# TEMPORAL VARIATIONS AND SPATIAL DISTRIBUTION OF FLUORIDE IN WATER RESOURCES OF VILLAGES IN DIVANDAREH, KURDISTAN, IRAN

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**SUMMARY: Fluoride can cause health problems in concentrations beyond the recommended levels. Therefore, the evaluation of its concentration in drinking water is necessary and, in this study, the temporal variations and spatial distribution of the drinking water fluoride concentrations in villages in Divandareh were determined. Thirty villages were selected and 180 samples were taken in two low- and high-water seasons in the year 2013. The concentrations of fluoride and other anions were measured with the Ion Chromatography (IC) method. Geospatial analysis of the data was done using the ArcGIS geographical information system (GIS) software by Environmental Systems Research Institute (Esri). The results showed that the average fluoride concentration in drinking water ranged from 0.136 to 0.736 mg/L with the concentration being less than 0.50 mg F/L in 163 samples (90.56%) and between 0.51 and 1.0 mg F/L in 17 samples (9.44 %). A significant difference was present between the concentrations of fluoride in the two-stage sampling ($p<0.01$) with the nonparametric Wilcoxon test).**

Keywords: Divandareh, Kurdistan, Iran; Fluoride;Spatial distribution; Temporal variations.

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