

Environmental Toxicology

Edited by :
Dr. Jyotsna Jain

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CHAPTER - 5

PHYCOTOXINS: A REVIEW

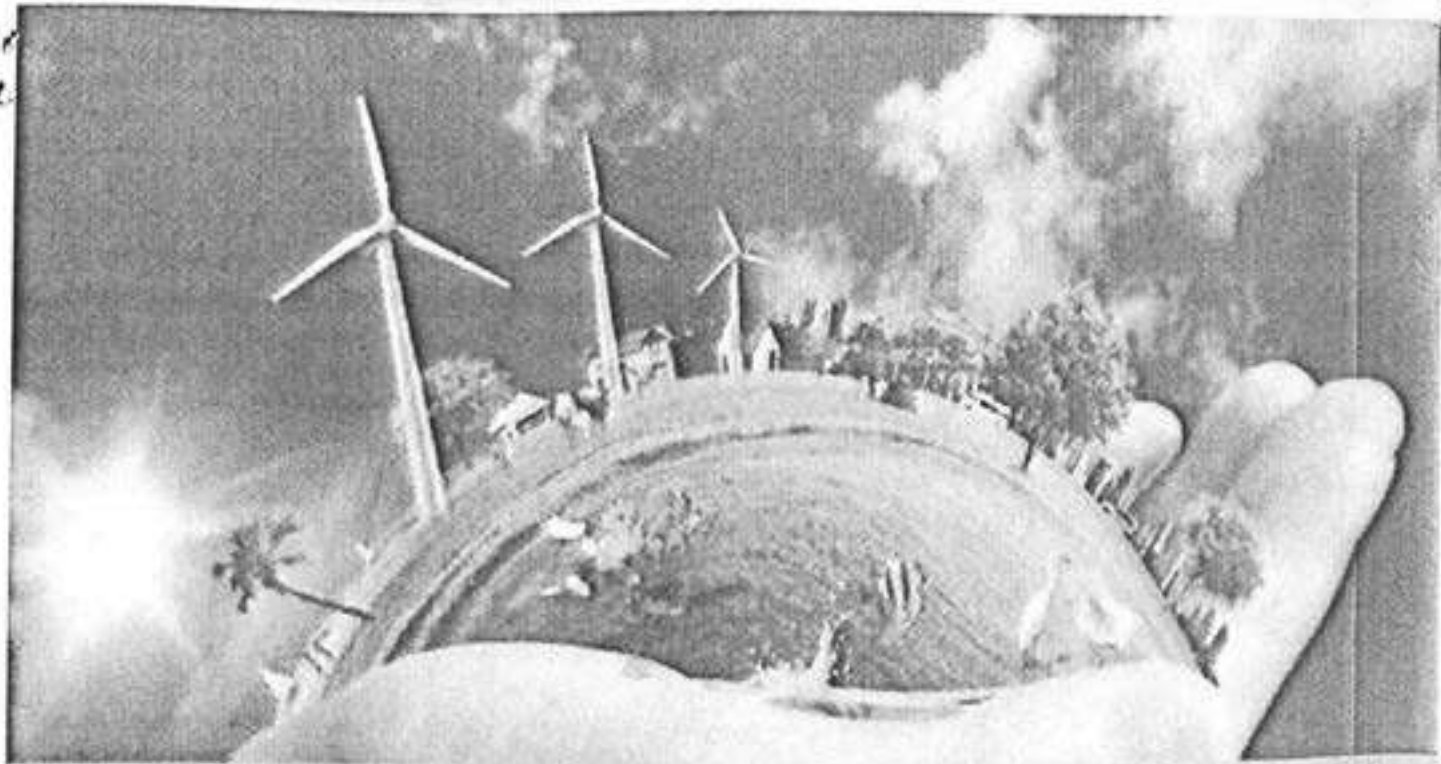
Dr Ritu Jain, Assistant Professor,
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Toxicology has been since centuries was an integral part of human health and the society, studying the likely harmful impact associated with the chemicals and substances, natural or manufactured, on the human health and animals. The systematic study of the effects of the toxic substances on the ecosystem commenced in 20th century. Rachel Carson made Environmental toxicology, a distinct field with in toxicology, with publication of her book 'Silent Spring' in 1962. Environmental Toxicology studies impacts of chemical pollutants in the environment on biological organisms. However, ecotoxicology, which is different from the environmental toxicology, is defined by Truhaut (1977) as, "the branch of Toxicology concerned with the study of toxic effects, caused by natural or systematic pollutants, to the constituents of ecosystems, animals (including humans), vegetable and microbial, in an integral context." It studies the impact of the stressor chemical on all levels of the ecosystem and pollution dynamics.

Some chemicals of biosynthesis, important for the growth and development of all organisms, plant, animal and microbial, but not needed for primary metabolism, i.e. respiration or photosynthesis, have been termed as 'secondary' for the fact that no apparent functional role has been assigned to these. These may have been evolved for defense against attacks by herbivorous animals.

The adaptive significance of the secondary chemicals has been under deliberations but accumulated facts suggest an important ecological role for these metabolites. The interactions among plants and their ecosystem as well as protective agents against physical environmental stresses (Rhoades, 1979) signifies their role. These metabolites having a marked biological impact, usually harmful, are often termed as biotoxins. The role of biotoxins is not as clear in flora as is for animals. *Seisy* prey gathering or defense.

Complex allelopathic chemicals, produced through secondary metabolic pathways, by Eukaryotic and Prokaryotic algal flora are



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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