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BIOFUELS FOR GREENER ENVIRONMENT

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Abstract
In current time global crisis is faced due to emission of carbon di oxide from the consumption of fossil fuels. The fossil fuels though are used for conventional fuel production are non-renewable sources of energy and need a replacement. Renewable sources like biofuels have low carbon emission and can be easily synthesised from biomass. The biofuels have sustainability and renewability properties that make them ideal candidates for greener environment. This chapter focuses on different generations of biofuels their production and other aspects.

Keywords: Biofuel, Conventional fuels, green environment

1.Introduction

The Earth is becoming more warmer year by year since 2016 due to use of non-renewable fuel sources as per the World Meteorological Organization (WMO, 2020). Due to rise in population and industrialization global energy demand will rise by 1.3% every year (Bradshaw,2010). Greenhouse gas emissions have impacted the climate changes and, on our health, too (Quam et al, 2017). In order to reduce this, biofuels are better alternative towards sustainable development. Bioethanol production was carried out by Henry Ford (Di Nicola et al ,2009). The most popular biofuels are bioethanol and biodiesel. Bioethanol can be obtained from corn and sugar cane used in otto cycle engines while biodiesel can be obtained from vegetable oils used for cycle engines. Biodiesel are used as fuels additives with petroleum diesel. Today CNG buses where biomethane is used is popular nowadays in India (Kapoor et al ,2020).

Biofuels have advantage as they reduce dependency on conventional petroleum products from other countries, they reduce carbon emissions and

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Nanopriming Approach to Sustainable Agriculture

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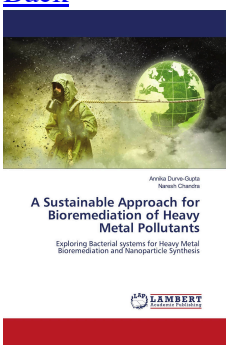

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Heavy metal pollutants are being released in rivers, soils, and the atmosphere, due to developing agribusiness and metallurgy industries, as well as fertilizers, and pesticides. They are non-biodegradable and can accumulate in living systems, contaminating the food chain. Physical and chemical heavy metal cleanup solutions are expensive and harmful to the surrounding ecology. Due to the proven capacity of microbes, especially bacteria, to sequester and convert pollutants, microbial bioremediation has emerged as a viable technique for reducing heavy metals in the environment. Microbes have developed several bioremediation techniques. These processes are distinct in their requirements, and benefits, and their effectiveness is determined by the type of microbe and toxins involved. Microbes can be widely used to produce nanoparticles due to their ease of handling and processing, the need for low-cost medium, simple scaling up, and economic feasibility with the capacity to adsorb and reduce metal ions into nanoparticles via metabolic processes. The use of renewable resources for metal reduction and nanoparticle biosynthesis provides a clean, non-toxic, and sustainable technique.

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Evaluation of medicinal properties of Butea monosperma (Lamk.) Taub.

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Butea monosperma (Lamk.) Taub. is one such medicinal plant commonly known as Palas (Flame of the forest) belonging to the family Fabaceae. It is distributed throughout India, except arid parts (Sharma et al., 2000). Butea monosperma (Lamk.) Taub. has various healing effects which are seen in treatment of many diseases. The information of Butea monosperma (Lamk.) Taub. is very meagre and hence it was thought of interest to undertake the present work to study antidiabetic, antimicrobial and antioxidant property of different plant parts of Butea monosperma (Lamk.) Taub.Anatomical features were studied by taking hand sections. Preliminary phytochemical analysis was carried for leaf, bark and flowers of Butea monosperma (Lamk.) Taub. TLC and HPTLC analysis was also performed. Colour dye from flowers was extracted using different polar and nonpolar solvents. Acute toxicity and Efficacy study of Butea monosperma (Lamk.) Taub. was carried out on Animal model as per OECD guidelines.Antimicrobial activity of leaf, bark and flower of Butea monosperma (Lamk.) Taub. was evaluated by using agar well diffusion method using Mueller Hinton agar against some gram positive and gram negative bacteria.

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