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# Effect of ultrasound and chemical treatment on total phenol, flavonoids and antioxidant properties on carrot-grape juice blend during storage

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**Abstract**

Ultrasonics is one of the developing technologies which is being studied extensively on different food commodities. Our aim was to study the effect of sonication and chemical (Potassium metabisulfite, $K_2S_2O_5$,) preservation method on grape-carrot juice blend. Sonication/ultrasound treatments (20 kHz frequency, 70% amplitude level (525 W power), and pulse duration 5 s on and 5 s off, 5 min at 15 °C) of all the samples (250 mL) were performed by using an ultrasonic processor with 0.5 inch probe at 2 inch depth of the sample. Additionally, impact of sonication on 90 days of storage period at refrigerated temperature was also measured. It was observed that sonication had a positive effect on nutritional status of juice blend as it enhanced the total phenolic, flavonoid, reducing power and antioxidant properties of juice significantly ($p < 0.05$) with increase in sonication time. Sonication can be employed successfully for treatment of juice with better nutritional attributes from consumers' point of view.

Keywords: Carrot-grape juice blend, Sonication, Chemical preservation, Bioactive compounds, Antioxidant properties