

## **EFFECT OF FRUIT PROCESSING WASTE ON PHYSICOCHEMICAL, MICROBIOLOGICAL AND SENSORY PROPERTIES OF PROBIOTIC SET YOGHURT**

**K.P.G.N.M. Jayarathna, P.H.P. Prasanna and D.V.P. Chandramali**

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

The viability of probiotic organisms is important to obtain the expected health benefits from probiotic yoghurt. Therefore, a study was conducted to enhance the viability of probiotic organisms in set yoghurt by incorporating fruit processing waste powder at the rate of 0.2% (w/v). Pomegranate peel powder (PPP), mango peel powder (MPP) and pineapple core powder (PCP) were incorporated into yoghurt and samples were stored at 4°C for 21 d. The viability of yoghurt bacteria and probiotic culture (*Bifidobacterium animalis* subsp. *lactis* - BB12), pH, titratable acidity and syneresis of samples were evaluated on 1<sup>st</sup>, 7<sup>th</sup>, 14<sup>th</sup>, and 21<sup>st</sup> days. Proximate analysis of both fruit processing waste powders and yoghurt samples, sensory attributes and viscosity of yoghurts were evaluated initially. There was a significant difference ( $p < 0.05$ ) in crude fat, fibre and protein content among all fruit processing waste powders whereas PPP recorded the highest values for all the parameters. There was a significant reduction in pH of all the treatments and increase in titratable acidity during the storage period. The highest viscosity was recorded in the yoghurt with PCP, while the lowest was observed in yoghurt with PPP. The syneresis of all treatments increased during the storage period and the highest syneresis was observed in the yoghurt without adding fruit processing waste, while the lowest was recorded in yoghurt with PPP. A significant increase in probiotic viability was observed in the yoghurt with PCP, whereas probiotic count reduced in PPP incorporated yoghurt during the storage. Sensory data showed that PCP incorporated yoghurt leads for higher rank of appearance, odour, colour and overall acceptability. The yoghurt without adding fruit processing waste showed the highest rank for texture and taste. This study revealed that PCP exhibited prebiotic properties and it could be used as an ingredient in manufacturing probiotic yoghurt.

**Keywords:** Prebiotic, Storage period, Viability, Yoghurt