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## ENGINE EMISSIONS TESTING OF INDIGENOUS BIO DIESEL / DIESEL FUEL BLENDS IN PAKISTAN

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### **Abstract:**

In this research paper, bio diesel produced from indigenously available canola oil was blended in appropriate quantities with premium quality petroleum diesel and tested in a compression-ignition diesel engine. Only environmental emissions from the engine was analyzed as engine performance has been widely studied and it was found overall that bio diesel improves combustion efficiency in the engines (in terms of less CO), gives lower SO<sub>2</sub> and PM emissions (on account of having minimum sulfur content) and has increased NOX emissions. Due to low SO<sub>2</sub> emissions, catalytic converters can be employed in diesel engines for the abatement of NOX emissions. Overall, in this study, it was found that bio diesel blended between 20 – 25% showed optimum performance in terms of environmental emissions (i.e. low CO, SO<sub>2</sub> and PM released) and can be recommended as a gradual replacement to petroleum diesel subject to the use of lower cost non-edible feedstocks for preparing this clean fuel.

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