

Production Of Single Cell Protein From Organic Whey Using Kluyveromyces Fragilis And Candida Kefyr Strains

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Résumé

Whey is the aqueous fraction of milk generated as a by-product of cheese manufacturing which is produced in large amounts. The main part of cheese whey is lactose. Other components are protein, salts and vitamins are present in minor amounts. Whey is highly perishable, which limits its utilization for animal feed and fertilizer. Therefore, whey is mainly treated by methane fermentation. However, the low concentration of these components makes their recovery uneconomical. Because of its high organic content with high biological oxygen demands (BOD), 40000-60000 ppm, dumping whey directly to the environment causes serious contamination problems. In this study, samples than soft and baked cheese, yogurt, cow's milk, pasteurized milk and cheese whey were collected from dairy industries in the city of Algiers. The samples were cultured on yeast extract glucose chloramphenicol agar (YGCA) media. Twenty yeast strains were isolated from the culture. The yeast identification was carried out following morphological, physiological and cultural characters. Betagalactosidase activity in the yeast strains showed that a strain *Candida kefir* designated as LP1 had highest enzyme activity (up to 5000 EU/ml). To investigate the effectiveness of batch submerged fermentation of the both yeast *C. kefir* and *Kluyveromyces fragilis* in cheese whey, we found that the strains have highest level of single cell protein (SCP), production (up to 24 g/l dry mass cell). The isolated yeast strains were examined for their ability in reduction of the chemical oxygen demand (COD). So, the results demonstrated a high level of reduction