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Utilization of methanol in crude glycerol to assist lipid production in non-sterilized fermentation from *Trichosporon oleaginosus*

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1 **Utilization of methanol in crude glycerol to assist lipid**
2 **production in non-sterilized fermentation from *Trichosporon***
3 ***oleaginosus***

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11 **Abstract**

12 In this work, methanol in crude glycerol solution was used to assist the lipid production
13 with oleaginous yeast *Trichosporon oleaginosus* cultivated under non-sterilized
14 conditions. The investigated methanol concentration was 0%, 1.4%, 2.2%, 3.3% and 4.4%
15 (w/v). The results showed that methanol played a significant role in the non-sterilized
16 fermentation for lipid production. The optimal methanol concentration was around 1.4%
17 (w/v) in which the growth of *T. oleaginosus* was promoted and overcame that of the
18 contaminants. The non-sterilized fed-batch fermentation with initial methanol
19 concentration of 1.4% (w/v) was then performed and high biomass production (43.39 g/L)
20 and lipid production (20.42 g/L) were achieved.

21
22 **Keywords:** lipid production; oleaginous yeast; non-sterilized fermentation; methanol;
23 crude glycerol.

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