

**SELECTING LOW COST FREEZE DRIED
CULTURE FOR CURD TO REPLACE EXISTING
STARTER CULTURE**

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ABSTRACT

Curd is a thick, sour, well known fermented milk product having close resemblance to yoghurt. It has a distinct taste, richness and delicacy. Bacterial cultures, known as starters, used in manufacturing of curd. The starter is added to the product and allowed to grow there under controlled conditions. During fermentation, bacteria produce substances which give the cultured product its characteristic properties such as acidity, flavor, aroma and consistency. The aim of the study was, to select a low cost freeze dried culture for curd to replace existing starter culture without compromising the sensory attributes. Curds were prepared according to the standard procedure (SLS part 2:1989). Two starter cultures were used (A and B) which was lower in cost than the existing starter culture. Organoleptic characteristics of curds prepared with A and B were compared with the curd prepared with existing starter culture (C). "A" included *Streptococcus thermophilus*, *Lactobacillus delbrueckii* subsp. *Bulgaricus* and *Bifidobacterium* species and culture type "B" included *Streptococcus thermophilus*, *Lactobacillus delbrueckii* subsp. *Bulgaricus* and *Streptococcus lactis* subsp. *lactis* biova *diacetylactis*. Completely Randomized Design (CRD) comprising three treatments with four replicates was used as the experimental design. Parametric data analysis was done using ANOVA for significance under $\alpha = 0.05$ level using MINITAB 15 statistical software package. Non parametric data analysis was done by Friedman non-parametric test using MINITAB 15 statistical software package. The sensory evaluation was carried out with seven trained panelists using nine point hedonic scale to assess sensory attributes of appearance, flavour, texture, mouth feel and overall acceptability. Shelf life of the curd prepared was determined by analyzing titratable acidity, pH, yeasts and moulds, coliforms at five days intervals for 35 days and compared with the control. New culture type B was selected as the most cost optimized alternative culture for the curd. There was no significant difference ($P > 0.05$) in appearance, flavour, texture, mouth feel and overall acceptability between control and treatment 3. Results revealed that total coliform, yeast and mould counts, pH and titratable acidity were conformance to the Sri Lanka Standards limits. Organoleptic characteristics and incubation time of selected curd were similar to the control. The cost was reduced by 6 cents per 480 g curd tub due to the usage of new starter culture and it reduced the cost of production of Curd by Rs. 30,240 per month. The finished product specifications are within prescribed standards with a fair storage life of 35 days at 4 ± 1 °C.

Key words; Curd, Starter culture, probiotic