

*Analysis of Citronella Oil Mixture with Peralite Fuel on Octane Value and  
Calorific Value*

by  
**Muhamad Agel Faruq**  
Study Program of Automotive Engineering Majoring of Engineering  
The State Polytechnic of Jember

**ABSTRACT**

*In this study to reduce the use of fuel, then conduct a follow-up study to find out about the availability of bioadditives as a fuel mixture to reduce the use of fuel which is increasingly reducing fuel because it encourages users of gasoline motorized vehicles. The method used in this research is the mixing of citronella oil with peralite fuel which is carried out in several comparisons. . Comparison citronella oil with peralite, among others (1000 ml of pure peralite), (1000 ml of peralite + 2.0 ml of citronella oil), (1000 ml of peralite + 2.5 ml of citronella oil), (1000 ml of peralite + 3.0 ml of citronella oil), (1000 ml of peralite + 3.5 ml of citronella oil), (1000 ml of peralite + 4.0 ml of citronella oil), (1000 ml of peralite + 4.5 ml of citronella oil) (1000 ml peralite + 5.0 ml citronella oil). The result of this study is that the addition of citronella oil bioadditive to the fuel can increase the octane value in each mixture with an octane value of a mixture of MSW 2.0 ml and 2.5 ml with a RON of 93.5, while for a mixture of MSW 3.0 ml and 3. ,5 ml produces RON 93.6, and with a mixture of 4.0 ml and 4.5 ml, 5.0 ml produces RON 93.7, so each mixture of citronella oil can increase the octane number of pure peralite which has RON 90. Research results the calorific value of pure peralite without a mixture of citronella oil has a calorific value of 59983.93 cal/gr and the highest calorific value is obtained in a mixture of 5.0 ml citronella oil with a calorific value of 91728.39 cal/gr, and in each mixture of citronella oil, the relative increase in heat*

**Keyword :** *Citronella Oil, Peralite, Octane number, Calorific number*