

ABSTRACT

The classification and characterization of solid waste is important in order to plan for long term and design solid waste management of efficient and economical systems. Such systems includes the selection and operation of equipment for treatment and handling of waste, types of disposal facilities that will allow energy generation and resource recovery. The major waste management problems identified from Egerton University and its environs were poorly designed collection bins, inappropriate bin locations, inadequate labour for collection and transportation of waste lack of appropriate waste treatment and disposal facilities. Wastes were classified into four different categories as per their sources which were domestic/residential, agricultural, institutional/industrial and commercial. Wastes were characterized based on Moisture Content (MC), ash content, Volatile Matter (VM), fixed carbon, density and calorific value. The MC was obtained by weighing a container when empty and with waste sample, placing it in a drier for 12 hours at 102oC and reweighing it when cold. The VM was determined by putting a sample into weighed crucible, placing it into a furnace at 950oC for 10 minutes and recording the weight when cold. The mean values of various parameters were: moisture content 37%, ash content 12%, volatile matter 42%, fixed carbon 9%, density 232kg/m³, and calorific values 10MJ/kg. Since the waste had high calorific values and volatile matter, then it could be used for waste to energy methods. Key Words: Ash content, Calorific value, Characterization, Classification, Density, Moisture content, Solid waste and Volatile matter