

Conversion of Kitchen Waste into Biogas

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Abstract

Facing energy crisis and climate change, the world is in need of a green, efficient, carbon- neutral energy source to replace fossil fuels. The search for energy alternatives involving locally available and renewable resource is one of the main concern of governments, scientists, and business people worldwide. Biogas, formed by anaerobic digestion of organic materials, makes sustainable, reliable and renewable energy possible. There is potential for biogas production from kitchen waste, and at the same time the waste themselves can be treated to minimize the environmental impact and provide nutrient rich organic fertilizer. The study's main objective was to design an anaerobic digester which utilizes food waste to generate biogas for use in Kabete Technical Training Institute's (KTTI) kitchen. The institute's main source of energy was mainly wood fuel, supplemented with liquefied petroleum gas (LPG) which is very expensive. The amount of waste generated from the kitchen was found to be of sufficient quantity to generate enough biogas for use in the kitchen hence the level of biogas production would in turn mean that this technology could be a viable investment for the institute to make.

Keywords: Biogas, organic waste, anaerobic, aerobic, organic fertilizer.

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