

**Ecotoxicological significance of sediment trace metals  
(chromium, copper, lead) in wadis of Kebir-Rhumel watershed (Algeria)**

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This study seeks to evaluate sediment contamination by trace metals (chromium, copper, lead) in wadis of Kebir Rhumel watershed in the North-east of Algeria. Its goals are to assess sediment contamination level by trace metals and to identify environmental risk for aquatic organisms. Water and surficial sediment (0-5cm) were sampled in 37 sites along permanent watercourses of the Kebir Rhumel watershed. Sediment pseudo-total heavy metal contents were measured by Flame Atomic Absorption Spectroscopy. Water and sediment physicochemical properties were determined. Temperature (T), pH<sub>w</sub>, conductivity (EC<sub>w</sub>) and suspended solids (SS) for water, pH<sub>s</sub>, conductivity (EC<sub>s</sub>), total calcareous (TC), organic carbon (OC), loss on ignition (LOI) and grain size for sediments.

Trace metals concentrations in sediments followed a decreasing order: Pb>Cr>Cu. The ranges of trace metal concentrations found in sediment are as follows: 10-216 µg/g for Cr, 9-446 µg/g for Cu, 11-167 µg/g for Pb dry weights. According to world natural concentrations, all sediments collected are considered as contaminated by one or more elements. Comparing measured concentrations with American guidelines (Threshold Effect Level (TEC) and Probable Effect Level (PEC)) showed that biological effects can be occasionally observed for chromium, lead levels but frequently observed for copper. In general, sediment quality was shown to be fair to bad for chromium, copper, lead regardless of sites.

**Keywords:** Water, Sediment, Trace metal, Contamination, Ecotoxicological significance, Kebir Rhumel Watershed.