

7th EUROPEAN FOOD SAFETY & STANDARDS CONFERENCE

November 13-14, 2017 | Athens, Greece

Detection of aflatoxin M₁ and ochratoxin A in raw, pasteurized and UHT milks

Erhan Keyvan, Ozen Yurdakul, Fatma Kocasari, Hidayet Tutun, H Ahu Kahraman, Erdi Sen and Cagla Turkoglu
Mehmet Akif Ersoy University, Turkey

Milk is one of the most important protein sources for all mammals. Mycotoxins are components produced by yeasts and fungi that have toxic effects on human and animal health. Yeasts such as *Fusarium*, *Aspergillus* and *Penicillium* are the most common microorganisms that produced mycotoxins and that cause food, feed contamination. Mycotoxins taken as a result of feeding the dairy cows with feed containing AFB₁, various metabolites are formed by the cytochrome P450 enzyme in the liver. The most important of these metabolites is AFM₁. Ochratoxin A (OTA) is a mycotoxin which contaminates different plant products, including cereals, coffee beans, nuts, cocoa, pulses, beer, wine, spices and raisin. OTA is synthesized by *Aspergillus* and *Penicillium* species. OTA has been reported to have nephrotoxic, immunotoxic, teratogenic and carcinogenic effects in humans. OTA is a partly stable molecule and it may remain unchanged in food even after processing. Therefore, it is suggested that OTA content should be monitored in animal origin foods. In this study, we aimed to identify Aflatoxin M₁ and Ochratoxin A in raw, pasteurized and UHT milks. We analyzed 77 milk samples (35 raw milks, 35 UHT milks and 7 pasteurized milks) by ELISA. As a result, there is no OTA contamination in milks. The maximum level set by the Turkish Food Codex for AFM₁ in liquid milk was exceeded in 11.4% (4) of raw milks and 8.5% (3) of UHT milk samples. So we found that total number of AFM₁ positive samples are 11% (7) of all milk samples. The presence of AFM₁ may give rise to high risks to human health because of their carcinogenic, mutagenic and teratogenic effects. As milk is one most important protein sources for the human, more precautions should be taken on hygiene controls in order to prevent microbiological and chemical hazards.

erhankeyvan@gmail.com