# PP12- Seasonal Changes in concentrations of Heavy Metals in Tap Water from the City Center of Canakkale, Turkey

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Environmental problems are very important because of they affect large areas and communities from all over the world. Industry establishments which discharge heavy metals are the most important establishments which pollute the environment [1]. Heavy metals which have various toxic effects even if they are a low concentration in water, cause to disease by damaging to human health and may even lead to death. So, it is very important to determine these heavy metals.

In this study, tap water samples were seasonally collected from five different sampling regions between May 2012 and February 2013 in Canakkale, Turkey. Cd, Cr, Cu, Fe, Mn, Ni, Pb and Zn heavy metals were analyzed by an Inductively Coupled Plasma and Optical Emission Spectrophotometer (ICP-OES). The results of heavy metals concentrations were discussed comparatively with the drinking water standards of the European Union (EU), World Health Organization (WHO), Environmental Protection Agency (EPA), and Turkish Standards Institute (TSE 266) [2]. While concentrations of biotoxic metals Cr, Cd, Ni, and Pb were under undetectable limits, levels of bioactive metals Cu, Fe, Mn, and Zn varied between 0.000 and 0.003 ppm, 0.000 and 0.173 ppm, 0.000 and 0.009 ppm, 0.000 and 2.343 ppm, respectively. As a result, the public tap waters of Canakkale (Turkey) were found healthy in terms of heavy metals at studied period. Two-way variance analysis (ANOVA) was used to test the significance of differences between sampling points and seasons (two factors) at 0.01 and 0.05 levels in view of heavy metal concentrations.

Keywords: Turkey, Canakkale, Tap water, Heavy metals.

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