



## **Comparison of synthetic chelates and sugarcane compost**

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The plant used for soil detoxification is called phytoremediation. Applying the available plants it would take decades to detoxify a soil. So, a new subject known as phytoremediation along with chemical substances has been introduced recently. In this method the produced dry matters increases and bring about a higher volume of absorbed heavy metals by the plant. This experiment was conducted in a completely randomized design to compare the effects of synthetic EDTA and compost of sugarcane. For treating the contaminated soils with Cd, bp and Ni under canola cultivation. Soil was artificially contaminated by spraying, 2 contaminative levels of 800 ppm, including (50 ppmCd, 250ppm Ni and 500 ppm Pb) and 1600 ppm including (100ppmCd, 500ppm Ni and 1000 ppm Pb). The soils were placed in a dark space for 2 weeks and compost were applied in two levels (20 and 50 ton per hectares). A number of 5 canola seeds with a germination power of 95% were cultivated. 2 weeks after cultivation, the treatments included EDTA (0, 10, 20 mmol /kg) with irrigated water were added to the pots. 8 weeks after cultivating the plants were cut and the analysis of soil and plant were done in the laboratory. Total concentration of heavy metals increased in shoot and root. Compost and EDTA were observed powerful chelates to increase solubilization of heavy metals in soil and this refinement was much more than the little matter level in the samples with high level of matter. For translocation of Cd from root to shoot the effect of compost and EDTA were meaningful. In both contaminated soils, translocation of Pb from root to shoot, was affected by the 2 chelates. In high level of soil contamination EDTA and compost were powerful to translocate Ni from root to shoot. In both contaminated soils Transfer Coefficient and Uptake Index of Cd, Pb and Ni were meaningful in the probable level of 1% .

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