

The Investigation of Cadmium Pollution in the Metal Production Factory in Relation to Environmental Health

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Abstract : Toxic metals such as lead and cadmium are among the pollutants that are created by the metal production factories and disseminated in the nature. In order to study the quantity of cadmium pollution in the environment of the metal production factories, 50 saplings of the spruce species at the peripheries of the metal production factories were examined and the samples of the leaves, roots and stems of saplings planted around the factory and the soil of the environment of the factory were studied to investigate pollution with cadmium. They were compared to the soil and saplings of the spruce trees planted outside the factory as observer region. The results showed that the quantity of pollution in the leaves, stem, and roots of the trees planted inside the factory environment were estimated at 1.1 milligram/kilogram, 1.5 milligram/kilogram and 2.5 milligram/kilogram respectively and this indicated a significant difference with the observer region ($P < 0.05$). The quantity of cadmium in the soil of the peripheries of the metal production factory was estimated at 6.8 milligram/kilogram in the depth of 0-10 centimeters beneath the level of the soil. The length of roots in the saplings planted around the factory of metal production stood at 11 centimeters and 14.5 centimeters in the observer region which had a significant difference with the observer region ($P < 0.05$). The quantity of soil resources and spruce species' pollution with cadmium in the region has been influenced by the production processes in the factory.

Keywords : cadmium pollution, spruce, soil pollution, the factory of producing alloy metals

Conference Title : ICEBESE 2014 : International Conference on Environmental, Biological, Ecological Sciences and Engineering

Conference Location : Barcelona, Spain

Conference Dates : February 27-28, 2014