# Editorial Note on Ecotoxicology

**Pallavi Jha***

**Editorial Note**

Ecotoxicology is the study of the detrimental effects of chemicals on the structure, functions, and biodiversity of ecosystems. It is a new discipline, only established over the last four decades, directly associated to the need to recognize, anticipate, monitor, and mitigate the negative environmental effects of the recent human industrial growth. Ecotoxicology has always been related to toxicology, which is in part an extension of human/veterinary toxicology to the analysis of effects on wildlife. Ecotoxicology, from both philosophical and analytical perspectives, is often related to ecology at the same time.

Ecotoxicology's manifest concepts include the application to the world of the principles of toxicology: based on human behavior contributing to the release of compounds such as polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), xenoestrogens (XEs), chlorofluorocarbons (CFCs), pesticides, heavy metals, radionucleotides, greenhouse gasses (CO2, CH4), sulfur dioxide (SO2) and oxides of nitrogen (NOX) into the environment.

Molecular toxicology is the toxicology branch (the study of the effects on individuals of clearly poisonous substances) that adopts the biochemical approach to understanding the harmful threats to life, frequently recognized in a variety of fauna and flora by a number of morbid conditions. At a molecular level, such pathology can be understood in terms of biomolecular damage.

Subjected to macromolecules such as DNA (deoxyribonucleic acid: the genetic determinant primarily residing in the living cell nucleus), RNA (ribonucleic acid: responsible for the transfer to the cytoplasm of the cell of the genetic message inherent in the DNA structure series), and various proteins constructed from a choice of residue sequence of 20 amino acids.

The improved knowledge of chemistry and its related biochemistry enables a meaningful prediction of chemical toxicity in all life forms (ranging from bacteria and higher fungi to plants and animals including Homo sapiens).

Although no substantial distinction can be made between natural and manmade chemicals released into the environment, biomarkers for constitutive or acquired tolerance to chemicals such as polycyclic aromatic hydrocarbons, polycyclic halogenated biphenyls and xenoestrogens hydrocarbons are useful for detoxifying enzymes such as the ubiquitous oxygen-requiring enzyme family, cytochromes P-450, present in most forms of life.

Survivors are now displaying a number of such biochemical defenses against toxicants in the course of millions of years of biological evolution of animals, including the more recent toxins released by industrial activity in the refining and manufacturing industries.

***Corresponding author**: Pallavi Jha, Researcher, Department of Chemical engineering, Banasthali University, India, E-mail: jhapallavi275@gmail.com*

***Received date**: January 10, 2021; **Accepted date**: January 22, 2021; **Published date**: January 29, 2021*