

***COMPARISON OF STANDARD AIR FILTER AND BIOCOMPOSITES AIR
FILTER ON PERFORMANCE OF 4 STROKE 125 CC ENGINE***

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ABSTRACT

The presence of oxygen in the air plays an important role in the engine combustion process to reduce exhaust gas emissions. Sugarcane bagasse and Zeolite are porous materials that are able to absorb angstrom-sized particles and nitrogen in the air. Seeing that the utilization of sugarcane bagasse waste is not optimal, the bagasse can be processed and used as a basic material for motor vehicle air filters. In this research, air filters made from green sugarcane bagasse with the addition of zeolite were carried out on the performance of the Vario 125 motorbike. The three air filter samples produced were then tested for torque, power and exhaust emissions. Based on the research results, torque test results were obtained at 8.79 Nm on a standard air filter. Meanwhile, the bagasse air filter gets a torque of 9.56 Nm. Meanwhile, the bagasse + zeolite air filter gets a torque of 8.94 Nm. Then the power test results obtained results of 7.5 hp on the standard air filter, 7.6 hp on the bagasse air filter, (Alexander, 2020) and 7.5 hp on the bagasse + zeolite air filter. Taking data at idle speed, it was found that the lowest CO results were found in the bagasse + zeolite air filter. In this study, the bagasse + zeolite air filter produced 0.18% CO. When compared with previous research, the percentage of CO levels in the bagasse and bagasse + zeolite air filters has decreased significantly

Keywords: Bagasse, Zeolite, Power Torque, Exhaust Gas Emissions