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Production of Biodiesel and Soap from Sal (*Shorea robusta*) Seed Oil

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Shorearobusta, commonly known as Sal, is the major plant of Sal forest which covers about 32% of the total forest land of Bangladesh. In this study, oil was extracted from the seed by conventional soxhlet extraction with n-hexane and ultrasonication technique. Seeds without wing were found to contain about 15% oil for 6 hours soxhlet extraction at 50°C and 45 minutes ultrasonication at 40°C. Fatty acid composition of the soxhlet extracted oil analyzed by GC-FID showed stearic acid and oleic acid as the major components. Acid value, iodine value, saponification value, peroxide value, refractive index, viscosity were also determined. Thermogravimetric analysis of the oil for the determination of the thermal stability of the oil. Transesterification and Saponification process were carried out to produce Biodiesel and the soap from the extracted seed oil. The produced biodiesel and the soap were characterized and a comparative studies were carried out with international standards. The optimum yield for biodiesel was found around 40% of the raw materials and the cytotoxic analysis of the produced soap were carried out. The integrated production of biodiesel and soap from Sal seed oil will bring a drastic change in the realization fuel and cosmetic industries.

Biography:

Dr. Mohammad Ismail is currently serving as Associate Professor at the Department of Applied Chemistry and Chemical Engineering, University of Dhaka, Bangladesh. He completed his PhD in Engineering from University of Cambridge and M.Sc and B.Sc from Dhaka University. Prior to joining at University of Dhaka, he was the officer at Bangladesh Civil Service, Researcher at University of Cambridge, UK and that at BCSIR, Bangladesh. In his career, more than 35 research articles published at peer reviewed journals and awarded various prizes. He is also working as National Consultant of UNDP.