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Pilot scale biodiesel production from *Rhodospiridium toruloides* DEBB 5533 microbial oil using sugarcane juice: Performance in diesel engine and preliminary economic study

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**Pilot scale biodiesel production from *Rhodospiridium toruloides* DEBB 5533 microbial oil using sugarcane juice: Performance in diesel engine and preliminary economic study**

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**Abbreviations:** Biooil, microbial oil; B2, blend of 2% biodiesel in fossil diesel; B10, blend of 10% biodiesel in fossil diesel; B20, blend of 20% biodiesel in fossil diesel; SCO, Single-Cell Oil; non-GMO, non-genetic modified organism; rpm, rotation per minute; ppm, parts per million; AOAC, American Oil Chemists' Society; PV, peroxide value; II, Iodine Index; (II), FFA, free fatty acids; SN, saponification number; CO<sub>2</sub>, carbon dioxide; CO, carbon monoxide, O<sub>2</sub>, oxygen; NO<sub>x</sub>, nitrogen oxide; HC, hydrocarbons; CI, compression ignition; B 5 SCO, blend of 5% single-cell oil biodiesel in fossil diesel; B20 SCO, blend of 20% single-cell oil biodiesel in fossil diesel; REF B5, blend of 5% reference biodiesel from soybean oil in fossil diesel; REF B20, blend of 20% reference biodiesel from soybean oil in fossil diesel; TRS, total recovered sugar; VHP, very high polarization; C14:0, myristic acid; C16:0, palmitic acid; C18:0, stearic acid; C18:1, oleic acid; C18:2, linoleic acid; C16:3, lonolenic acid; DAG, diacylglycerols; TAG, triacylglycerols; SJH, sugarcane juice hydrolysate; PHB, polyhydroxybutyrate

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