

SHC 12. INVESTIGATION OF TOXIC HEAVY METALS IN MINERAL WATER SAMPLES SOLD IN TURKEY

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In last decades there has been an increase in consumption of bottled mineral waters (BMW) instead of tap water due to recent problems about tap water's resources depending on safety concern in all over the world. Although bottled waters are often remarked as safer than tap water, at some cases this approach may be not true especially if those products contain higher levels of trace elements and some toxic heavy metals.

BMW always contains various minerals and trace elements. We know that some of these elements such as selenium (Se) zinc (Zn) are essential for living organisms and they are required for normal biochemical reactions. On the other hand, other toxic elements, called toxic heavy metals (THM), potentially could be harmful for human health when they present in excessive levels in these products. Thus, chronically exposures to these elements such as lead (Pb), cadmium (Cd) associate with chronic illness and cancers. In this respect, for the evaluation of probable health risks arising from these elements depend on a special point that is determine of those elements in interesting products. Based on above information we aimed in this study determining the THM levels in natural mineral water (NTM) and fruit-flavored BMW sold in local markets in Turkey. Also, we investigate whether the geographic location, which is about production site, effect the metal level or not. Arsenic (As), cadmium (Cd), chromium (Cr), lead (Pb), nickel (Ni) are determined in 93 samples belong to 13 different firm by using Graphite Furnace Atomic Absorption Spectroscopy (GFAAS) technique. The samples consisted of 27 natural mineral water and 66 flavored (strawberry, lemon, cherry). Our results showed that the toxic metal levels determined in the samples don't contain any risk in terms of toxicological aspect if they are consumed. However, it is very important that similar studies within more extensive sample should repeat in certain periods in terms of protection of public health and observing the subject recently.

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