

Phytoremediation of Chromium Using Vigna mungo, Vigna radiata and Cicer arietinum

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Abstract : Heavy metal pollution in water bodies and soil is a major and ever increasing environmental issue nowadays, and most conventional remediation approaches do not provide appropriate solutions. By using specially selected and engineered metal-accumulating plants for environmental clean-up is an emerging technology called as phytoremediation. The aim of this study was to find the effect of phytoextraction of Chromium in hydroponics culture by using Vigna mungo, Vigna radiata and Cicer arietinum. The plants were allowed to grow in static hydroponic culture at 0, 50, 250, 500 and 750 ppm concentrations of Chromium dichromate. The germination percentage was determined. It was found that the germination percentage of the seeds decreased with an increase in the concentration of the heavy metals. The maximum permissible limit of Cr for Vigna radiata and Cicer arietinum was 500 ppm and toxicity was observed whereas at even at 750 ppm no toxicity was observed in Vigna mungo. The main aim of our experiment was to study the impact of Chromium on all the three selected plants.

Keywords : phytoremediation, phytoextraction metal-accumulation, heavy metals, pollutants

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