

Isolation and Characterization of Lactic Acid Bacteria from Libyan Traditional Fermented Milk "Laban"

Authors : M. H. Nahaisi, N. M. Almaroum

Abstract : Laban is a Libyan traditional fermented milk product. This lactic fermentation has been known in many cities of Libya long time ago as stable, nutritious, refreshing drink especially during the summer. 16 naturally fermented milk samples were collected from different cities located in North West of Libya. The average pH, titratable acidity, fat and total solids were 4.16, 0.73%, 1.54% and 8.12 % respectively. Coliform, yeast and mold counts were 21×10^4 , 39×10^4 and 41×10^3 cfu/ ml. respectively. The average Lactococcus, Streptococcus, Mesophilic Lactobacillus / Leuconostoc and Thermophilic Lactobacillus counts were 99×10^7 , 96×10^7 , 93×10^7 and 15×10^7 cfu / ml. respectively. A total of one hundred forty two lactic acid bacteria (LAB) isolates were identified to the genus level as Lactobacillus (48.59%), Lactococcus (43.66%), Streptococcus (4.93%) and Leuconostoc (2.82%). Sugar fermentation tests have revealed that the most frequently Lactobacillus species was found to be Lactobacillus delbrueckii ssp. lactis (62.32%) followed by Lactobacillus plantarum (31.88%). Furthermore, other selected LAB isolates were identified by API 50 CH test as Lactococcus lactis ssp. lactics, Lactobacillus pentosus, Lactobacillus brevis and Leuconostoc mesenteroides ssp. cremoris.

Keywords : traditional fermented milk, laban, lactococcus, streptococcus, mesophilic lactobacillus, thermophilic lactobacillus counts

Conference Title : ICBSE 2015 : International Conference on Bioprocess Systems Engineering

Conference Location : Jeddah, Saudi Arabia

Conference Dates : January 26-27, 2015