

Abstract:

Green technology “phytoremediation” approach was applied in Wadi Alsamin in Hebron-Palestine to evaluate the plant efficiency in remediation of polluted soil. An open field controlled experiment was conducted to assess the efficiency of two plant species namely: corn (*Zea mays*) and tobacco (*Nicotianatabacum*) plants for bioaccumulation of heavy metals under natural growth without chemical assistance. The concentrations of three heavy metals (Cr, Mn, Zn) were determined in all plant parts (root, stem, leaf and fruit) for both plants by using Inductively Coupled Plasma–Atomic Emission Spectrometry (ICP-AES). The accumulation of heavy metals in leaves was higher than in the other parts for both plants. The bioaccumulation factor (f) of corn plant for Cr as a pollutant metal 0.05 was higher than in tobacco 0.02 while bioaccumulation factor (f) for Mn in tobacco 0.13 was higher than in corn 0.09 where bioaccumulation factor (f) for Zn in both plant was 0.3.