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What is a heavy metal? Effect of the heavy metal on the environment and introducing a few resistant types against the metals

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Abstract:
High concentrations of Cd, Pb, Cu and Cr can cause harmful effects to the environment. These highly toxic pollutants constitute a risk for aquatic and terrestrial life. They are associated with diverse bioavailable geochemical fractions, like the water-soluble fraction and the exchangeable fraction, and non-available fractions like those associated with the crystalline net of clays and silica minerals. Depending upon their chemical and physical properties we can distinguish different mechanisms of metal toxicity in plants, such as production of reactive oxygen species from auto-oxidation, blocking and/or displacement of essential functional groups or metallic ions of biomolecules, changes in the permeability of cellular membranes, reactions of sulphydryl groups with cations, affinity for reactions with phosphate groups and active groups of ADP or ATP, substitution of essential ions, induction of chromosomal anomalies and decrease of the cellular division rate. However, some plant species have developed tolerance or resistance to these metals naturally. Such evolution of ecotypes is a classic example of local adaptation and microevolution, restricted to species with appropriate genetic variability. Phytoremediator woody species, with (i) high biomass production, (ii) a deep root system, (iii) high growth rate, (iv) high capacity to grow in impoverished soils, and (v) high capacity to allocate metals in the trunk, can be an alternative for the recovery of degraded soils due to excess of metallic elements. The purpose of Phytoremediation using woody species presents advantageous characteristics as an economic and ecologically viable system, making it an appropriate, practical and successful technology.

***Keywords**: heavy metal, heavy metal Impact on the environment, introducing a few species resistant metals, environment, environment, What is heavy metal*