PLANT GROWTH PROMOTING POTENTIAL OF NANO-BIOREMEDIATION UNDER CR (VI) STRESS

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ABSTRACT

The present investigation reports on the tolerance efficiency of *Brassica Juncea (Indian mustard)* against hexavalent Chromium (Cr (VI)) in the presence of zero valent nanoiron (ZVNI). The effect of farmyard manure (FYM), a natural organic matter used as an amendment on Cr (VI) detoxification was also studied. The seeds of *Brassica Juncea* are planted in the pot containing Cr (VI) contaminated soil with various concentrations of ZVNI and FYM. There was a positive linear relationship between amount of FYM added and Cr (VI) reduction in soil. The concentration of Cr (VI) in soil was monitored using UV-Vis Spectroscopy for every 5 days during the experimental period of 30 days. The results indicated that the combined impact of FYM and ZVNI demonstrated the highest removal efficiency compared to ZVNI alone in the reduction of Cr (VI). The tolerance efficiency of *Brassica Juncea* was found to be 100% and 95% in transplantation and germination methods respectively.

KEYWORDS: Tolerance Efficiency, Chromium, *Brassica Juncea*, Farm Yard Manure, UV-Vis Spectroscopy