

Fatty Acid Composition of Mahogany Seed Oil and its Suitability for Biodiesel

Production

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Abstract

Fatty acids components and compositions of Khaya senegalensis Nigerian specie of Mahogany were investigated to determine the suitability of its oil for biodiesel production. The most suitable feedstock for biodiesel production is one that has high proportion of monounsaturated fatty acid, very low wax content and also low gum. The extraction was done by pounding the kernels and mechanically pressed oil out of the pounded kernel. The oil yield was 73.56 % which is higher than other species found in the literatures. The major fatty acids of the oil were myristoleic acid 34.56, palmitic acid 20.561, oleic acid 17.132 and erucic acid 17.132 %. It also has the following minor fatty acids; capric acid 0.244, undecylic acid 0.246; Myristic acid 1.592, stearic acid 1.592, arachidic acid 1.838, isooleic acid 1.028, Vaccenic acid 1.028, Petrolinic acid 1.028, elaidic acid 1.028 and 13-octadecenoic acid 1.028 %. This Khaya senegalensis has 73.9% monounsaturated fatty acids and no polyunsaturated fatty acids; this makes it suitable for biodiesel production.

Keywords: biodiesel, components, composition, fatty acids, mahogany seed oil

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