

Optimization of biodiesel production from waste *Date pits*

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Abstract:

The current work present production of biodiesel from non-edible waste *Date pits* biomass feedstock. Biodiesel production was optimized based on several process parameters such as; temperature, reaction time and catalyst loading. The experimental plan was produced depending on the suitable ranges of process variables by response surface methodology (RSM). The optimized biodiesel yield was 96.4% at a process temperature of 90 °C, reaction time 4 h, and catalyst loading 3 wt%. Based on the quadratic model, predicted by RSM, process temperature was rendered as the most influencing parameter among other parameters studied. Moreover, the fuel properties determined for produced biodiesel showed a good agreement with the international standards of ASTM and EN.