ABSTRACT

In this work, the effect of compacting pressure on fuel properties of finger millet briquettes was investigated and reported. Four different varieties of finger millet namely P224, Gulu-E, U-15 and Okhale-1 were used to produce briquettes without a binder using manual hydraulic press at predetermined compacting pressure of 15, 25 and 35MPa. The proximate analysis results of the resultant briquettes was between 68-70% volatile matter, 21-24% fixed carbon, 9-11% moisture content and 7-8% ash content which is comparable with those of other biomass materials such as rice, wheat and wood. On the effect of compacting pressure on fuel properties, the study showed an increasing trend in briquette density and compressive strength as compacting pressure increased from 15 to 35MPa. However, as compacting pressure increased, the burning rate decreased due to reduced air voids in the briquettes thus limiting mass and heat transfer during combustion.

Keywords: Burning rate, Briquettes, Compacting Pressure, Density, Finger Millet straws.