

**DEVELOPMENT OF ANTIOXIDANT ENRICHED FRUIT  
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 of 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 with green tea, soursop and winter melon. Fruit 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 to give a natural color for the product. The first and the second sensory evaluations were done in order to identify the best sugar and green tea percentages for the final product respectively. Sensory data were analyzed by nonparametric Friedman test. Following the sensory analysis, jam with 35 % sugar and 24.37 % (TSS) green tea extract was selected as the best. Proximate composition of the final product was determined using AOAC standards. Physiochemical properties including pH, total soluble solids, titratable acidity and viscosity were determined. Total polyphenol content and antioxidant activity were determined by Folin-Ciocalteu method and DPPH assay respectively. Final jam contained  $31.79 \pm 0.47$  % moisture,  $2.26 \pm 0.12$  % ash,  $0.97 \pm 0.05$  % fiber,  $9.26 \pm 0.02$  % fat,  $1.08 \pm 0.27$  % protein and  $42.66 \pm 0.24$  % carbohydrate. Total energy content of jam was recorded as  $308.20 \pm 2.08$  kcal per 100 g. Physiochemical analyses showed that it had a total soluble solid contents of  $68.33 \pm 0.28^\circ$ Brix, pH of  $4.98 \pm 0.03$ , titratable acidity of  $4.68 \pm 0.13$  % and viscosity of  $56.67 \pm 0.58$  mpa-s. Moreover, total polyphenol content and antioxidant activity was  $15.79 \pm 0.07$  mg GAE g<sup>-1</sup> and  $83.91 \mu\text{g ml}^{-1}$  respectively. The total plate counts were less than the standard maximum permissible limits. Even though no artificial preservative was added to the developed fruit jam, it could be successfully stored under refrigerated conditions. In conclusion, antioxidant enriched jam with green tea, soursop and winter melon will be a unique product within the market due to its superior organoleptic properties and nutritional value.

Keywords: antioxidant, green tea, jam, physiochemical properties, soursop, winter melon