DETERMINATION OF FUEL PROPERTIES OF ATILI (BLACKDATE) OIL FOR SUBSEQUENT BIOFUEL PRODUCTION

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ABSTRACT
Fuel properties of Atili (Blackdate) oil were experimentally determined by standard methods and enhanced by reducing the viscosity using a non-polar solvent (n-hexane) in order to modify the oil to meet the commercial fuels specifications. The fuel properties determined were specific gravity, flash point, fire point, cloud point, pour point, calorific value, cetane number and viscosity using the American Society for Testing Materials (ASTM) methods. The results showed that the values of 0.9582, 119°C, 132°C, 7°C, -2°C, 37.25 MJ/kg and 31.5 were obtained for the specific gravity, flash point, fire point, cloud point, pour point, calorific value and cetane number for the pure Atili oil, while the values of 0.8911, 122°C, 147°C, -1°C, -11°C, 42.50 MJ/kg and 40.6 were for the specific gravity, flash point, fire point, cloud point, pour point, calorific value and cetane number for the modified Atili oil, respectively.