

**SKRINING PRIMER KHAMIR *OLEAGINOUS* GENUS *Lipomyces* KOLEKSI  
*Indonesian Culture Collection* DALAM MENGHASILKAN LIPID**

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**INTISARI**

Lipid merupakan komponen penting yang digunakan sebagai bahan dasar dalam bidang industri, farmasi, makanan, dan berbagai bidang lainnya. Energi alternatif biodiesel dengan bahan dasar lipid dapat menekan dampak buruk penggunaan bahan bakar fosil bagi lingkungan karena emisi gas karbondioksida (CO<sub>2</sub>) yang terlepas ke udara dalam jumlah banyak, dimana jika dibiarkan lama kelamaan akan menimbulkan pemanasan global. Khamir *oleaginous* dapat mengakumulasi lipid sebesar lebih dari 20% dari biomasanya, namun pada kondisi nutrisi yang terbatas khamir *oleaginous* mampu mengakumulasi lipid hingga 70% dari berat kering selnya. Keberadaan khamir di Indonesia sangat melimpah namun masih sangat sedikit yang melaporkan mengenai kandungan lipid dalam khamir *oleaginous*. *Indonesian Culture Collection* (InaCC) telah berhasil melakukan isolasi dan identifikasi khamir genus *Lipomyces* yang didapat dari alam Indonesia, namun strain khamir ini belum pernah dilakukan uji lipid oleh pihak InaCC sehingga pada penelitian ini akan dilakukan skrining primer terhadap 6 strain khamir genus *Lipomyces* dengan tujuan untuk mengetahui kemampuan strain khamir genus *Lipomyces* milik InaCC dalam menghasilkan lipid dan mengetahui profil lipid yang ditumbuhkan pada medium *Nitrogen Limited Medium* (NLM). Dari ke-6 strain khamir yang diuji diketahui bahwa khamir *L. starkeyi* Y853 berpotensi mengakumulasi lipid dalam jumlah tertinggi pada jam ke-48 yakni sebesar 4,36 g/L dengan berat biomassa kering 8,14 g/L. Komposisi profil lipid yang dihasilkan oleh khamir *L. starkeyi* Y853 memiliki kesamaan dengan minyak nabati yaitu asam oleat (51,62%), asam palmitat (18,47%), dan asam linoleat (7,62%).

Kata kunci: *Indonesian Culture Collection* (InaCC), Khamir *Oleaginous*, Lipid, *L. starkeyi*, Profil Lipid, Skrining Primer.

## **PRIMARY SCREENING OF THE *Lipomyces* GENUS OLEAGINOUS YEAST COLLECTIONS OF Indonesian Culture Collection IN PRODUCING LIPIDS**

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### **ABSTRACT**

Lipids are important components that are used as basic ingredients in industry, pharmaceuticals, food, and various other fields. Alternative energy biodiesel with lipid as based ingredients can reduce the negative impact of using fossil fuels on the environment because of the emission of carbon dioxide (CO<sub>2</sub>) gas that is released into the air in large quantities, which if left unchecked over time will cause global warming. Oleaginous yeast can accumulate lipids more than 20% of its biomass, but under limited nutrient conditions, oleaginous yeasts can accumulate lipids up to 70% of the dry weight of the cells. The existence of yeast in Indonesia is very abundant but there are still very few reports on the lipid content in oleaginous yeast. The Indonesian Culture Collection (InaCC) has succeeded in isolating and identifying the yeast genus *Lipomyces* obtained from Indonesian nature, but this yeast strain has never been lipid tested by the InaCC so that in this study a primary screening of 6 yeast strains of the genus *Lipomyces* was carried out with the aim of knowing the ability of InaCC's *Lipomyces* genus of yeast strain to produce lipids and to determine the lipid profile grown on Nitrogen Limited Medium (NLM). From the 6 yeast strains tested, it was known that the yeast *L. starkeyi* Y853 had the potential to accumulate the highest amount of lipids at 48 hours at 4,36 g/L with a dry biomass weight of 8,14 g/L. The composition of lipid profile produced by the yeast *L. starkeyi* Y853 similar to vegetable oil was oleic acid (51,62%), palmitic acid (18,47%), and linoleic acid (7,62%).

**Keywords:** Indonesian Culture Collection (InaCC), Oleaginous Yeast, Lipids, *L. starkeyi*, Lipid Profile, Primary Screening.