PENGARUH VARIASI JUMLAH CAMPURAN ARANG JERAMI TERHADAP KARAKTERISTIK BRIKET GAMBUT PLUS

Oleh: MUHAMMAD ZIA HAKIKI (08510116)
Mechanical Engineering
Dibuat: 2010-09-23 , dengan 7 file(s).

Keywords: Pengaruh, Karakteristik, Gambut, Arang Jerami

Potensi biomassa tanah gambut dan jerami sebagai sumber energi alternatif sedemikian melimpah, namun belum terolah sepenuhnya. Berawal dari hal tersebut maka peneliti mengajukan penelitian mengenai pengolahan biomassa tanah gambut dengan campuran arang jerami guna diolah menjadi bahan bakar alternatif berupa biobriket. Penelitian ini bertujuan untuk mengetahui seberapa besar pengaruh campuran arang jerami terhadap karakteristik briket gambut plus yang meliputi nilai kalor, kadar air, kadar abu, dan kadar karbon. Dalam penelitian ini komposisi yang di uji adalah biobriket dengan perbandingan persentase tanah gambut : arang jerami ; 90%:10% ; 70%:30% ; 50%:50% ; 30%:70% ; 10%:90% . Penelitian awal dilakukan dengan pengumpulan, pengeringan, penghalusan, dan pencampuran bahan baku (tanah gambut, arang jerami dan perekat), selanjutnya dilakukan pengepresan dengan tekanan 400 kgf. Pengujian untuk mendapatkan karakteristik briket gambut plus dilakukan di laboratorium untuk mengetahui besarnya nilai kalor, kadar air, kadar abu, dan kadar karbon, kemudian dilanjutkan dengan menganalisa perubahan karakteristik briket gambut plus. Berdasarkan analisa yang telah dilakukan, ternyata perbedaan komposisi arang jerami pada briket gambut plus memberikan pengaruh berbeda terhadap karakteristiknya. Arang jerami berpengaruh baik terhadap nilai kalor, kadar air, dan kadar karbon. Semakin banyak campuran arang jerami, maka semakin baik nilai kalor, kadar air, dan kadar karbon. Namun faktor campuran arang jerami berpengaruh kurang baik terhadap kadar abu. Semakin banyak jumlah campuran arang jerami, akan menjadikan semakin buruk kadar abu briket gambut plus.

Potential of peat and straw biomass as alternative energy sources so abundant, but not fully processed. Starting from these conditions, the researchers propose research on processing biomass with a mixture of peat, charcoal, straw to be processed into alternative fuels such as biobriket. This study aimed to know how big influence on the characteristics of a mixture of rice straw charcoal briquette peat plus which includes the heating value, moisture content, ash content and carbon content. In this study the composition of the test is biobriket by comparing the percentage of peat soil: charcoal straw ; 90%: 10%, 70%: 30%, 50%: 50%, 30%: 70%, 10%: 90%. Preliminary research done by collecting, drying, refining, and mixing of raw materials (peat, charcoal, rice straw and gluten), subsequently pressed with a pressure of 400 kgf. Tests to obtain characteristics of peat briquettes plus conducted in the laboratory to know the value of heat, moisture, ash, and carbon content, followed by analyzing changes in the characteristics of peat briquettes plus. Based on the analysis has been done, it turns out differences in the composition of charcoal briquettes, peat plus rice straw at different effect on its characteristics. Straw was the best charcoal calorific value, moisture content, and carbon content. More and more straw charcoal mixture, the better calorific value, moisture content, and carbon content. However, a mixture of charcoal, straw influential factors unfavorable to the ash content. The

greater the number of charcoal mixed hay, will make worse the ash content of peat briquettes plus.