

## **ECONOMICALLY SOUND BIOBASED ALTERNATIVES TO PETROCHEMICALS USE OF CARBOHYDRATES AS RAW MATERIAL FOR CHEMICAL INDUSTRY**

**GEETANJLI DHAWAN**

Associate Professor, Head of the Department, Department of Zoology and Environment Studies, Arya P. G. College,  
Panipat, Haryana, India

### **ABSTRACT**

Chemical industry today is dependent on fossil raw material like coal, oil and natural gas although they are depleting and irreplaceable. By 2040, they would become so expensive that bio feed stocks will be an economically competitive alternative. The limitation in today scenario for transition to a more bio based production system is hampered by a variety of obstacles including the cost and technology to transform bio based raw material into product with industrial application profile. Compared to coal, oil and natural gas, terrestrial biomass is considerably more complex constituting sugar hydroxyl and amino acid, lipid and biopolymer such as cellulose, hemi cellulose, chitin, starch, lignin and protein. Among these, the most important class of organic compounds in terms of volume produce i.e. carbohydrates are worked out in the present study as they represent roughly 75% of annually renewable biomass of about 200 billion tonnes but only a minor fraction (4%) is used by man, the rest decay and recycle along natural pathways. Thus, carbohydrates are the industrially and economically viable organic chemical that would replace those derived from petrochemical sources and would constitute the major bio feed stocks aside from there traditional use for food, lumber, paper and heat.

**KEYWORDS:** Bio feed stocks, Chemical Industry, Terrestrial Biomass, Bio based Production System