

Viability of probiotics in flavoured yoghurts made with different starter culture during storage

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Six different yoghurts were prepared with mango pulp and pineapple essence and sugar combination with *Lactobacillus bulgaricus*, *Streptococcus thermophilus*, *Lactobacillus acidophilus*, *Lactobacillus sporogens*, *Bifido bifidum*, *Bifido longum*, and *Bifido infantis* as starter culture. Three types of yoghurts were developed under each flavours, with different combination of probiotics and termed as A₁, B₁, C₁, A₂, B₂ and C₂. A₁, B₁, C₁ were mango yoghurts and A₂, B₂ and C₂ were pineapple yoghurts. Statistically, the significant difference were found in viable counts from 7th day to 14th day (P<0.05) in all yoghurts except in A₂ and C₂. The difference of viable counts from 0 day to 7th day was also found to be significant (P<0.05) in A₂ and C₂. No significant difference was found from 14th day to 30th day in all yoghurts as 90- 96 per cent viability loss of probiotics was observed by 14th day in all yoghurts. Pineapple yoghurt with probiotic blends of *Lactobacillus bulgaricus*, *Streptococcus thermophilus* and *Lactobacillus sporogens* i.e., B₂ had higher viability, among the different types of yoghurts developed.

Key Words : Probiotics, Yoghurts, Starter culture, Storage

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INTRODUCTION

Yoghurt is considered by nutritionists to be a very nutritious and healthy food compared to milk. Probiotic cultures are live bacteria which help in better absorption of nutrients. They play an important role in reduction of serum cholesterol, alleviation of lactose intolerance, reduction of diarrhea, prevention and suppression of colon cancer, stimulation of the immune system etc. Yoghurt is prepared by fermenting milk with starter cultures containing different types of probiotics, normally *streptococcus thermophilus* and *lactobacillus bulgaricus*. Use of different probiotic blends in combination have several health benefits. Lactic acid bacteria (LAB) and bifidobacteria are the most common types of microbes used as probiotics. Probiotics are commonly

consumed as part of fermented foods with specially added active live cultures, such as in yogurt, soy yogurt, or as dietary supplements. The introduction of yoghurt with added probiotics could play a significant role in national health care programs especially in developing countries, where diarrhoea and gastrointestinal problems are common. The increase in the per capita annual consumption of yoghurt in the majority of the countries has been attributed to both the ever-increasing availability of fruit or flavoured yoghurt, and to the diversity of presentations of the product. Although the main choice of any probiotic microbial strain to be used as a starter culture or a blend with a starter culture is based on the health aspects beneficial to humans (Gardiner *et al.*, 2002). The aim of the study was to investigate the changes in microbiological properties in mango and pineapple yoghurts made with different probiotic cultures during storage.

METHODOLOGY

The raw material viz., Double toned milk, powdered sugar, milk powder, pineapple essence, food colour, pasteurised mango pulp, and plastic sterile cups used for preparation of yoghurts were purchased from the local market.

The probiotic stock cultures required for the study i.e.,

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