

Methane Production from Biomedical Waste (Blood)

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Abstract : This study investigates the production of renewable energy (biogas) from biomedical hazard waste (blood) and eco-friendly disposal. Biogas is produced by the bacterial anaerobic digestion of biomaterial (blood). During digestion process bacterial feeding result in breaking down chemical bonds of the biomaterial and changing its features, by the end of the digestion (biogas production) the remains become manure as known. That has led to the economic and eco-friendly disposal of hazard biomedical waste (blood). The samples (Whole blood, Red blood cells 'RBCs', Blood platelet and Fresh Frozen Plasma 'FFP') are collected and measured in terms of carbon to nitrogen C/N ratio and total solid, then filled in connected flasks (three flasks) using water displacement method. The results of trails showed that the platelet and FFP failed to produce flammable gas, but via a gas analyzer, it showed the presence of the following gases: CO, HC, CO₂, and NOX. Otherwise, the blood and RBCs produced flammable gases: Methane-nitrous CH₃NO (99.45%), which has a blue color flame and carbon dioxide CO₂ (0.55%), which has red/yellow color flame. Methane-nitrous is sometimes used as fuel for rockets, some aircraft and racing cars.

Keywords : renewable energy, biogas, biomedical waste, blood, anaerobic digestion, eco-friendly disposal

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