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Characterization of Rice Husk Pellet produced from a Pellet Mill

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Abstract. Agricultural residues as biomass materials are become a reliable and renewable local energy source, which converted to value added product. Densifications process are effective for biomass conversion technique due to increase the properties of solid biofuel. The inquisitiveness of rice husk pellets, produced from the ring die pelletizing mill was the main aim of this research work. The chemical compositions, proximate analysis, calorific values, physical and mechanical properties of solid biofuels have examined and compared with the ISO 17225-6 standard. The results have shown that bulk density of rice husk to produced rice husk pellet increased 4.5 times and the durability of manufactured rice husk pellet was 99 %. The wet basis of ash content in solid biofuels (16.1 %) was higher than that of the ISO guidelines due to ash forming constituents mainly 96.06 % of silica in rice husk. In addition, energy density of produced rice husk pellet has also increased due to rise of bulk density, and calorific value, respectively. The durability of produced rice husk pellet was conformity with the ISO standard from herbaceous biomass but the bulk density was slightly lower than the specification of standard.

Keywords: ISO standards, Physicomechanical properties, Pellet mill die, Rice husk pellet