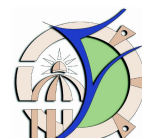




كلية الزراعة
قسم الميكروبيولوجيا الزراعية

ABSTRACT



جامعة الفيوم

البحث السادس

Basma R. M. Yassin, Osama A. Seoudi ' Neimat. A. H. Elewa, Baraka A. Abd-Elsalam, Laila R. Abd Al Halim (2024) . Biosynthesis of Omega 3, 6, and 9 Polyunsaturated Fatty Acids by <i>Pichia kudriavzevii</i> , and <i>Yarrowia lipolytica</i> . Journal of agricultural research and development. 38 (3). Accepted for publication	البحث السادس
مشارك مع آخرين داخل التخصص – مقبول للنشر	6
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Title	Biosynthesis of Omega 3, 6, and 9 Polyunsaturated Fatty Acids by <i>Pichia kudriavzevii</i> , and <i>Yarrowia lipolytica</i> .
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ABSTRACT

Polyunsaturated fatty acids (PUFAs) offer a wide variety of health advantages. Fourteen yeast isolates were obtained from different dairy products. Preliminary lipid production screening revealed that five yeast isolates capable to accumulate lipids within its cells, as detected by Sudan black B staining. Quantitative analysis of lipid content after yeast growth on nitrogen-limited medium (NLM) showed significant variations of lipid content among the yeast isolates. Notably, Majdoula cheese isolate presented the highest lipid content 27.69%, followed by Rayeb milk, Labneh, Mozzarella cheese, and Ras cheese isolate recorded 22.73%, 22.37%, 21.79%, and 8.04%, respectively. Furthermore, Gas chromatography (GCMS-FID) of fatty acids revealed that Ras cheese (R.c) yeast isolate exhibited oleic acid as the abundant unsaturated fatty acid, afterwards linoleic acid, linolenic acid, palmitoleic acid, homo- γ -linolenic acid, eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) sequentially, and it represent about 64.9 % of all fatty acids. Similarly, Mozzarella cheese (M.c) isolate and Rayeb milk (Ray) isolate showed a predominance of oleic acid, linoleic acid, and palmitoleic acid, representing over 62% and 56% of the total fatty acids, respectively. Three yeast isolates with the highest unsaturated fatty acids content were identified as *Pichia kudriavzevii* PP527343 , *Yarrowia lipolytica* PP527342 and *Yarrowia lipolytica* PP701998 by 18s rRNA.