

MICROBIOLOGICAL PROPERTIES AND ANTIMICROBIAL ACTIVITY OF KEFIRS SOLD IN TOKAT

Z. Yıldırım¹, N. Öncül², A. Özbey¹, H. Erinc^{1*}, M. Yıldırım¹

¹) Nigde University, Faculty of Engineering,
Dept of Food Engineering, Nigde, Turkey

²) Gaziosmanpasa University,
Dept of Food Engineering, Tokat, Turkey

Kefir is a fermented milk beverage made with kefir grains containing lactic acid bacteria, acetic acid bacteria, bifidobacterium and yeasts in a polysaccharide matrix of semi-hard granules. Kefir is very important for human health due to its natural probiotic and prebiotic properties. In this study, the microbiological properties and antimicrobial activities of kefirs sold in different retail markets in Tokat province were investigated. The study was conducted on kefirs produced by 3 different manufacturers, a total of 28 samples were evaluated in 4 different time spans. Of the 28 kefir samples, 12 were plain kefirs, and 16 were fruit kefirs. The counts of acetic acid bacteria, lactococcus, aerobic and anaerobic lactobacillus and yeast were determined in kefir samples. Additionally, antimicrobial activities of kefir samples were tested by using the disc diffusion method. As a result, the counts of the microbiological parameters investigated were found as follows: Total aerobic lactobacilli 6.19-7.19 log cfu/g, anaerobic lactobacilli 6.34-7.21 log cfu/g, lactococcus 6.38-8.16 log cfu/g, acetic acid bacteria 5.92-6.57 log cfu/g, and yeasts <1-4.94 log cfu/g. Some kefir samples showed antimicrobial activities against *Listeria monocytogenes*, *Listeria ivonovii*, *E. coli*, *Enterococcus faecalis*, *Enterococcus faecium*, and *Salmonella Enteritidis*. The mean pH values of plain and fruit kefirs were between 3.94-4.13 and 3.94-4.11, respectively.

Keywords: Kefir, microbial flora, antimicrobial activity

* Corresponding author: herinc@nigde.edu.tr