

COMPARATIVE ASSESMENT OF POULTRY DROPPINGS/LITTER AND SWINE FAECES AS FEEDSTOCK FOR BIOGAS PRODUCTION

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Abstract

The potential of poultry droppings and swine faeces as a source of feedstock for biogas production was investigated. Trials were carried out with broiler and laying chickens, boars (male pigs), gilts (female pigs and sow with piglets, all reared on deep litter. Out-put, proximate chemical composition, microbial population, carbon to nitrogen ratio and gross energy values of the broiler and layer droppings and pig faeces were determined. Results showed that the daily fecal output were 1.36kg, per boar, 1.13kg per gilt and 0.36kg for piglets while those of broiler and layer chickens were 0.194kg and 0.083 kg per bird respectively. The average nitrogen contents, on as collected basis, of broiler and layer droppings, and swine faeces were 1.29%, 1.32% and 0.95% respectively and these translate to crude protein contents 8.09%, 8.38% and 5.85 respectively. The carbon contents of broiler litter, layer litter and swine faeces (on 'as is' basis) were 17.9%, 22.7% and respectively while the C:N ratios were 14:1, 18:1 and 12:1 respectively. The gross energy values (mJ/kg) were (as collected) 6.5, 5.9 and 6.0, respectively for broiler litter, layer litter and pig faeces or 9.3, 7.6mJ/kg and 14.6 respectively on dry matter basis. The microbial populations (cfu/ml) were 5.4×10^3 , 7.2×10^3 and 10.2×10^3 respectively broiler droppings, layer droppings and pig faeces. Some data are also available on the type and distribution of the bacterial population in the poultry droppings and pig faeces.
