

ABSTRACT

EFFECT OF CHARCOAL RICE HUSKS AS ADSORBENT FOR COMBUSTION AIR ON THE PERFORMANCE OF 4 STROKE MOTORCYCLE

By

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Gasoline motorcycle and diesel transport consumption sector has reached 48% of the total national fuel consumption, where this cause that fuel reserve are running low. With these conditions, the government has implemented a fuel restriction policy in various areas. Fuel consumption of motorized vehicle can be reduced by using the potential of natural resources that abundant, especially in Lampung Province namely utilized charcoal pellets of rice husks.

The research was done with some variations those are run test (road test and acceleration), and stationary testing. The road test conducted by a distance of 5 km is running constantly at 40 km / hour and 60 km / hour velocity. While the acceleration test taking trough speed 0-100 km / hour, 70-100 km / hour, 40-90 km / hour, and 40-100 km / hour (with gearshift). For the stationary testing performed at 1000 rpm, 1500 rpm and 3500 rpm rotation using charcoal pellets and without charcoal pellets. Charcoal pellets which used in this study consist of two diameter sizes (10 mm and 15 mm) and several mass variation (5 grams, 10 grams, and 15 grams). Charcoal pellets are packed in a frame and placed inside the Jupiter MX 135 LC motorcycle air filter. Before the air flow into the vehicle air filter, air will be adsorbed in the charcoal pellets firstly.

In this research, charcoal pellets proved able to economize fuel consumption up to 42.1% on the road test through the distance of 5 km. While at the acceleration test 0-100 km / hour capable of accelerating the travel time up to 7.39%, acceleration 70-100 km / hour capable of accelerating the travel time of 0.182%, acceleration 40-90 km / hour capable acceleration time of 5.223%, and acceleration 40 -100 km / hour capable acceleration time of 0.60%. For stationary test, charcoal pellets proved able to economize fuel consumption at 1000 rpm rotation up to 8.95%, at 1500 rpm rotation proved able to economize fuel consumption which is 8.24%, and at 3500 rpm rotation proved able to economize of 4.66% fuel consumption.

Key words: Economize fuel consumption, rice husk charcoal, charcoal pellets adsorbent.