

Pinatih, T.A., 2015. Potensi Briket Bioarang Dari Kulit Umbi Singkong dan Lumpur Instalasi Pengolahan Air Limbah Industri. Skripsi ini di bawah bimbingan Dr. Eko Prasetyo Kuncoro, S.T., DEA dan Nita Citrasari, S.Si., M.T. Program Studi S-1 Ilmu dan Teknologi Lingkungan, Departemen Biologi, Fakultas Sains dan Teknologi, Universitas Airlangga.

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## ABSTRAK

Penelitian ini bertujuan untuk mengetahui hasil uji mutu briket bioarang yang terdiri atas kadar air, kadar abu, kadar kalor, dan uji nyala berdasarkan uji ketahanan dan mengetahui kesesuaian emisi yang dikeluarkannya dengan standar nilai dalam Peraturan Pemerintah ESDM No 47 Tahun 2006. Metode yang digunakan mencari komposisi terbaik berdasarkan uji *stability* dan ketahanan. komposisi terbaik kemudian diuji kadar kalor, kadar abu, nyala api dan kadar airnya untuk mendapatkan komposisi terpilih. Komposisi terpilih kemudian digunakan untuk menguji emisi gas Nitrogen Oksida (NO<sub>2</sub>). Hasil penelitian uji mutu briket berdasarkan kuat tekannya untuk kadar air briket bioarang karbonasi antara 3,8% - 4,5% dan briket bioarang non karbonasi antara 5,2% - 7,6%. Kadar abu briket bioarang karbonasi antar 5,30% - 7,40% dan briket bioarang non karbonasi antara 6,86% - 7,46%. Kadar kalor briket bioarang karbonasi antara 578,2 kalori/gram - 1837,7 kalori/gram dan briket bioarang non karbonasi antara 858,1 kalori/gram - 891,1 kalori/gram. Uji nyala briket bioarang karbonasi antara 48 - 63 menit dan briket bioarang non karbonasi antara 22 - 42 menit. Emisi yang dihasilkan dari briket bioarang untuk komposisi karbonasi dan non karbonasi sesuai dengan Peraturan Pemerintah ESDM No. 047 tahun 2006 yaitu, sebesar 128 Mg/Nm<sup>3</sup> dan 139 Mg/Nm<sup>3</sup>.

**Kata kunci** : Briket Bioarang, Kulit Singkong, Lumpur Industri, Kadar Air, Kadar Abu, Kadar Kalor, NO<sub>2</sub>

*Pinatih, T.A., 2015. Briquettes potential Bioarang Of Leather Cassava tubers and Mud Wastewater Treatment Industry. This work was supervised by Dr. Eko Prasetyo Kuncoro, S.T., DEA and Nita Citrasari, S.Si., M.T. Environmental Science and Technology, Department of Biology, Faculty of Science and Technology, Airlangga University.*

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### **ABSTRACT**

*This research purposed to determine the quality of briquettes moisture content, ash content, calorific content, and burned test based on compressive strength as well as determined whether or not the corresponding emissions released briquettes bioarang selected with government regulations ESDM No. 047 of 2006. Methods that used was looking for the best composition based on test stability and durability. The best compositions was tested by calorific content, ash content, and water content to got the chosen composition. Selected compositions that used to test the emissions of Nitrogen Oxides (NO<sub>2</sub>) emitted during combustion. Briquette quality test results based on compressive strength for briquettes bioarang carbonated water content between 3.8% - 4.5% and non-carbonated briquettes bioarang between 5.2% - 7.6%. Bioarang carbonation briquette ash content was between 5.30% - 7.40% and non-carbonated briquettes bioarang was between 6.86% - 7.46%. Bioarang carbonation levels briquettes heated between 578.2 calories / gram - 1837.7 calories / gram and non carbonated briquettes bioarang between 858.1 calories / gram - 891.1 calories / gram. Carbonated bioarang burned test was between 48 - 63 minutes and non-carbonated bioarang was between 22 - 42 minutes. Emissions resulted from the briquettes bioarang for carbonated and non carbonated composition according to the government regulations ESDM No. 047 of 2006 which, at 128 mg/Nm<sup>3</sup> and 139 mg/Nm<sup>3</sup>.*

**Key words:** *Briquette Bioarang, Leather Cassava, Mud Industry, Water Content, Ash Content, Heat Content, NO<sub>x</sub>*