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Development of an Antioxidant Rich Beverage Using Effervescent Tamarillo Fruit Powder

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ABSTRACT

Currently, people have an increasing trend towards the consumption of healthy foods having a large content of antioxidants. These substances prevent the oxidative stress caused by several pathologic conditions. Particularly, studies have found a significant number of phenolic compounds in the fruits of *Solanum betaceum* besides its nutritional properties. This study was focused on the production of an effervescent powder from the *Solanum betaceum* fruit, employing a mixture design in order to get an optimized product with a rapid solubilization time, and good sensory and microbial properties. The phenolic content and antioxidant activity of the optimized effervescent powder were also evaluated. Results showed the product containing lyophilized *Solanum betaceum*, maltodextrin, citric acid, saccharose, sodium carbonate and tricalcium phosphate at 30%, 22.8%, 20.0%, 15.0%, 12.0% and 0.2%, respectively, as optimal. The antioxidant activity of the effervescent powder was higher than that of the lyophilized powder. This was explained by the synergistic effect of the antioxidant power of the fruit and the excipients. The total phenolic content of the effervescent powder and lyophilized product were also measured and was the main responsible for the antioxidant power. On the other hand, the titratable acidity, pH, and total suspended solids of the final drink were 0.20 CAE /100mL, 4.06 and 0.9°, respectively. This product also showed no viable aerobic bacteria, molds or yeasts. This study proved that the *Solanum betaceum* fruit could be processed into an ideal effervescent antioxidant-rich powder.

BIOGRAPHY

Julie is a Pharmaceutical Chemist and Ph.D. Pharmaceutical and Food Sciences. Professional with 14 years of industrial, research and teaching experience in product design and formulation. Julie has developed products for commercial exploitation purposes, has led research and innovation projects. It has academic publications and papers. Among the lines of research that Julie investigates are pharmaceutical technology and biopharmacy, colloids, organic chemistry of natural products, a physicochemical study of materials used in pharmacy, synthesis of organometallic complexes and oleochemistry.



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