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Exploring the metabolic potential of oleaginous actinomycetes in biodiesel production from cassava wastewater

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The depletion in fossil fuel reserves has instigated the search for renewable sources such as biofuels. Biofuel production provides a sustainable alternative to fossil fuels. However, the progression of biofuel industry has been largely affected by several uncertainties including the sustainability of production processes. Finding an economically viable process and the right substrates have been a source of constant debate. Biodiesel production is one such area which is gaining momentum in the last few decades. We are currently investigating cassava wastewater as a substrate and also as a source of oleaginous bacteria. The production of tri-acyl glycerol from mycolic acid containing actinomycetes predominantly *Rhodococcus*, has been identified as a potential source. These bacteria which are largely ubiquitous provide a significant amount of triglyceride when cultivated under low cost waste. The growth of oleaginous bacteria for the accumulation of triglycerides on low cost and abundant, cassava waste still remains unexplored, especially in Nigeria which is the largest producer of cassava in the world. We started our initial investigations on the cassava waste water sample following culture dependent and independent approach. We prognosticate that the identification of microflora isolated from different stages in the sample will provide a basis for understanding the nature of the substrate and the potential for the synthesis of biodiesel from cassava waste water.

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