



Acid oil is a by product of edible oil industries that is produced during the refining of oil and goes to waste. It consisted of free fatty acids, antibiotics, phenols, hydrocarbons and heptanol. The aim of this research work was to access the physiochemical properties of acid oil and convert it to biodiesel. Acid oil was pretreated with glycerol+alkali, glycerol+acid and glycerol+ zinc chloride. Maximum conversion of free fatty acids to hydrocarbons and triglycerides was observed in a sample pre-treated with acid and glycerol (4:1) and 10% zinc chloride. The pretreated oil was subjected to biodiesel conversion by microbial (*Aspergillus niger*) and animal lipase (pig pancreas). Maximum production of fatty acid alkyl esters was observed after 72 hours at incubation of 30°C and 200rpm with animal lipase. Biodiesel was subjected to characterization according to ASTM US standards. It was concluded that biodiesel belonged to B20 grade with cloud point (-10°C), pour point (-40°C), kinematic viscosity (4.7mm<sup>2</sup>/s), flash point (50°C) and fire point (54°C) respectively.