The Effect of Mixing Sweet Potato Based Bioethanol with Pertalite on Viscosity, Calorific Value, and Idle Test in a 150CC Gasoline Engine
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ABSTRAK

This study aims to analyze the effects of blending ethanol derived from sweet potatoes with Pertalite fuel on viscosity, calorific value, and idle test (langsam) in a 150CC gasoline engine. The research was conducted from February to April 2025. The production of bioethanol and viscosity testing were carried out at the Energy and Mechanics Workshop Laboratory, idle testing at the Automotive Engine Laboratory of POLIJE, and calorific value testing at the Combustion Engine Laboratory of Brawijaya University. An experimental method was used with bioethanol blend variations of PBi 5%, PBi 25%, and PBi 50%. The results showed that increasing the percentage of bioethanol in the blend led to a corresponding increase in fuel viscosity but a decrease in calorific value. In the idle test, blends of PBi 5% and PBi 25% allowed the engine to operate properly at ±1300 rpm.

Keywords*: bioethanol, sweet potato, Pertalite, viscosity, calorific value, idle performance, gasoline engine*