Abstract

In this study biodiesel was produced by using chicken fat, which was collected from local market. It was converted into biodiesel by using two-step mechanism. Oil was extracted from chicken fat by heating. Its acid value was 9.4mgKOH/g which was too high, treated with 2% H_2SO_4 and methanol at 70°C for 2 hour, free fatty acid value was adjusted below 1%. Trans-esterification was carried out by using 1% sodium methoxide with 1:6 oil to methanol ratio at 75°C for 2 hour. Biodiesel produced by above process was washed five times with distilled water, heated to 110°C for 1 hour. Both oil obtained from chicken fat and biodiesel were characterized by GCMS. Basic fuel properties of diesel and biodiesel were compared, exhaust emissions were analyzed by using gas analyzer probe that was connected with KM-SED-1100B diesel engine. Pure Diesel, Biodiesel, and their blends (20% & 40%) were run through it. The results shows that in case of Biodiesel as compare to Diesel CO & HC exhaust emissions were decreased and NOx emissions were increased.