Development of Dragon Fruit (*Hylocereus polyrhizus*) Incorporated Novel Set Yoghurt

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Dragon fruit (*Hylocereus polyrhizus*) is a commercialized fruit grown in Sri Lanka with promising antioxidant properties. In this backdrop, well ripen dragon fruits were used to develop fruits incorporated set yoghurt. The pasteurized fruit pulp was added at the levels of 7.5, 10, 12.5 and 15% w/v with the selected levels of sugar and gelatin. Product accepted from sensory evaluation, was tested against the control (without added fruit) yoghurt for physicochemical, phytochemical and microbial analysis. Results showed that 10% sugar, 0.8% gelatin and 7.5% dragon fruit pulp were the best combination for fruit incorporated yoghurt according to the sensory analysis ($p<0.05$). Addition of dragon fruit significantly increased ($p<0.05$) the total phenolic content (3.57±0.04 mg GAE $100g^{-1}$), total monomeric anthocyanin (1.47±0.45 mg L^{-1}) and antioxidant activity (Ferric reducing antioxidant power assay: 0.186±0.00 µ mol Fe^{+2} $100g^{-1}$: IC_{50}:219.19±1.58 ppm) of fruit incorporated yoghurt compared to that of control yoghurt. During 18-days of storage period at refrigerated condition (<5 ^{0}C), acidity of all samples increased (<0.05), while p^H decreased (<0.05). Syneresis increased (<0.05) with the storage period in control while fruit yoghurt exhibited the decreasing pattern with the time. Viscosity and water holding capacity of all samples increased (<0.05) with the time. Yeast and mould count did not exceed the Sri Lankan Standard Institute (SLSI) recommendations (1000) during the 15-days of storage. *Staphylococci spp* and *Escherichia coli* was not detected throughout the storage. In conclusion, 10% sugar, 0.8% gelatin and 7.5% dragon fruit pulp were the best levels for dragon fruit incorporated yoghurt productions which have 15 days of shelf life at refrigerated conditions with promising antioxidant properties.

Keywords: *Antioxidants, Hylocereus polyrhizus, Total Phenol, Yoghurt*