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## Abstract

The global need for energy supply indicates the urgent need to find renewable-based alternatives to fossil fuels [1]. Microbial oils have recently attracted attention in a move towards sustainable energy generation. Presently, oleaginous yeasts are being evaluated as oil factories, they have a short life cycle and are less affected by seasons and climate, require less labor and microbial oil production is easier to scale up [2-4]. Among them, *Rhodotorula* species have proved to have a biotechnological advantage over other oleaginous yeasts because of their ability to grow on inexpensive substrates [5]. *Rhodotorula toruloides* SBY29, *Rhodotorula toruloides* CBS14, *Rhodotorula babjevae* DVBPB 8058 were grown in a medium containing 10 % and 50 % of hydrolysate of logging residue for 5 days at 25°C on an orbital shaker at 130 rpm. The three strains showed growth in 10 % and 50 % of the logging residue. In 10 % of logging residue hydrolysate SBY29 showed highest growth ( $OD_{600}=23.5$ ) and CBS14 lowest growth ( $OD_{600}=16$ ). The same behavior of the strains was observed in 50 % of logging residue hydrolysate, SBY29 ( $OD_{600}=28.5$ ), DVBPB 8058 ( $OD_{600}=27.5$ ), CBS14 ( $OD_{600}=17$ ). The study continued with 90 % dilution of this hydrolysate but none of the strains didn't grow in this media. The cultivation of the yeast strain SBY29 was performed in 500 mL bioreactor in pH=6 DO=21 % O<sub>2</sub> and temperature=25 °C. Most of the total sugars were depleted within the first three days of fermentation and yielded 85 % of total lipid content.

## References

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