

Elemental Concentration of Selected Soil and Water Samples from Al-Madinah Area, Saudi Arabia.

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Abstract. As a part of an extensive soil and water evaluation project, soil and water samples were collected from ten sampling sites in Al-Madinah area in Saudi Arabia. The objectives were: (1) to investigate the elemental concentrations of the samples and to compare them with the existing standards, (2) to enter the data in a data base to be utilized as a ground for future research projects for agricultural and urban development purposes.

Ten soil sampling sites were selected in the Al-Madinah area. Five individual locations were selected within each sampling site. Each sample processed and passed through a 2 mm sieve. A 0.5 g sub-sample was digested in concentrated analar HNO_3 and analyzed for B, Co, Cu, Fe, Mn, Pb and Zn and for Ca and Mg. Organic matter contents, total soluble salts and pH were determined. Five replicate water samples were collected from five locations.

The organic matter contents of the soil samples vary between 0.02 and 0.86%. The total soluble salts fluctuate between 0.03 and 0.66% and the soil pH vary between 7.01 and 7.55. The concentrations of Ca are the highest followed by the concentrations of Mg and Fe. Boron concentrations are low. Mean Ca contents are similar to previous findings by other researchers.

The mineral concentrations of the water samples are similar to those of the unbottled drinking waters according to the international and Saudi Arabian Standards organizations.