ABSTRACT

The handling and utilization of plastic waste is still not optimal. The volume of plastic waste continues to increase as the population increases. Plastic waste is a source of environmental pollution that is difficult to degrade. The purpose of this research is to study the processing of plastic and lignocellulosic waste into other products, namely biocomposite briquettes as fuel that can be used as an alternative energy source. The plastic waste used is snack packaging. These materials will be mixed with each type of lignocellulose in the form of coconut coir, corn cobs and straw with the addition of an additive, namely tapioca flour. The briquettes were sieved using a sieve with an opening size of 250-500 mm and molded using a hydraulic press with a pressure of 200 kg/cm2 for 10 minutes and dried using an oven at 90°C for 30 minutes to reduce air content. After that, the briquettes were tested by looking at the calorific value, ash mass, trigger time and duration of the flame that would be produced using a bomb calorimeter, binder oven dryer, and gasification stove.

Keywords: Plastic Waste, Calorific Value, Lignocellulosic, Bomb Calorimeter, Trigger time, Oven