DEVELOPMENT OF PROBIOTIC DRINKING YOGHURT FROM GOAT MILK

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The demand for goat milk has increased because of its nutritional benefits, though it is only available in fresh form in the local market. A study was carried out to develop a drinking yoghurt from goat milk by inoculating three levels (0.2, 0.3 and 0.4 g l^{-1}) of *Streptococcus thermophillus* and *Lactobacillus bulgaricus* (YC-X11) and two probiotic cultures; *Bifidobacterium animalis* subsp. *Lactis* (BB-12) and *Lactobacillus acidophilus* (LA-5). The experiment was conducted in a Completely Randomized Design with two-factor factorial treatment arrangements with four replicates. Developed products were stored at 4 °C for 21 days. Nutritional and physico-chemical properties of both fresh milk and final products were analyzed. Microbial counts, titratable acidity and pH were tested at 0, 7, 14 and 21 days of storage. Sensory evaluation was done at four day intervals, from day 1 to 14 with 30 untrained panelists, using five point hedonic scales. Parametric data were analyzed using One Way Analysis of Variance (ANOVA) in Statistical Analyzing Software (ver. 9.0) and sensory data were analyzed by Friedman test in MINITAB. Titratable acidity and pH were significantly different *($p<0.05$)* with added cultures and culture levels. There was an interactive effect of treatment and storage time on pH for the developed product *($p<0.05$)* and it was in acceptable range, up to14 days of storage at 4 °C. Ash, dry matter, fat content, brix value and density did not significantly differ *($p>0.05$)* with cultures and culture levels. The developed product was negative for pathogenic microbes up to 21 days. The three tested cultures can be used to produce drinking yoghurt from goat milk and they can be stored up to 14 days without any quality deterioration. However, yoghurt developed with probiotic culture LA-5 with 0.3 g l^{-1} can be recommended as the best, according to the sensory properties.

Keywords: Drinking yoghurt, Goat milk, Probiotic culture