PROJECT REPORT ON

AN INVESTIGATION INTO EFFICACY OF BIOETHANOL PRODUCTION FROM DIFFERENT BIO-DIESEL OIL SEED CAKES

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ABSTRACT

Biodiesel oil seed cakes of *Pongamia pinnata(PP), Simarouba glauca(SG), Calophyllum inophyllum(CI), Scleropyram pentadrum(SP), Jatropa curcas(JC), Vateria indica(VI)* and *Hevea brasiliensis(HB)* weighing about 2g and 5g(w/w) were pre-cooked with 100ml water and treated with 2.5% sulfuric acid(v/v) and HB with 10% sulphuric acid and subjected to 10 min high pressure (15psi) cooking at 120°C followed by 1.5 hour pressure cooking at 90°C to solubilize the oil seed cakes. Solubilized lignocellulosic biomass was filtered through Whatman No.1 filter paper after cooling to the room temperature. Reducing sugar content in the hydrolyzate was found to be 0.14 and 0.35(PP), 0.13 and 0.28(SG), 0.51 and 1.37(CI), 0.29 and 0.71(SP), 0.26 and 0.44(JC), 0.74 and 0.94(VI) and 0.32 and 1.1(HB) g/100ml of hydrolysate respectively in 2g and 5g of pressed oil cake respectively. The filtrate was neutralized with thick suspension of calcium hydroxide and subjected to fermentation with 5g/l concentration of yeast (*Saccharomyces cerevisiae)* for 48 hrs at 30°C in a shaker incubator at 120 rpm. Ethanol in the fermented sample was estimated by Ceric Ammonium Nitrate analysis. Ethanol content in the fermented broth was found to be 0.032 and 0.308(PP), 0.14 and 0.13(SG), 0.085 and 0.25(CI), 0.026 and 0.043(SP), 0.01 and 0.22(JC), 0.35 and 0.37(VI) and 0.04 and 0.28(HB) g/100ml respectively in 2% and 5% oil seed cake.