

Assessment of Milk Quality in Vehari: Evaluation of Public Health Concerns

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Abstract : Milk is an important and fundamental nutrition source of human diet. In Pakistan, the milk used by the consumer is of low quality and is often contaminated due to the lack of quality controls. Mycotoxins produced from molds which contaminate the agriculture commodities of animal feed. Mycotoxins are poisons which affect the animals when they consume contaminated feeds. Aflatoxin AFM1 is naturally occurring form of mycotoxins in milk which is carcinogenic. To assess public awareness regarding milk Aflatoxin contamination, a population-based survey using a questionnaire was carried out from general public and from farmers of both rural and urban areas. It was revealed from the data that people of rural area were more satisfied about quality of available milk but the awareness level about milk contamination was found lower in both areas. Total 297 samples of milk were collected from rural (n=156) and urban (n=141) areas of district Vehari during June-July 2015. Milk samples were collected from three different point sources; farmer, milkman and milkshop. These point sources had three types of dairy milk including cow milk, buffalo milk and mixed milk. After performing ELISA test 18 samples with positive ELISA results were maintain per source for further analysis for aflatoxin M1 (AFM1) by High Performance Liquid Chromatography (HPLC). Higher percentages of samples were found exceeding the permissible limit for urban area. In rural area about 15% samples and from urban area about 35% samples were exceeded the permissible limit of AFM1 with 0.05µg/kg set by European Union. From urban areas about 55% of buffalo, 33% of cows and 17% of mixed milk samples were exceeded the permissible AFM1 level as compared with 17%, 11% and 17% for milk samples from rural areas respectively. Samples from urban areas 33%, 44% and 28% were exceeded the permissible AFM1 level for farmer, milkman and of milk shop respectively as compared with 28% and 17% of farmer and milkman's samples from rural areas respectively. The presence of AFM1 in milk samples demands the implementation of strict regulations and also urges the need for continuous monitoring of milk and milk products in order to minimize the health hazards. Regulations regarding aflatoxins contamination and adulteration should be strictly imposed to prevent health problems related to milk quality. Permissible limits for aflatoxin should be enforced strongly in Pakistan so that economic loss due to aflatoxin contamination can be reduced.

Keywords : Vehari, aflatoxins AFM1, milk, HPLC

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