

*Commentary*

## Possibility of using agricultural waste as a future source of green energy

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### DESCRIPTION

Concerns about the environment and the depletion of conventional fuel resources have pushed researchers to look into alternative energy sources that are sustainable, renewable, and friendly to the environment. Worldwide, enormous amounts of agricultural biomass are produced, which can be converted to biofuels using a variety of techniques. However, issues such as environmental damages and competing uses of agriculture biomass need to be investigated factually considering the short as well as long-term acuity considering its effect on the soil and conversion to biofuels. This review provides an insight into the potential of various biomasses as an energy source. Presently available conversion techniques to convert biomass to energy in various phases are discussed.

The appropriate control measures to address the technical, socioeconomic, and environmental concerns and limitations. A techno-economic analysis shows that using agricultural biomass as a competitive energy source is feasible. Stakeholders, energy managers, and decision-makers involved in the sustainable and renewable energy sectors will find the information provided useful in considering agricultural biomass for energy production on a larger scale (Demirbas A, 2008). The supply of fossil fuels is limited and not renewable. Several studies note unmistakable signs of the depletion of fossil fuel reserves. Global recoverable oil reserves are reportedly declining at a rate of 4 billion tonnes annually. By 2060, all of these reserves are expected to have been used up, even if the current rate of depletion is assumed to continue. The deadline may be extended slightly if additional reserves are found before this point. The danger nevertheless still remains (Kumar M, et al. 2018). Therefore, in order to maintain our current standard of living, it is imperative to discover other alternative forms of energy. These energy sources are clean and reliable. Fossil fuels have a finite quantity and are not replenishable. Numerous studies document glaring indications

of the decline of fossil fuel supplies. According to reports, the world's recoverable crude stocks are shrinking at a pace of 4 billion tonnes per year. Even if the present rate of depletion is continued, all of these assets are anticipated to be depleted by 2060. In the event that extra reserves are discovered prior to this time, the limit may be marginally extended (Lal R, 2005). However, the threat is still present. Therefore, it is crucial to find new alternative sources of energy in order to preserve our present level of living. These energy sources are trustworthy and pure. Biofuels are a safe substitute fuel that can be used in a variety of diesel engines without typically requiring any motor modifications. As biodiesel produces fewer pollutants and is renewable compared to conventional diesel fuel, there is currently increasing interest in its use for biodiesel production. More than 50% of the energy consumption is being satisfied by green energy in Sweden, Denmark, and Poland (Sarkar N, et al. 2012). By the year 2024, Poland intends to generate this green energy from biomass, especially from agricultural biomass. There, a strong adoption of biomass for the production of biofuels for transportation and power generation is primarily responsible for the rising demand for green energy. At least 80% of the nation's energy needs will be met by sustainable sources, including bioenergy, according to Poland's plans. Agriculture-based biomass will supply more than 75% of all biomass electricity. By 2050, most industrialised nations' net energy consumption is expected to be met by energy sources based on biomass, according to reports. Agriculture waste could be used to make biofuels and improve future energy security without compromising the supply of sustenance (Smil V, 1999). It is vital to arrange the information on biomass consumption as a renewable and sustainable source because it is dispersed and sometimes repetitious. This information has been attempted to represent in studies in the past. Nevertheless, detailed information on the most recent techniques for producing biofuels is insufficient (Timbers GE, Downing CG, 1977). The primary goals of this study were to analyse and

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assess the existing level of the knowledge, identify prospective future research areas, and offer a comprehensive summary of the prior research on the notion of using agricultural biomass as a legitimate and renewable energy source. The report presents the current situation of global accomplishments, particularly in nations that are leading in the accomplishment of future goals.

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