11th World Bioenergy Congress and Expo

July 02-04, 2018 | Berlin, Germany

Production of biodiesel from waste trap grease

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B Although a wide variety of substrates have been exploited but still majority of the production is met with vegetable oils and hence is not cost competitive in comparison with the conventional petro-diesel. The reason behind the high cost may be attributed to the expensive vegetable oils which accounts to 70-80% of the production cost. In this scenario, waste trap grease (WTG) obtained from the grease traps of restaurants can be utilized for biodiesel production. An added advantage of channelizing grease for biodiesel production will meet the objective of recapture and recycling of waste streams produced from food industries and at the same time will resolve the food vs. fuel issue. In the present work, the waste trap grease to biodiesel was carried by lipase which was produced from *Rhizopus oryzae*. Selection of various transesterification process parameters such as temperature, reaction time, oil to solvent molar ratio and agitation speed was performed to study its effect on biodiesel production through one variable at a time approach (OVAT). The maximum conversion of grease to biodiesel was observed at temperature (40°C), incubation time (48 h), oil to methanol ratio (1:2, v/v) and agitation speed (200 rpm) respectively. The above study indicated the potential of WTG as a viable biodiesel feedstock owing to its high lipid (42% w/w) and free fatty acids (63.94% w/w) content.

Biography

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