Penggunaan Adsorben Abu Sekam Padi Pada Proses Pra Transesterifikas*i* Pembuatan Biodiesel Dari Minyak Jelantah *(Use of Rice Husk Adsorbent Abu Pre TransesterifikasProcessi Biodiesel From Used Cooking Oil)*

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ABSTRACT

Biodiesel is a biofuel made from vegetable and animal oils, through the process of transesterification, esterification. Used cooking oil is one of the raw materials that has the potential to be used as biodiesel. However, the FFA level of used cooking oil is quite high due to repeated heating of the cera, so it is necessary to carry out a process of reducing the FFA level before the transesterification process is carried out. In this study, the pre-transesterification process of reducing FFA levels used the adsorption method using rice husk ash as adsorbent with the aim of knowing the effect of rice husk ash adsorbent on the process of reducing FFA levels and how to characterize the biodiesel produced. This study used a completely randomized design (CRD) with two factors, namely the mass of rice husk ash (M) (5%, 10%, and 15%) and the mixing time (T) (45 minutes, 90 minutes, 135 minutes). The biodiesel characterization parameters analyzed included density, acid, iodine number, cetane number, calorific value, methyl ester content and viscosity according to SNI 7182 – 2015. The results of this study showed that the lowest FFA was 0.14% in the M3T3 variation (15 %, 135 minutes) with the following biodiesel quality: density 882.22 kg/m^3, acid number 0.382 mgKOH/g, iodine number 8.87 g/100g, cetane number 44,601, calorific value 48,542 Mj/Kg, methyl ester content 107.82%, viscosity 4.01 cSt.

Key words: *Rice Husk Ash Adsorbent, Biodiesel, Cooking Oil, Decrease in FFA*