

**Development of an Antioxidant Enriched Jam Using Soursop (*Annona muricata*), Winter Melon (*Benincasa hispida*) and Green Tea**

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**Abstract**

There is a great potential for developing value added products from both soursop and winter melon owing to their numerous nutritional and therapeutic effects. The objective of this study was to develop an antioxidant enriched jam using green tea, soursop and winter melon. The jam was prepared without adding pectin, by mixing 2:1 ratio of soursop: winter melon, citric acid (0.1%), sugar and green tea extract. Green tea extract was used in order to provide a pleasing yellow hue to the jam while enhancing its antioxidant level owing to its rich polyphenol content. Two sensory evaluations were performed separately in order to identify the best sugar and green tea percentages for the final product. Sensory data were analyzed using nonparametric Friedman test. Based on the sensory analysis, jam with 35% sugar, 24.37% TSS (total soluble solids) and green tea extract was selected as the best formulation. Proximate composition of the product was determined using AOAC methods. Total polyphenol content and antioxidant activity were determined by Folin-Ciocalteu method and DPPH assay respectively. Final jam contained 31.79 ± 0.47% moisture, 2.26 ± 0.12% ash, 0.97 ± 0.05% fiber, 9.26 ± 0.02% fat, 1.08 ± 0.27% protein and 42.66 ± 0.24% carbohydrate. Total energy content was recorded as 308.20 ± 2.08 kcal/ 100 g. Physicochemical properties were recorded as 68.33 ± 0.28 °Brix, pH of 4.98 ± 0.03, titratable acidity of 4.68 ± 0.13% and viscosity of 56.67 ± 0.58 mpa-s. Total polyphenol content and antioxidant activity were 15.79 ± 0.07 mg GAE g<sup>-1</sup> and 83.91 µg ml<sup>-1</sup> respectively. The total plate counts were less than standard maximum permissible limits throughout the storage period. The product could be safely stored for two months under refrigerated conditions.

**Keywords:** *Green tea, jam, physicochemical properties, soursop, winter melon*

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