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Effects of Microwave Heating Rate on the Color, Total Anthocyanin Content and Total Phenolics of Elderberry Juice during Come-up-Time

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Abstract : Elderberry could protect human health from oxidative stress, and reduce aging and certain cardiovascular diseases due to the presence of bioactive phytochemicals with high antioxidant capacity. However, these bioactive phytochemicals, such as anthocyanins and other phenolic acids, are susceptible to degradation during processing of elderberries to juice, jam, and powder due to intensity and duration of thermal exposure. The effects of microwave heating rate during come-up-times, using a domestic 2450 MHz microwave, on the color, total anthocyanin content and total phenolics on elderberry juice was studied. With a variation of come-up-time from 30 sec to 15 min at different power levels (10–50 % of total wattage), the temperature of elderberry juice vary from 40.6 °C to 91.5 °C. However, the color parameters (L, A, and B), total anthocyanin content (using pH differential method) and total phenolics did not vary significantly when compared to the control samples.

Keywords : elderberry, microwave, color, thermal exposure
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