ABSTRACT

The problem of energy sufficiency in the future is a problem that will be faced sooner or later. Fossil energy is getting depleted, but energy needs are always increasing every year, which is the reason why Indonesia must continue to improve in the energy sector. One alternative to overcome these problems is the use of hydrogen. Hydrogen utilization can be done using a hydrogen reactor. Alternatives to overcome these problems are the use of hydrogen and the use of additives. Hydrogen utilization can be done using a hydrogen reactor. This study analyzes the results of fuel consumption after using additives on fuel consumption in terms of variations in the volume of additives and types of fuel. After adding additives to the combustion engine with a hydrogen reactor, both additives showed a decrease in fuel consumption. Each fuel has a different optimal percentage of bio additives. In essential oil bioadditives, the efficiency level is 66.3% with the percentage of essential oil bioadditives 0.08 to 0.2%. While the VCO bioadditive reached an efficiency level of 52.8% with a percentage of 1% VCO bioadditive. The type of fuel also shows the effect on fuel consumption. Essential oil bioadditives bind oxygen better in fuels with a small RON (RON 90). Meanwhile, the VCO bio additive minimizes the combustion residue better on fuels with the highest RON value (RON 98).

Kata Kunci: *Motor Fuel, Hydrogen Reactor, Additives.*