

**Unjuk Kerja Mesin Diesel Dan Pengujian Cetane Number Campuran Dexlite
Dan Minyak Diesel Limbah Oli**

*(Diesel Engine Performance and Cetane Number Testing of a Mixture of
Dexlite and Diesel Oil Waste)*

Commission Guide, Ahmad Rofi'i, S.Pd, M.Pd

Ridwan Efendi

Study Program of Automotive Machinery

Department of Engineering

Program Studi Mesin Otomotif

Jurusan Teknik

ABSTRACT

This research aims to determine the effect of adding waste diesel oil to dexlite fuel on the cetane number and performance. The method used in this research is an experimental method, namely by comparing the percentage of dexlite fuel mixture and waste diesel oil, including 10% (Dexlite 100% with waste diesel oil 0%), B10% (Dexlite 90% with waste diesel oil 10%), B20% (Dexlite 80% with 20% waste oil diesel oil), and B30% (Dexlite 70% with 30% waste oil diesel oil). The results showed that the addition of diesel oil, waste oil mixed into dexlite fuel, could increase the cetane number by 0.28% at the percentage of the mixture of B20%. And the results of the research on the performance value of the power generated is 1.222 kW with an increase of 3.21% at 2500 rpm engine speed using a fuel mixture of B20%, while the torque value produced is 7.46 Nm with an increase of 1.08% at 1500 rpm rotation with the percentage of fuel mixture B10%, B20% and B30%. And for fuel consumption, pure dexlite is used, which is 0.11 ml/s at 1500 rpm compared to using a mixture of diesel oil, waste oil. This happens because the performance (power and torque) in the use of mixed fuels has increased slightly compared to pure dexlite fuel. And in this research the best fuel mixture is B20% fuel (Dexlite 80% with 20% waste diesel oil).

Keywords: *Diesel Oil Waste, Dexlite, Cetane Value, Performance*