



## Valorization of Wastes for Sustainable Development

Waste to Wealth

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# Chapter 4 - Mammals' dung and urine for fuel production

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## Abstract

Bioenergy has evolved as a potential energy source produced from biomass or recently living organic material. To limit the fossil fuel dependence, the energy from various organic wastes offers an opportunity to promote the renewable energy production. The main source for the production of liquid biofuels is from the edible crops and the waste generated from the edible crops is commonly used as feedstock. However, using edible plants as feed-stock for biofuels creates global food supply issues as well as ethical problems. In this context, the utilization of animal wastes, such as fecal matter and urine, in the production of biofuel is mainly emphasized. Poorly managed animal feces can expose humans to pathogens, especially in communities where animals live within proximity to humans. Environmental regulations that strictly control odor, groundwater and surface water contamination, soil pollution, and nutrient management, drive innovative waste management and disposal methods, offer further impulses for the use of animal manure in biomass-based fuel production. Also, the microbial fuel cells (MFCs), which are bioelectrochemical systems that generate current, have a huge potential as a green and sustainable bioenergy conversion

technology that uses waste, such as urine, as a raw material. This review describes the recent advancements in biofuel production from animal wastes, urine-fed microbial fuel cells, and other prospects.

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