

INFLUENCE OF HEAVY METALS PHYTOTOXICITY ON SEED GERMINATION AND PLANTS GROWTH

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Abstract. *Environmental pollution with heavy metals has become a critical concern because of their potential to create negative ecological effects. Such toxic elements are considered pollutants of the soil because of their spread, the appearance and their acute and chronic toxic effect on the cultivated plants. Excessive release of heavy metals into the environment has become a primary issue worldwide, as they cannot be transformed into non-toxic forms and therefore have long-lasting effects on the ecosystem. Many of them are toxic even at very low concentrations. In this context, experimental program has been structured to address the problem of heavy metals phytotoxicity and plants tolerance against this aggressive factor. This paper presents the results of the phytotoxicity studies of Cd(II) on three plants: Brassica rapa (rape), Sinapis alba (white mustard) and Amaranthus retroflexus (redroot pigweed) in terms of seeds germination and plants grow. It was observed that plants exhibit some tolerance to heavy metals toxicity, which depends on metal concentration and plant characteristics.*

Keywords: cadmium, seed germination, phytoremediation, phytotoxicity, plant, root, stem

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1. Introduction

The rapid growth of industrial sector during the last centuries has led to the release in the environment of a large number of polluting chemical compounds (hydrocarbons, polycyclic aromatic hydrocarbons, halogenated hydrocarbons, pesticides, solvents, metals) which during their manufacture and use are very

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