

Development of a Fruit Nectar Using Locally Available Willard Mango Variety.

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Utilization of local mango varieties cost effectively for the production of fruit nectar that fulfils the quality standards without using imported frozen-mango pulp has been a challenge for the Sri Lankan major fruit beverage manufacturers. This study developed a consumer acceptable nectar using Willard mango at maturity stage, containing 12-15% total soluble solids. The pulp (25%) and sugar (8%) percentages were selected according to the standards of Sri Lanka Standards Institution and adjusted with a two factor factorial design to identify the optimum level of consumer perception. Two Alternative Forced Choice method was conducted according to ISO 5495:2005(E) standard procedures to identify Just Noticeable Difference (JND) via Weber's Law in both pulp and sugar amounts. Reference nectar samples with 0.065 gml⁻¹, 0.095 gml⁻¹, and 0.125 gml⁻¹ sugar concentrations, each containing a series of samples with increasing sugar contents, have provided Weber's constants of 0.154, 0.158, 0.120 respectively. Similarly, for the reference samples that contain nectar pulp concentrations of 0.150 gml⁻¹, 0.200 gml⁻¹, 0.250 gml⁻¹, have provided the Weber's constants of 0.033, 0.035, and 0.025 respectively. Moreover, a sensory analysis was conducted in accordance with the JNDs. As for the continual improvement, Kruskal Wallis Tests were conducted to identify the optimum experimental product from descriptive sensory analysis using semi-trained sensory panels. Sensory attributes, namely, appearance, odour, taste and mouth feel were assessed to improve overall acceptability. Final product was compared with the products of market leaders to improve the consumer acceptance from descriptive sensory analysis. Final Willard mango nectar was analysed for ash, (0.052 ± 0.002%), crude fat (0.482 ± 0.004%), crude protein (1.345 ± 0.022%), crude fibre (0.392 ± 0.002%), total carbohydrate (10.899 ± 0.000%), reducing sugar (0.392 ± 0.002%) on wet basis (w/w%) and for energy (1.254 kcalg⁻¹).

Keywords

Food product development, Mango nectar, Factorial design, Sensory analysis