



## Determination of heavy metal residual levels in bottled natural mineral waters sold in Istanbul, Turkey

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### Abstract

Water is a vital food material for humans and other living things to survive. Recent developments in various industrial sectors, urbanization and the spread of agriculture based on modern techniques have resulted in increased contamination of water with heavy metals and microbial agents. This study was conducted to investigate the concentrations of selected heavy metals in bottled spring waters sold in Istanbul, Turkey markets. For this purpose, 200 bottled natural mineral waters were collected and analyzed for the residual quantities of Pb, As, Hg, Cd, Cu using ICP-MS technique. The concentrations of Pb, As and Cu were higher to the limit values of the regulations in 72 (36%) of natural mineral waters, while the average amounts of positive samples were determined as 3.01, 4.77, 0.72, 0.01 and 2.49 µg/L for Pb, As, Hg, Cd and Cu, respectively in all analyzed samples. As a result, it is important to carry out routine control of waters on the basis of welding, filling units and filling containers. The existence of heavy metals in the environment is a serious risk for water quality due to their high toxicity to plant, animal and human life. Thus, it is obviously important to follow out the monitoring of heavy metals in water samples and to take preventive measures to prohibit environmental pollution by heavy metals' contamination in order to protect the public health. Moreover, better hygienic practices in the water industry such as controlling water quality, improving hygienic filling system, sanitizing sufficiently running water, using of non-returnable plastic containers and providing routine training for the relevant staff could be prohibited the risks of heavy metals' contamination.

### Biography

Akkaya E has completed her PhD at the age of 28 years from Istanbul University-Cerrahpasa, Turkey in 2019. She is research assistant at Istanbul University-Cerrahpasa, Faculty of Veterinary Medicine, Department of Food Hygiene and Technology. She has 7 publications, and also over 40 presentations at international food congresses / conferences. Happy for what you did.

### Publications

1. Detection, Characterization and Antibiotic Susceptibility of Clostridioides (Clostridium) difficile in Meat Products Esra Akkaya Department of Food Hygiene and Technology, Faculty of Veterinary Medicine, Istanbul University-Cerrahpasa, 34500, Istanbul, Turkey
2. Effect of Nisin-EDTA combinations and modified atmosphere packaging on the survival of salmonella Enteritidis in Turkish type meatballs Esra Akkaya Department of Food Hygiene and Technology, Faculty of Veterinary Medicine, Istanbul University-Cerrahpasa, 34500, Istanbul, Turkey
3. The prevalence of Clostridium difficile in cattle and sheep carcasses and the antibiotic susceptibility of isolates Esra Akkaya Istanbul University, Department of Food Hygiene and Technology, Faculty of Veterinary Medicine, 34320 Istanbul, Turkey



9<sup>th</sup> Conference on Food Science & Technology  
March 18-19, 2020, Frankfurt, Germany

**Citation:** Esra Akkaya, *Determination of heavy metal residual levels in bottled natural mineral waters sold in Istanbul, Turkey*, **Food Technology 2021, 9th Conference on Food Science & Technology, March 18-19, 2020, Frankfurt, Germany, 05**