PROBIOTIC VIABILITY IN YOGHURT PRODUCED USING COW MILK FROM DIFFERENT CATTLE BREEDS

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Declining of probiotic viability in dairy products with storage period is one of the problems which hinder possible health benefits for the consumers. Thus, the objective of this study was to evaluate the viability of *Bifidobacterium animalis* subsp. *lactis* (BB-12), *Streptococcus thermophilus* (ST) and *Lactobacillus bulgaricus* (LB) in set type yoghurts produced using cow milk of three cattle breeds namely *Thamankaduwa* white (TW), Local "*battu*" cattle and *Sahiwal* which are commonly found in dry zone, Sri Lanka. Yoghurt samples were prepared using thirty milk samples from each breed and tested for physicochemical properties including pH, titratable acidity, syneresis and water holding capacity. Sensory evaluation was undertaken to evaluate the organoleptic properties with 30 untrained panelists. Parametric and nonparametric data were analyzed by one-way ANOVA using a completely randomized design and Friedman test respectively. The lowest syneresis and the highest water holding capacity was recorded in yoghurts produced from TW breed. As well as, the highest viability of LB, ST and BB 12 was observed in yoghurts produced from TW breed. However, BB 12 and LB viability were significantly higher in set yoghurts produced from TW breed at the last 14 days of the storage period and average counts of BB-12 and LB were 8.32 log cfu/mL and 8.30 log cfu/mL respectively. It exceeds the expected probiotic viability for set yoghurt by Sri Lankan standards institute. The pH and titratable acidity were not significantly different ($p>0.05$) among the treatments. Sensory evaluation results revealed that yoghurts produced from TW breed had the highest ($p<0.05$) sums of rank for mouth feel and overall acceptability. Hence, it can be concluded that milk of TW cattle has superior characteristics for set yoghurt production in terms of probiotic viability as well as consumer acceptance.

Keywords: Probiotic viability, Set yoghurt, Shelf life, *Thamankaduwa* white