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Biodrying proccess in pre-treatment of foodcourt waste converted to refuse derived fuel (rdf) obtained as raw material from shopping center in Bandung city: Reduction of water content

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Infrastructure development, economic growth, and population explosion is causing crucial issues, one of that is waste problem. The problem of waste in Indonesia worsened with the estimates that only about 60% of waste in big cities is transported to the final processing area (TPA), through the landfilling as main operation. One of the renowned eating places (foodcourt) in Bandung was selected as area of study. With total of ± 66 stores, the prediction of waste generated total in 2016 amounted to 622.46 kg/day with major prediction of compositions 37.01% plastics, 36.03%, organics, and 20.35% papers. The amount of waste generated makes the production of RDF (Refuse Derived Fuel) potentially as one of the alternative waste treatment, though with characteristic of high water content which inturn needed drying method. For that, study was conducted to determine the feasibility of pre-processing methods through biodrying as efforts to use RDF as raw material. The study was conducted through sampling, field testing by making variations aerated, windrow, control pile, and laboratory tests. As a result, the water content was reduced from 60.42% to 8.35% for the aerated, from 61.68% to 8.55% for the windrow, and from 64.91% to 6.86% for the control. This condition increased the calorific value and also reduced the mass of waste, which inturn reduced the usage of land, reduced environmental pollution load and the financial burden, even can be used as an alternative fuel commodities.

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