



## Effect of Concentration of KOH, H<sub>2</sub>O, Temp in In-situ Transestrification Reaction of *Sesbania sesban*, *Capparis deciduas* seed

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### Abstract

Fatty acid methyl ester is defined as the mono-alkyl esters of fatty acids derived from vegetable oils or animal fats. In simple terms, it is renewable source of energy. Petrodiesel can be replaced by biodiesel due to its superiority. Biodiesel has more lubricity which increases lifetime of engine. It is less toxic and gives less emission of Carbon dioxide, Carbon monoxide, hydrocarbons and particulate matter. The biodiesel fraction from oil content of *Sesbania sesban*, *Capparis deciduas* are found 29% & 63.75 respectively. The percentage of biodiesel yield increases with concentration of KOH as a catalyst. The aim of this article is to demonstrate the cost effective new source of energy by single step reaction i.e. production of oil by combining extraction and reaction of extract with the mixture of alcohols. In this article the effect of catalyst concentration, time, water content and temperature on in-situ transestrification is studied to obtain optimum yield of fatty acid methyl ester (Biodiesel). Fuel characterization tests show the striking similarity of various physical & chemical properties and compares to ASTM standards.

**Key words :** Biodiesel; KOH; in-situ transestrification; *Sesbania sesban*; *Capparis deciduas*

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