

Penurunan Kadar FFA (*Free Fatty Acid*) pada Minyak Jelantah dengan Adsorben Tongkol Jagung sebagai Bahan Baku Biodiesel (*Reduction of FFA (Free Fatty Acid) Levels in Used Cooking Oil with Corn Cob Adsorbent as Biodiesel Raw Material*)

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ABSTRACT

The reduction of FFA content in used cooking oil as a raw material for biodiesel is generally carried out through an esterification reaction. Another method that can be used to reduce FFA levels is the adsorption method. The adsorbent used was corncob waste. This study aims to determine the effect of corncob adsorbents and the adsorbent activation process on the decrease in FFA levels. This study used a 2 factorial with 4 treatment levels each. The first factor is the mass of the adsorbent (m) with variations (5% m/v , 10% m/v , 15% m/v , and 20% m/v). The second factor is the adsorption time (t) with variations (70 minutes, 90 minutes, 110 minutes and 130 minutes). If there is a difference in the average of the test results, it is continued with the DMRT (Duncan's Multiple Range Test). The test parameters performed included FFA content, acid number, and density. The results of this study showed that the lowest FFA content after the adsorption process was in the $m3t3$ variation (15% m/v , 110 minutes) of 0.886%. The acid number is 2.113 mgKOH/g and the density is 898.6 kg/m³.

Key words: *corncob adsorbent, adsorption, FFA, used cooking oil*