Results of test show that highest rate of pollution by iron and cadmium belongs to A Company's cheese, highest rate of pollution by copper, zinc and Lead belongs to C company's cheese, highest rate of pollution by Tin and arsenic belongs to cheese produced by company named B. By the way, highest level of fat, moisture and protein belong to A, C, B cheese. Findings reveal that affinity of tin and arsenic to protein and affinity of cadmium and iron to fat is higher than other metals. Statistic analysis by SPSS software and Dunnett, Scheffe and Tukey tests was done and level of mentioned metal was less than normal.

Key words: Metals, Cheese, Atomic absorption, Yazd

*Corresponding author E-mail address: azizi_t@modares.ac.ir