

ENERGETIC CHARACTERIZATION OF PINUS SAWDUST AND SUGARCANE STRAW BLENDS FOR BRIQUETTES MANUFACTURING

Annually, in Brazil, there is around 14 million tons of agricultural and forest by products being disposed as fuel without any processing. The aim of this study is to energetically characterize sugarcane straw and *Pinus* sawdust as two potential biomasses for briquettes manufacturing. According to the results, *Pinus* sawdust has shown the highest volatile matter (90.43%) and fixed carbon (9.16%), while sugarcane straw has presented the highest value of ash content (7.47%). Solid fuels from biomass tend to present between 76% and 86% of volatile matter, in dry basis. That means that the higher this value is, the more fuel it will be needed to keep the efficiency onto boilers. In addition, fixed carbon is said as the main contributor of the energetic yield onto boilers. The lower fixed carbon is, the faster briquettes will burn. Finally, ash content is also considered another important component that directly affects the calorific power of biofuels. Fuels which release lower levels of ash are taken as the best in terms of quality and amount of energy provided. When these three factors are combined, they can potentially affect the way the biomass burns. Therefore, it was observed that *Pinus* sawdust has presented the best results between the two biomasses studied. Thus, *Pinus* sawdust, when mixed to sugarcane straw, can add up important properties for manufacturing briquettes.

Keywords: keyword 1, keyword 2, keyword 3.

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