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Development of Fruit Yoghurt Incorporated with *Jak* (*Artocarpus Heterophyllus* L.) and Evaluation of its Physicochemical, Microbiological and Sensory Properties

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Yoghurt is manufactured by curdling of milk with purified cultures of two yoghurt bacteria such as *Lactobacillus bulgaricus* and *Streptococcus thermophilus* that ferment the milk sugar (lactose) into lactic acid. Fruit yoghurts are becoming popular in the world due to their different flavours, tastes as well as high nutritional properties. *Jak* (*Artocarpus heterophyllus* L.) is an underutilized fruit species in Sri Lanka and its uses are yet to be explored. The objectives of this study were to develop a value-added yoghurt with *Jak* fruit and to evaluate its sensory, physicochemical and microbiological properties. Four different types *Jak* fruit yoghurts were produced in the laboratory such as plain set yoghurt (control), yoghurt with candied *Jak* fruit with jelly as the top layer, yoghurt with fresh *Jak* fruit and yoghurt with fresh *Jak* fruit with jelly as the top layer. Sensory attributes such as appearance, taste, texture, aroma and overall acceptability of novel fruit yoghurts were evaluated after manufacture of yoghurts. The titratable acidity and pH of *Jak* fruit yoghurts were also determined on 1st, 5th, 7th, 10th, 12th, 15th and 17th days after manufacture. Completely Randomized Design (CRD) was used as the experimental design. Sensory evaluation results were analyzed using Kruskal-Wallis non-parametric One-Way ANOVA test with STATISTIX computer package (Ver 2.0) for windows. Results of sensory evaluation revealed that yoghurts which contained fresh *Jak* fruit with top layered jelly mix had significantly higher ($P < 0.05$) sensory properties. Microbiological analysis revealed that three new yoghurt products were free of *E. coli* and yeast and mold. Furthermore, physicochemical analysis of the new fruit yoghurts revealed that they are acceptable in terms of their nutritive quality with 3.5% fat and 23% Total Solid (TS) contents. The results of the present study suggest that high quality *Jak* fruit yoghurts can be produced by adding both fresh and candied *Jak* fruit with jelly mix as the top layer of the set yoghurt. This new product will help to utilize seasonal *Jak* fruit to a considerable extent.

Keywords: Fruit yoghurt, *Jak* fruit, Underutilized fruits, Sensory properties, Value addition