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Mungongo Seeds Oil (*Schinziophyton rautanenii*) as a Potential Source of Bio-Diesel

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Abstract

Biodiesel from mungongo seeds oil (*Schinziophyton rautanenii*) was investigated in the present study to determine its suitability for use as substitute of petro diesel. The fuel properties of Mungongo Oil Methyl ester (MOME) such as cetane number, kinematic viscosity, oxidative stability, lubricity, cloud point, pour point, cold filter plugging point, flash point, acid value, density, higher heating value, free and total glycerol were determined and compared with global biodiesel standards such as ASTM 6751 and EN 14214. Most of the determined fuel related properties of MOME fulfilled the minimum requirements of ASTM D6751 and EN 14214 biodiesel standards except oxidation stability. The stability of biodiesel is very critical and biodiesel requires antioxidant to meet storage requirements and to ensure fuel quality at all points along the distribution chain. Therefore, three antioxidants; 1, 2, 3 tri-hydroxy benzene (Pyrogallol, PY), 3, 4, 5-tri hydroxy benzoic acid (Propyl Gallate, PG) and 2-tert butyl-4-methoxy phenol (Butylated Hydroxyanisole, BHA) were investigated. The result showed that, PY and PG were more effective antioxidants than BHA.

Keywords

Antioxidants, Bio-Diesel, Fuel Properties, Mungongo Oil, Oxidation Stability