NICKEL AND COPPER CONCENTRATIONS IN PLANT LEAVES AS BIOMONITOR OF ENVIRONMENTAL POLLUTION

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It is well known that the absorption rate of trace metals by inhalation is significantly higher than those by ingestion. The accumulation of nickel and copper in human body can have middle and long-term health risks and adversely affect the physiological functions [1]. However, there are fewer studies on trace metal determinations in air samples in compared to the other environmental matrices such as soil and water because of, probably, the difficulties such as in obtaining of air sample and their excessive low concentrations in this matrix. In order to overcome these problems, there is increased interest to use of plant parts such as leaves, shoots and bark as biomonitoring.

In this study, various plants leaves grown around industrial areas cement and similar factories in Elazig city, and background areas were analyzed for Ni and Cu determinations, taking into consideration season. The results showed that Ni and Cu concentrations in leaves of some plants including pinus species grown in center of city are higher (up to 1.0 mg Ni kg\(^{-1}\) and 4.0 mg Cu kg\(^{-1}\)) than in the control sites. Consequently, it was observed that pinus species can be used as biomonitor for environmental pollution.

References