DEVELOPMENT OF PROBIOTIC GOAT CHEESE USING SELECTED PROBIOTIC BACTERIA

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The objective of the present study was to develop two types of probiotic cheese using goat milk with probiotic bacteria (*Bifidobacterium animalis* subsp. *lactis* BB12 and *Lactobacillus acidophilus* LA5). A commercial culture (FRC-65, Chr Hansen, Denmark) was used as the control. The probiotic cheese was manufactured using a standard procedure with inoculation at 0.02% (w/v). Physico-chemical, microbiological and sensory properties of the developed probiotic cheese were evaluated during the storage period of 21 d at 4 °C. The experiment was conducted in a Completely Randomized Design (CRD) with three replicates. Moisture content and pH of all probiotic cheese reduced while dry matter content and titratable acidity of all the cheese samples increased during storage. The highest overall acceptability was recorded for the probiotic cheese with *B. animalis* subsp. *lactis* BB12. Proximate analysis of cheese samples revealed that there were no significant differences in fat, protein and ash among three cheese types ($p<0.05$). Viability levels of *B. animalis* subsp. *lactis* BB12 and *L. acidophilus* LA5 reduced from 4.5×10^6 cfu g^{-1} to 3.6×10^6 cfu g^{-1} and 5.5×10^6 cfu g^{-1} to 3.9×10^6 cfu g^{-1}, respectively. Yeast and mould counts of all the cheese samples were within acceptable range and no coliform count was observed in any of the samples. This study revealed that both probiotic bacteria *B. animalis* subsp. *lactis* BB12 and *L. acidophilus* LA5 can be used to produce goat milk cheese with acceptable physico-chemical, microbiological and sensory properties.

Keywords: Bacteria, Cheese, Goat milk, Microbiological, Probiotic