

## **The Determination of Characteristics of E-B-Diesel Fuel**

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### **SUMMARY**

It is obvious that diesel and rural diesel needs eco-friendly improvements to enhance cold flow properties, lubrication and to decrease emission values, and in some countries E-B diesel fuel used for this purpose. In order to use E.B diesel fuel following points are needed to be determined by to researches; rates which biodiesel and bioethanol fuels should be blended, the way to prohibit phase separation, the amount of decrease in exhaust emissions, the change in engine power and fuel consumption values. Although there are many studies both in fossil fuels and biofuels, there still is a need for studies to decrease environmental damage by adding biodiesel and bioethanol to fossil fuel at the same time and to improve fuel properties, therefore to determine the supplementary properties of biofuels. Taking into account food security, waste vegetable oil used as raw material for biodiesel in terms of widespread impact. In this study, expected data to be obtained is that usage of a fuel with reduced environmental damage, improved cold flow and oxygen content in tractor engines. The study is planned to be conducted in four stages. In the first stage, reference experiments will be implemented by using conventional fuel (diesel and Rural diesel). In the second stage the properties of different E-B diesel which is obtained by blending biodiesel and the bioethanol with diesel; properties will be determined due to EN 590. In the third stage the performance, fuel consumption and the emission values will be determined due to TSE 1231 by implementing engine experiments where E-B diesel fuel is used. In Fourth stage will be experiment of first-run of the engine and evaluation phase of the project results. The study will be conducted by an experienced team which has already implemented similar projects and academic studies in this area. Characteristics of E-B diesel fuel, its affect to the lubrication oil and engine performance and emissions are expected to be revealed as a result of the study.

**Keywords:** E-B diesel fuel, environmental damage, fuel consumption