

# **The Effect of Adding Banana Weevil Bioethanol to Peralite Fuel on Engine Performance and Vehicle Fuel Consumption**

by

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## **ABSTRACT**

Bananas are also superior plants that have a short lifespan and can be harvested throughout the year. The part of the banana that has a high source of carbohydrates so that it can be used as bioethanol is the banana weevil. Because this part contains 76% starch, 20% water content and the remaining 4% vitamins and protein. Because it is rich in starch, this is what makes banana weevils used as an alternative fuel. The purpose of this study was to determine the impact produced when adding bioethanol to peralite fuel on engine performance and specific vehicle fuel consumption using 4 variations, namely pure peralite, 95% peralite + 5% BBP, 90% peralite + 10% BBP, peralite 85% + 15% BBP. The results of the study showed that the addition of bioethanol to fuel can improve vehicle performance, but the addition of excess bioethanol to fuel can actually reduce engine performance. At engine speed of 4500 rpm the highest peak torque and power values are 10.97 Nm and 7.1 Hp. The greater the RON in the fuel, the more efficient use of fuel will be. Because peralite fuel has RON 90 and bioethanol has RON 108, the more percentage of bioethanol added to peralite fuel, the less fuel consumption is used. The lowest specific fuel consumption was obtained in the 85% Peralite + 15% BBP variation of 0.40 L/HP.h at 5000 rpm.

**Keywords:** *Bioethanol, Banana Weevil, Engine Performance, Specific Fuel Consumption*