

ASSESSMENT OF HEAVY METALS IN SEDIMENTS AND PHRAGMITES AUSTRALIS IN TIRANA RIVER, ALBANIA

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ABSTRACT

In recent years, rivers and coastal waters were seriously polluted by the pollutants of industrial and urban establishments discharged in them, and heavy metal was the main pollution. The objective of current study was to assess the occurrence of heavy metals in sediments and investigated in *Phragmites australis* samples from the bed of the Tirana River in Albania. The genus *Phragmites* has proven ability to mitigate the environmental pollution of its surroundings. Five sampling points were selected to collect sediment samples and common reeds (5 roots and 5 leaves). The heavy metals contents in sediments were in the following ranges (mg/l) Zn 36.6-53.9 (± 6.53), Cu 125.4- 188.9 (± 25.93), Ni 137.8- 165.8 (± 10.9), Cr 120.8-175.9 (± 26.35), Mn 584.9 -1098.6 (± 191.96), Fe 28864.2 - 38465.5 (± 4316.41). Sediments sample were collected in depth 0-20 cm and were prepared according to standard procedures. Heavy metals in sediment and in plants were analyzed with atomic absorption spectrophotometer technique. The degree of sediment pollution was evaluated by using Bioconcentration Factor (BCF) and Translocation ability (TA). The research proved a strong positive correlation between the concentrations of metals in the sediment and all common reed. Concentrations in belowground organs were usually higher than aboveground organs, and the general decreasing trend of element content was roots > leaves.

Keywords: Heavy metals, plant organ, sediment, Tirana River.