

**Penggunaan *Bottom Ash* Pltsa Bantar Gebang Sebagai Adsorben Pada Minyak Jelantah Bahan Baku Biodiesel (*Use of Bottom Ash PLTSA Bantar Gebang as an adsorbent on Used Cooking Oil Biodiesel Raw Material*)**

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**ABSTRACT**

*The reduction of FFA levels in used cooking oil as a biodiesel raw material is generally done by the esterification process. Another method that can be used to reduce FFA levels is through the adsorption method. The adsorbent used is bottom ash waste. This study aims to determine the effect of bottom ash adsorbent variation and determine the best variation based on Taguchi analysis. This research uses Taguchi data processing technique with 2 factors and 3 levels. The first factor is adsorbent mass with variations (5% m/v, 10% m/v, and 15% m/v). The second factor is the length of adsorption time with variations (30 minutes, 60 minutes, and 90 minutes). The testing parameters included FFA content, acid number, density, and viscosity. The results of this study were analyzed using the Taguchi method which showed that the best variation of adsorbent mass and time for FFA content was 15% m/v adsorbent mass variation and 60 minutes adsorption time which could reduce FFA by 35.2%, the best variation for acid number parameter was 15% m/v adsorbent mass variation and 90 minutes adsorption time with a percentage reduction in acid number of 35.2%, and the best variation for viscosity value was 10% m/v adsorbent mass variation and 60 minutes adsorption time with a percentage reduction in viscosity of 39.9%.*

**Key words:** *adsorbent, adsorption, bottom ash, cooking oil, FFA*