

PENGARUH VARIASI KONSENTRASI PEREKAT TAPIOKA TERHADAP KUALITAS BIOBRIKET BERBASIS SERABUT DAN TANDAN BUAH SIWALAN

SKRIPSI

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ABSTRAK

Energi yang berasal dari biomassa, seperti limbah serabut dan tandan buah siwalan yang selama ini dibuang tanpa adanya pemanfaatan lebih lanjut, merupakan limbah yang dapat dimanfaatkan sebagai sumber energi alternatif pengganti bahan bakar fosil. Menggunakan limbah serabut dan tandan buah siwalan dengan cara mengubah limbah tersebut menjadi biobriket. Tujuan dalam penelitian ini adalah untuk mengetahui pengaruh variasi konsentrasi perekat terhadap kualitas biobriket berdasarkan uji proksimat yang meliputi kadar air, kadar abu, kadar zat terbang, kadar karbon terikat serta uji nilai kalor. Berdasarkan pengujian yang dilakukan pada pengujian kadar air terendah dengan persentase 5% sebesar 4.87%, dan untuk kadar air persentase 20% sebesar 6.73%. Persentase kadar abu terendah pada persentase 20% sebesar 28.67%. Sedangkan, kadar abu tertinggi dengan persentase 5% sebesar 45.67%. pada kadar zat terbang terendah dengan persentase 5% sebesar 16.61% dan tertinggi 22.17%, pada karbon terikat terendah dengan persentase 5% sebesar 32.85%, yang tertinggi 42.35%. pada pengujian nilai kalor terendah didapatkan persentase 5% sebesar 4500.44 kal/gr, dan tertinggi persentase 20% sebesar 4823.67 kal/gr. Sedangkan, untuk pengujian waktu penyalaan awal semakin lama selama 306 detik pada konsentrasi 20% dan laju pembakaran yang dihasilkan semakin rendah sebesar 0.115 gram/menit pada konsentrasi perekat 20%.

**Kata Kunci: Biobriket, Energi, Serabut Siwalan, Tandan Buah Siwalan,
Proksimat**

VARIATION OF TAPIOCA ADHESIVE CONCENTRATION ON BIOBRIQUETTE-BASED QUALITY OF FIBER AND PALMYRA FRUIT BUNCH

THESIS

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ABSTRACT

Energy derived from biomass, such as fibrous waste and palm fruit bunches which has been disposed of without further utilization, is waste that can be used as an alternative energy source to replace fossil fuels. Using waste fibers and palm fruit bunches by changing the waste into biobriquette. The purpose of this study was to determine the effect of variations in the concentration of the adhesive on the quality of biobriquettes based on proximate tests which include water content, ash content, levels of flying substances, bound carbon content and heat value test. Based on testing conducted on the lowest water content test with a percentage of 5% by 4.87%, and for the water content percentage of 20% of 6.73%. The lowest ash content percentage at a percentage of 20% is 28.67%. Whereas, the highest ash content with a percentage of 5% is 45.67%. at the lowest levels of flying matter with a percentage of 5% at 16.61% and the highest at 22.17%, at the lowest carbon bound with a percentage of 5% at 32.85%, the highest at 42.35%. in testing the lowest heating value obtained a percentage of 5% at 4500.44 cal / gr, and the highest percentage of 20% at 4823.67 cal / gr. Meanwhile, for testing the initial ignition time is longer for 306 seconds at a concentration of 20% and the resulting combustion rate is lower at 0.115 grams / minute at a concentration of 20% adhesive

Keywords: Biobriquette, Energy, Siwalan Fibers, Siwalan Fruit Bunches, Proximate