Advancements in Environmental Biotechnology

Dr. Roohi
Dr. Alvina Farooqui
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Editors

Dr. Roohi

Dr. Alvina Farooqui

Dr. Aisha Kamal

Department of Environmental Science

Integral University, Lucknow (U.P) INDIA

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CHAPTER 2

CURRENT TRENDS AND FUTURE PERSPECTIVES OF BIOPLASTICS

Shareen Fatima Rizvi, Rabiya Akram and Roohi*

Protein Research Laboratory, Department of Bioengineering, Integral University, Lucknow, India-226026

***Corresponding author:** roohi@iul.ac.in

Abstract

Bioplastics are plastics in which all carbon is derived from renewable feedstock's. Bioplastics plays a vital role in our lives because of its uniqueness in properties and extended application in industries, packaging, sports, medicine, perfumes and preservatives, plastics, fuels, toys etc. PHB (Polyhydroxybutyrate) is a polymer belongs to polyesters group of Polyhydroxyalkanoate (PHA), which are used as bio-derived and biodegradable plastics. The use of PHB derived bioplastics are completely safe and do not have any chemicals or toxins. These plastics harmlessly breaks down by microbial consortia using depolymerase enzymes and gets absorbed into the earth. Such advantages of bioplastics are of extreme importance that could markedly increase as more durable versions are developed, and the cost to manufacture these bio-plastics continues to go fall. Moreover, it reduces the growing toxic plastic load on the earth that will be in favour of future generations. The biodegradable plastics market's immense growth will help drive the further evolution of a bio-economy in world.

Keywords: Biodegradable plastic; PHA; PHB; PHB depolymerase enzymes;