

## Utilization of Agricultural waste for Biofuel production as an alternative approach

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### Abstract

In developing and underdeveloped countries, agriculture serves as a primary source of income and livelihood. The products from agriculture have multidimensional uses. The food and nonfood uses of agricultural products range from the provision of raw material to industry to the provision of byproducts for rural households. Agricultural waste apart from its uses has many limitations and poses challenges for the farming community. It can act as a carrier for insects, pests, and diseases that may result in future crop losses. In most of the developing world burning practice of crops, waste is commonly observed, which is not only harmful to human health and the environment but also affects the soil texture and its productivity. It is the need of time to use alternative ways to minimize these risks by constructively utilizing these crop residues. There are many traditional and modern methods for crop residue management like conservation agriculture practices, composting, animal feed additives, building material base, bioenergy resources, derived crops production, etc. Among all these practices, use for derived energy such as cooking, heating, biogas substrates is common in developing countries whereas bio-fuel production is the most utilized method among farmers of developed countries. Wastes from different crops like wheat straw, rice straw, and corn stover are the major raw material for biofuel production through different processes such as thermochemical, fermentation, gasification, distillation, and combustion. On-farm biofuel production is among the most appropriate interventions for rural households resulting in reduced expenses on energy sources, convenience in timely availability of resources, sustainability, and ease of use. In awake of rising fuel prices, the awareness and adoption of modern methods of biofuel/energy production will help to lessen the import burden and save costs for marginal households sustaining on agriculture income. Gradually, dependency on fossil fuels is increasing due to increasing population and industrialization while its excessive use is also damaging our environment. In this situation, bio-fuel is the best option. Biofuel also has the potential to provide cost-effective and suitable energy

**Key Words:** Agricultural waste, Biofuel, Bioenergy resources and crop residue management