ABSTRACT

Palm oil is the main plantation sector in West Kalimantan and the largest foreign exchange earner in Indonesia. This industry is growing in its production accompanied by an increase in the volume of waste. Among them, solid waste has not been used optimally and can be processed (pyrolyzed) into products of economic value (bio-oil) which then become chemical raw materials and fuels. In the research on the pyrolysis of palm oil solid waste into bio-oil using operating time variables (60, 90, 120, 150, 180 minutes) and the type of solid waste (shell, midrib and empty bunches) at a constant temperature of 350°C. The results of pyrolysis (bio-oil) with the highest yield of 17.43% were found in midrib with a pyrolysis time of 120 minutes with the lowest pH of 2.66. The highest total phenol bio-oil was produced by shell, which was 15.35%. This proves that the longer the pyrolysis time, the higher the yield value of bio-oil, as well as variations in solid waste that affect the pH and phenol values of bio-oil.

Keywords: Bio-Oil, Palm Oil Waste, Pyrolysis, Yield