

Biodiesel from waste rice bran: Technology & Economic viability

Rajiv Arora^{1,2}, Dr Amrit Pal Toor¹, Dr R K Wancho^{1,3}

¹ *University Institute of Chemical Engineering & Technology, Panjab University, Chandigarh*

² *Shaheed Bhagat Singh State Technical Campus, Ferozepur*

³ *Energy Research Centre, Panjab University, Chandigarh*

Most of the biodiesel production is concentrated on palm oil, soybean oil, sunflower oil, coconut oil and rapeseed oil. The cost of these edible oils is quite high. Cost of waste and high free fatty acid oils is almost one half to one third that of refined oils, but the production cost increases due to additional steps for converting free fatty acids to esters. High Free Fatty Acid (FFA) rice bran oil (RBO) is available in abundance as the FFA content of rice bran increases at the rate of about 5% everyday and it is not possible to extract rice bran oil immediately after the milling of rice. This paper presents the methods of converting waste rice bran to biodiesel and utilization of de-oiled rice bran. Parameters affecting the conversion of high FFA-RBO like catalyst, oil to solvent ratio, temperature and time are studied. The economic viability of producing biodiesel from waste rice bran is also discussed.