Effect of Refrigerated Storage on Quality of Set Yoghurt Made from Ultrafiltered Milk

*Narayana, N.M.N.K [a] and Gupta, V.K.[b]

[a] Department of Animal Science, Faculty of Agriculture, University of Ruhuna, Mapalana, Kamburupitiya, Sri Lanka

[b] Division of Dairy Technology, National Dairy Research Institute, Karanal, 132001, Haryana, India

* nayananarayana1970@gmail.com

ABSTRACT

Plain set yoghurts were manufactured by keeping milk solids level at 13.9% and fat at 3.3% in the yoghurt milk base, by the addition of calculated amount of 5 fold ultrafiltered cow skim milk retentate and cow milk cream, respectively. Storage quality of yoghurts was investigated at 4±1°C against control yoghurts made by milk standardized with skim milk powder. Significant (p<0.05) increase of acidity development and pH reduction of yoghurts was observed with advancing storage period. Whey syneresis appeared on day 17th of storage irrespective of the type of yoghurt and increased significantly (p<0.05) with increasing storage period. Experimental yoghurts had significantly (p<0.05) lower amount of whey syneresis compared to control yoghurts. Water holding capacity was significantly (p<0.05) higher in experimental compared to control yoghurts and increased significantly (p<0.05) with advancing storage period up to 9th day and thereafter decreased. Firmness increased significantly (p<0.05) with increasing storage period irrespective of the type of yoghurt and significantly (p<0.05) higher in experimental compared to control yoghurts. Lactic acid bacteria (LAB) count decreased significantly (p<0.05) and yeast and moulds increased significantly (p<0.05) with advancing storage period, irrespective of the type of yoghurt. No differences of LAB and yeast and mould count were found between experimental and control yoghurts. Coliforms were not detected in any of the yoghurts during storage. On the basis of increased yeast and mould count, shelf life of experimental yoghurts was observed to be 17 days at 4±1°C.

Keywords: Acetaldehyde concentration, Retentate, Textural attributes, Ultrafiltration, Water holding capacity