

Microbial composition of kefir produced by a novel method in Syria

Bassam Ahmad Aloklah¹, Rudwan AliBadr Al-Deen^{1*}
Ibrahim Omar Almostafa Alsha'ar¹

¹National Commission for Biotechnology (NCBT), Damascus, Syria

Abstract: Kefir is one of the important fermented milk products which have many beneficial health effects. However, the method of their preparation was handed down as a precious inheritance from father to son. So we can say that the production of kefir grains is still a mysterious secret. In the current study we developed a very easy method for production of kefir grains in short time (72 h.), moreover the microbial composition of the resultant kefir grains was unique and different from the other products found in other countries.

The microbial composition of kefir grains were investigated using biochemical tests of three commercial systems: API 50 CHL for identification of lactic acid bacteria belonging to the genera *Lactobacillus* and *Leuconostoc*; ID 32 STREP for identification of the genera *Lactococcus*, *Streptococcus* and *Enterococcus*; while yeasts were identified using ID 32 C system.

The biochemical tests of the commercial systems revealed the existence of 17 species of bacteria, and 4 species of yeasts. The species/subspecies of bacteria were: *Lactobacillus acidophilus*, *Lactobacillus brevis*, *Lactobacillus curvatus* ssp. *curvatus*, *Lactobacillus delbrueckii* ssp. *bulgaricus*, *Lactobacillus fermentum*, *Lactobacillus paracasei* ssp. *paracasei*, *Lactobacillus plantarum*, *Lactobacillus rhamnosus*, *Lactobacillus pentosus*, *Leuconostoc lactis*, *Leuconostoc mesenteroides* ssp. *cremoris*, *Leuconostoc mesenteroides* ssp. *dextranicum*, *Lactococcus lactis* ssp. *lactis*, *Lactococcus lactis* ssp. *cremoris*, *Lactococcus raffinolactis*, *Streptococcus thermophilus* and *Enterococcus durans*. While the yeast species were: *Saccharomyces cerevisiae*, *Saccharomyces kluyveri*, *Kluyveromyces marxianus*, *Zygosaccharomyces* spp.

Keywords: Kefir; API 50 CHL; ID 32 STREP; ID 32 C; *Lactobacillus*; *Leuconostoc*; *Streptococcus*; *Lactococcus*; *Enterococcus*; yeasts.