

THE IMPACT OF THE HACCP SYSTEM ON THE REDUCTION OF PATHOGENIC MICROORGANISMS IN TOOLS, SPACES AND PERSONNEL IN MILK PROCESSING INDUSTRIES

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Abstract

The consumption of milk and milk products within the year in Kosovo is calculated to be over 175 kg per capita. The purpose of this research was to see the impact of the implementation of good work practices and the HACCP system in the prevention of cross-contamination with pathogenic microorganisms in work tools, spaces and personnel of milk processing industries.

Samples for analysis were taken in two milk processing factories, factory A in the region of Prizren - without implemented HACCP system and factory B in the region of Fushë - with implemented HACCP system. A total of 80 samples, 40 samples for each industry, were taken and analyzed in the working tools, spaces and personnel of the factories. The samples were taken according to Codex Alimentarius and analyzed for hazardous microbes' presence according to ISO standards. Data were analyzed using descriptive statistics and an independent sample t-test.

From the results of the research, we conclude that in factory A - without the implementation of the HACCP system, 32.5% of the samples were positive with microorganisms such as: *E. coli*, *Staphylococcus aureus*, *Listeria monocytogenes*, *Enterococcus* spp., *Klebsiella* spp., and *Citrobacter* spp., whereas in factory B - with the implementation of the HACCP system, 6.8% of the samples were positive with microorganisms such as: *Staphylococcus aureus*, *Listeria monocytogenes*, *Enterococcus* spp., and *Citrobacter* spp.

Although the milk processing factory which has implemented good work practices and the HACCP system, significantly reduces pathogenic microorganisms such as: *E. coli*, *Klebsiella* spp. etc., in the work tools, spaces and personnel, it has not been possible to completely eliminate microorganisms within the technological process. Therefore a new implementation of the HACCP system would be the right choice in these cases.

Key words: *Samples, Contamination, Microorganisms, Tools, Spaces, Personnel.*