Pengaruh Perekat Daun Biduri (*Calatropis gigantea*) pada Briket Tongkol Jagung dengan Penambahan Plastik *Low Density Polyethylene.* *(The Effect of Biduri Leaf Adhesive (Calatropis gigantea) on Corncob Briquettes with the Addition of Low Density Polyethylene Plastic*). Supervised by: Zeni Ulma, SST., M.Eng.

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ABSTRACT

The most wide energy used in Indonesia is fossil fuels. However, this energy source has a detrimental impact on the environment. The way to reduce the use of fossil fuels is to use alternative energy sources, namely biomass. Briquetting is one of the development of biomass. This research aims to analyze the effect of biduri leaf adhesive (Calatropis gigantea) on corncob briquettes with the addition of low density polyethylene plastic and to analyze the characteristics of briquettes made from corncobs with the addition of low density polyethylene plastic using biduri leaf adhesive (Calatropis gigantea) based on SNI briquettes No. 01/6235/2000. The corncob carbonization process used a temperature of 300-400°C for approximately 4 hours. In this research, were made five compositions of biduri leaf adhesive variations there are 15%, 20%, 25%, 30%, and 35% of the total mass of the briquettes (30 gr). The composition of corncob with low density polyethylene (LDPE) plastic is constant at 70% : 30%. The results showed that the best composition complied with SNI Briquettes No. 01/6235/2000 at V1 (15% adhesive) with a moisture 2.947%, ash content 6.790%, volatile matter 3.536%, fixed carbon 86.727%, calorific value 7216.649 cal/g, density 0.932 gr/cm^3, and density of kamba 0.326 gr/cm^3.

Key word*: Biduri Leaves, Briquettes, Carbonization, Corncob, LDPE Plastic.*

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ABSTRAK

Sumber energi utama di Indonesia adalah fosil. Akan tetapi sumber energi ini berdampak merusak lingkungan. Salah satu cara mengurangi penggunaan bahan bakar fosil adalah dengan menggunakan sumber energi alternatif yaitu biomassa. Pembriketan merupakan salah satu pengembangan biomassa. Penelitian ini bertujuan untuk menganalisis pengaruh perekat daun biduri (*Calatropis gigantea*) pada briket tongkol jagung dengan penambahan plastik LDPE dan menganalisis karakteristik briket berbahan baku tongkol jagung dengan penambahan plastik *low density polyethylene* menggunakan perekat daun biduri (*Calatropis gigantea*) berdasarkan SNI briket No. 01/6235/2000. Proses karbonisasi tongkol jagung menggunakan temperatur sebesar 300-400°C dalam waktu kurang lebih 4 jam. Penelitian dibuat lima komposisi variasi perekat daun biduri yaitu 15%, 20%, 25%, 30%, dan 35% dari total massa briket (30 gr). Komposisi tongkol jagung dengan plastik *low density polyethelena* (LDPE) konstan yaitu 70% : 30%. Hasil penelitian didapatkan komposisi terbaik yang telah memenuhi SNI briket No. 01/6235/2000 terdapat pada V1 (perekat 15%) dengan kadar air 2,947%, kadar abu 6,790%, *volatile matter* 3,536%, kadar karbon terikat (*fixed carbon*) 86,727%, nilai kalor 7216,649 kal/g, densitas 0,932 gr/cm^3, dan densitas kamba 0,326 gr/cm^3.

Kata kunci : Daun Biduri, Briket, Karbonisasi, Tongkol Jagung, Plastik LDPE.