

USE OF MILK PROTEIN ISOLATE TO IMPROVE THE TEXTURAL PROPERTIES OF CURD

G.W.S.N. Kumari¹, M.T.L.K. Jayasumana¹, M.P. Edirisinghe², L.P.I.N.P. Jayawardene³, and W.V.V.R. Weerasingha¹

¹Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Anuradhapura, Sri Lanka.

²Milco Private Limited, Narahenpita, Sri Lanka.

³JL Morison and sons (Ceylon) PLC, Pethiyagoda, Kelaniya.

Commercial curd manufactures are used to add gelatine in curd production to obtain better textural properties while avoiding the defects like poor mouth feel. However, according to food standards and Ministry of Health in Sri Lanka, addition of gelatine into curd is banned. Therefore, the objective of this study was to evaluate the effectiveness of Milk Protein Isolate (MPI) on improved textural properties of curds. Four different levels of MPI as 0.5%, 1%, 1.5% and 2% were compared with control curd sample which was produced by adding milk powder instead of MPI. Physicochemical properties including pH, titratable acidity, syneresis were measured during the shelf life of 14 days. Hardness, chewiness and adhesiveness were assessed as textural properties. Microbiological safety was analysed during the shelf life of 14 days using coliform, yeast and mold counts. Sensory evaluation was carried out using 30 untrained panellists to evaluate the organoleptic properties of curd using colour, appearance, flavour, aroma, texture and spoon ability. Parametric, nonparametric data were analysed by ANOVA in SAS and Friedman test, respectively. Results showed that all the textural properties including hardness, chewiness and adhesiveness were significantly different ($p < 0.05$) among the treatments while the highest mean values were recorded in the 2% MPI added curd samples. There was no significant difference ($p > 0.05$) for pH and titratable acidity among the treatments. Curd developed with 2% MPI had the lowest syneresis compared to other treatments. According to the sensory evaluation results, appearance, texture and spoon ability were also much better in the 2% MPI treatment. Microbiological analysis showed that coliform was not observed during the storage period while yeast and mould growth were below the safe levels in all treatments. In conclusion, 2% MPI could be effectively used to replace gelatine like constituents in curd while enhancing the textural properties and consumer acceptance.

Key words: Curd, Milk protein isolate, Spoon ability, Texture