

ANALISIS PENGARUH PENGGUNAAN BAHAN BAKAR GAS LPG TERHADAP PERFORMA DAN EMISI GAS BUANG SEPEDA MOTOR 155 CC

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh penggunaan bahan bakar gas LPG terhadap performa dan emisi gas sepeda motor 155cc. Penggunaan bahan bakar alternatif seperti LPG semakin diminati karena dianggap lebih ramah lingkungan dan ekonomis dibandingkan bahan bakar konvensional seperti pertalite. Metode penelitian dilakukan dengan menguji performa kendaraan (torsi dan daya) serta emisi gas buang (CO, CO₂, HC, dan NO_x) menggunakan dua jenis bahan bakar: pertalite dan LPG. Hasil pengujian menunjukkan bahwa LPG menghasilkan emisi CO₂ yang lebih rendah (3,8%) dibandingkan pertalite (4,4%), namun emisi CO dan HC LPG lebih tinggi. Dari sisi performa, kendaraan yang menggunakan pertalite menunjukkan torsi dan daya yang lebih tinggi dibandingkan LPG, khususnya pada putaran mesin tinggi. Kesimpulannya, LPG lebih unggul dari segi emisi CO₂, namun memiliki performa yang lebih rendah dibandingkan pertalite, sehingga pemilihan bahan bakar perlu disesuaikan dengan kebutuhan penggunaan kendaraan.

Kata kunci: *LPG, pertalite, emisi gas buang, torsi, daya, sepeda motor 155cc.*

ANALYSIS OF THE EFFECT OF LPG FUEL USAGE ON THE PERFORMANCE AND EXHAUST EMISSIONS OF 155CC MOTORCYCLES

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ABSTRACT

This study aims to analyze the effect of using LPG (Liquefied Petroleum Gas) fuel on the performance and exhaust emissions of 155cc motorcycle. The use of alternative fuels such as LPG is increasingly popular due to its reputation as being more environmentally friendly and economical compared to conventional fuels like Peralite. The research method involved testing vehicle performance (torque and power) and exhaust emissions (CO, CO₂, HC, and NO_x) using two types of fuel: Peralite and LPG. The results showed that LPG produced lower CO₂ emissions (3.8%) compared to Peralite (4.4%), although its CO and HC emissions were higher. In terms of performance, vehicles using Peralite demonstrated higher torque and power, especially at higher engine speeds. In conclusion, while LPG is superior in terms of CO₂ emissions, it delivers lower performance compared to Peralite. Therefore, fuel selection should be based on the intended use of the vehicle.

Keywords: *LPG, Peralite, exhaust emissions, torque, power, 155cc motorcycle.*