

**PHYSICOCHEMICAL AND MICROBIOLOGICAL PARAMETERS OF SELECTED
PLAIN-SET YOGHURT BRANDS IN COLOMBO, SRI LANKA**

M.J. Nuzla* and G.G.W. Nandanee

Department of Botany, University of Sri Jayewardenepura, Gangodawilla, Sri Lanka

**nuzlajiffry1993@gmail.com*

Yoghurt is a popular dairy product produced by the lactic acid fermentation of milk. It is consumed worldwide for its nutritional and health benefits. The quality factors of yoghurt are essential to ensure that a safe and healthy product is supplied to the consumers. The lack of investigations into the quality parameters of yoghurt has a potential impact on the health and well-being of its consumer. Hence, this study aimed to investigate the quality characteristics of some high-demand plain-set yoghurts sold in Colombo, Sri Lanka, during refrigerated storage. Four different yoghurt brands were selected based on a preliminary survey. They were examined for their physicochemical (titratable acidity, pH, milk solids non-fat, moisture, syneresis, fat, and protein) and microbiological attributes (total aerobic count, lactic acid bacterial count, yeast and mould count, and detection of coliform bacteria). SLS-approved tests were followed for analysis on days 4, 7, 14, 21, and 28 of their refrigerated storage. The findings were compared against the control, meeting the SLS standard. Microbiological analysis, which was performed in a timely interval during cold storage, showed the parameters *viz.*, total aerobic count and lactic acid bacterial count were within acceptable limits for all yoghurts. However, the yeast and mould count of the test samples was high. Coliforms were undetected in all brands, which is a positive remark concerning the hygienic level of these yoghurt brands. A decrease in moisture content was observed during storage. The results showed a drop in pH and a rise in titratable acidity in yoghurt with no significant difference ($p < 0.05$). All yoghurts examined for titratable acidity and syneresis resulted in higher values than the control. The syneresis effect of yoghurts showed a non-significant increase during storage ($p < 0.05$). Protein (0.75367 ± 0.00702 - 0.78233 ± 0.01604) and fat content (2.320 ± 0.013 - 3.132 ± 0.281) differed from the values printed on yoghurt. These variations can lead to or cause off-flavours and unacceptable microbiological changes in yoghurts during storage. Therefore, this study emphasized the necessity of manufacturing quality yoghurts with defined physicochemical and microbiological properties highlighting the importance of quality control during storage to ensure the consumer is supplied with a safe product.

Keywords: Microbiological, Physicochemical, Quality evaluation, Yoghurt