

Cotton and Caricaceae Seeds, as Potential Feedstock for Biodiesel Production

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Abstract

Statement of the Problem: The cotton and caricaceae are common crops in the tropical countries. The crop seed in general is as domestic waste. However, mostly the people use it as seedlings. On the other hand, the production of fossil based oil takes place a declining quantity year by year. To anticipate the energy crisis occurs in the future, a new resource of fuel needs to be invented [1]. The purpose of this study is to extract the oil from the seed of crop such as cotton and caricaceae via chemical solvent extraction process. Thus, the extracted oils are used as the feedstock of biodiesel [2]. **Methodology & Theoretical Orientation:** A nonpolar chemical solvent is applied by immersing the crushed seed for a few hours which is treated with a heating source [3]. Then, the oils are further treated via acid esterification process under various specified parameters, if the oils are high content of impurities (free fatty acid), namely, it is more than 1.0% w/w. Finally, the esterified oil is used to produce biodiesel through alkali catalyzed transesterification under the specified variables [4]. **Findings:** The extracted oils indicate that the content of unsaturated hydrocarbon compounds is high. It is very useful used as feedstock of alternative fuel (biodiesel) which is applied in a low climate region (Figure 1) **Conclusion & Significance:** The cotton and caricaceae based biodiesel is as the potential alternative fuel due to the whole its characterization meets the values of standard of ASTM D 6751 [5].

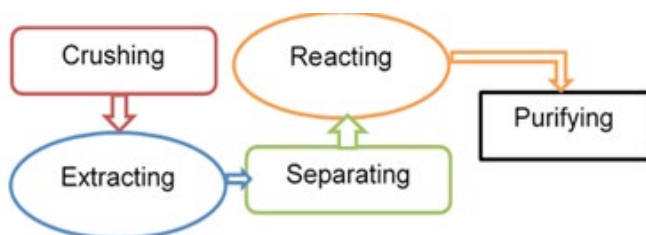


Figure 1: The schematic of crop oil based alternative fuel (biodiesel) production.

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