COMPARISON OF THE USE OF STANDARD AIR FILTERS WITH BIOCOMPOSITE AIR FILTERS REINFORCEMENTED BY A MIXTURE OF SUGAR CANE BAGASSE AND COCONUT FIBER WITH VARIATIONS IN THE NUMBER OF FOLDS ON THE PERFORMANCE OF A 150 CC 4-STROKE ENGINE

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ABSTRACT

Biocomposite filters made from bagasse and coconut fiber are a porous material that is capable of absorbing angstrom-sized particles and nitrogen in the air. This research aims to determine the comparison of standard air filters with biocomposite air filters made from bagasse and coconut fiber on the performance of a 150 CC 4 stroke engine, which was carried out at the official Yamaha Grace Sejahterah Motor Arjasa Jember workshop. The research method used was experimental, by taking the research object as a biocomposite air filter made from sugarcane bagasse and coconut fiber using dynotest test media. Based on the results of this research, the best torque test results were obtained on a standard filter of 12.64 Nm, while the highest power test results were obtained on a 6-fold biocomposite filter with a result of 13.8 Hp. Then in the torque test there was a decrease of 0.05% from the standard filter, while in the power test there was an increase of 0.014% from the standard filter power. Then, in testing fuel consumption at 6000 rpm, the best fuel consumption results were found for the 6-fold mixed air filter, namely 0,20ml/seconds. It can be seen that there is an increase of 0.017% in fuel consumption using a standard air filter.

Keywords*: Biocomposit, Power, Torque*