

## ABSTRACT

Cooking oil is one of Indonesia's necessities. Between 2015 and 2020, palm cooking oil consumption, especially at the household level, increased yearly, according to the results of the National Socio-Economic Survey (SUSENAS). However, Indonesian people have a habit of using cooking oil repeatedly, which can be caused by saving existing cooking oil stocks, and in general, people do not know the limit of cooking oil usage. Used cooking oil often used in cooking can experience quality degradation, characterized by an increase in peroxide number indicating oxidation. This study aims to reduce the peroxide number and free fatty acids by using trembesi twig waste charcoal as an adsorbent of peroxide number obtained from routine pruning of trembesi tree branches, then divided into three parts, namely trembesi without being made into charcoal, trembesi charcoal which is still in shape, and trembesi charcoal powder. The method used in this research is an experiment with quantitative analysis and through four tests in the form of color, odor, free fatty acid, and peroxide number tests. The best results of fatty acid reduction were when MRT was soaked with BAT and AT 6 hours which had an effectiveness of 67%, MG was soaked with BAT and AT 6 hours with an efficacy of 77% reduction, and 67% in MPC. Meanwhile, the best results of reducing peroxide number were when the three oil samples were soaked with BAT for 6 hours which had an effectiveness of 62% in MRT, 69% in MG, and 80% in MPC.

Keywords: Free Fatty Acid, Peroxide Number, Cooking Oil, Used Cooking Oil, Trembesi.