

Environmental Toxicology

Edited by :
Dr. Jyotsna Jain

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CHAPTER - 3

Heavy metals toxicity and its impact on environment and human health

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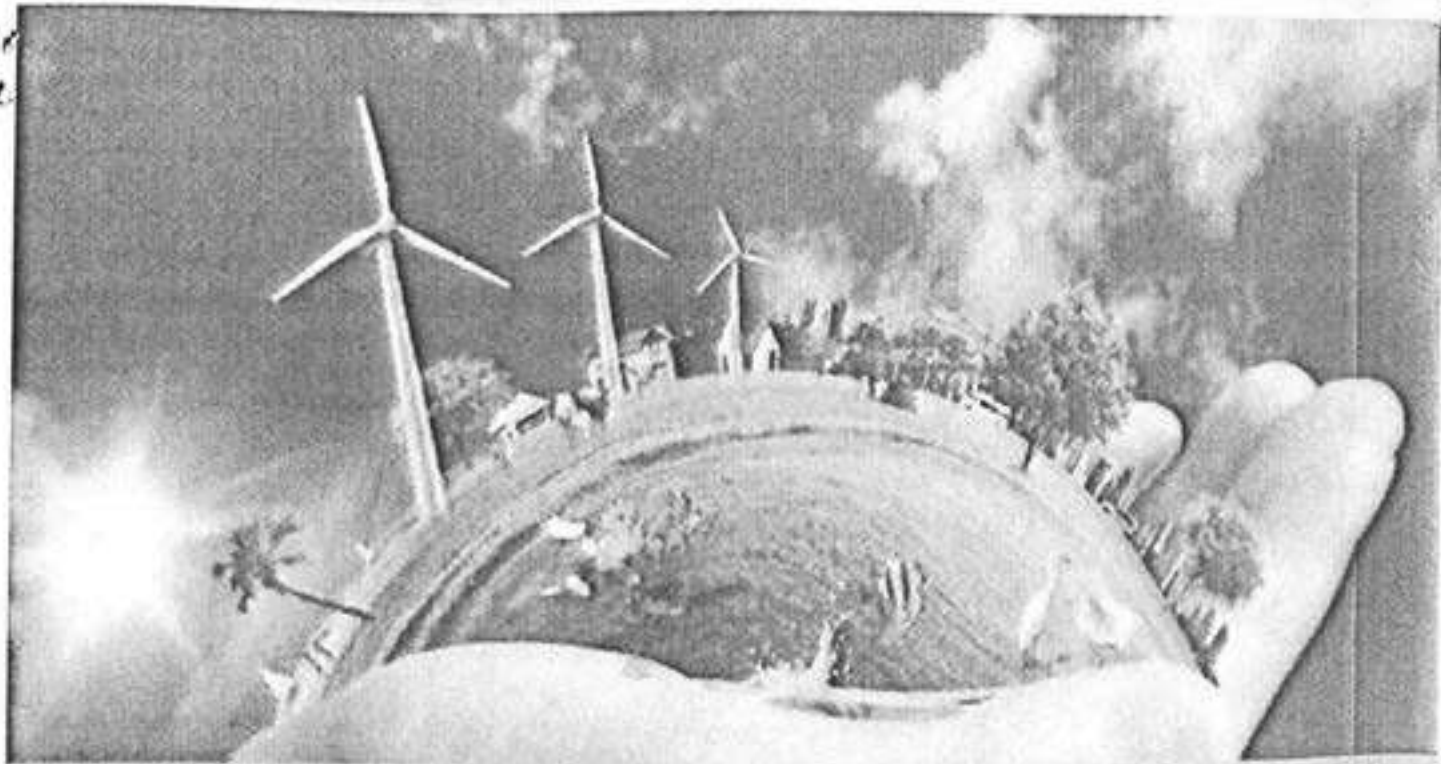
Abstract

Heavy metals (cadmium, chromium, cobalt, copper, lead, iron, magnesium, mercury, nickel, uranium and zinc) are elements with an atomic weight greater than 20 and characterized by similar atomic electron configurations in the outer orbital. Metals can exist in water and organisms in a wide variety of chemical forms and in combination with other materials. Their multiple industrial, domestic, agricultural, medical and technological applications have led to their wide distribution in the environment; raising concerns over their potential effects on human health and the environment. Their toxicity depends on several factors including the dose, route of exposure and chemical species, as well as the age, gender, genetics and nutritional status of exposed individuals. A few metals, including Cu, Mn, Co, Zn and Cr are, however, essential to plant metabolism in trace amounts. It is only when metals are present in bioavailable forms and at excessive levels; they have the potential to become toxic to plants. This review focuses mainly on Cd, Cr, Cu, Pb, Hg, Ni and Zn.

Key words: Heavy metals, environment, toxicity.

Introduction

Heavy metals are significant environmental pollutants and their toxicity is a problem of increasing significance for ecological, evolutionary, nutritional and environmental reasons. The term "heavy metals" refers to any metallic element that has a relatively high density and is toxic or poisonous even at low concentration (Lenntech Water treatment and Air Purification, 2004). In recent years, there has been an increasing ecological and global public health concern associated with



Environmental Toxicology

"What can be measured can be managed"
Peter Drucker

**Toxicology is a Burning Issue....needs
Realization, Education, Measurement, Control and
Contribution by Society at Large.**



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