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In Algeria, traditional dairy products are prepared according to know-how inherited by rural women. These products are part of the Algerian heritage and have a great cultural and economic importance. Among these foods, fermented butter "Smen/Dhan" prepared from fresh butter according to different processes. During the maturation, the product develops organoleptic and nutritional qualities whose lipolysis is the main mechanism of this transformation and this activity could arise from the microbial cells. The aim of this work is the search and isolation of lipase-producing microbial strains from the "Smen/Dhan" and evaluates their potential. Isolation of lipolytic strains was realized from five samples of fermented butter obtained with different preparation methods and the storage times (years): 1 (E1), 3 (E2), 23 (E3), 5 (E4) and 10 (E5). Samples were collected from different areas of Algeria (El-Oued, Sétif, Jijel and Béjaïa). To obtain a diversity of lipolytic flora, we have used several culture media (Ordinary Nutrient Agar, Man Rogosa Sharp agar, Terzaghi agar Sabouraud Dextrose agar). These entire mediums are added with olive oil and / or Tween 80 to make them selective. The incubation was carried out at 37 °C for 5 days. The strains obtained are classified with their potential activity. Titration is the method used to estimate of the free fatty acids or lipase activity. 95 strains were selected for their lipolytic activity: classified as bacteria. 29 strains producing lipases: were preselected for their ability to develop a high lysis height on agar medium. They are Gram+, catalase +, immobile and unpopulated and cocci (04), rods (04) and filamentous (21). This shows that different preparation methods and storage times of these five products have effects on their microbial count. After a hierarchical ascending classification, six strains (SG5, BG14, SG9, SG26, SG25, and SS46) were screened for their ability to produce high levels of extracellular lipases independently on the nature of the lipid substrate in the medium.

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