

Sensory Evaluation of Blenderized Watermelon Juice With and Without the Rind by Children

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Objectives: Watermelon is high in fiber, vitamins, minerals, electrolytes, water and phytochemicals. The rind from watermelon is also rich in such nutrients. Among these health-promoting nutrients is L-citrulline, a non-essential amino acid, generally found in greater concentrations in the rind than in the flesh of the fruit. Watermelon rind also contains polyphenolic compounds including coumaric acid, vanillin, and 4-hydroxybenzoic acid. Despite its nutrient density, watermelon rind is often discarded. The purpose of the study was to examine the consumer acceptability of blenderized watermelon (WM) juice with rind. This study also compared the sensory characteristics of blenderized WM juice made with and without rind.

Methods: Twenty overweight and obese children (age 12.8 ± 1.96 y, BMI 26.26 ± 4.51 kg/m², 11 females and 9 males) completed a sensory evaluation of blenderized WM juice with and without the rind. Each sample was provided in a clear plastic portion cup with a randomly assigned number. Participants were instructed to rinse their

mouth with water before beginning and between samples. For a triangle test, participants were asked to identify a different sample from three samples presented. Additionally, participants were asked to rate the color, smell, flavor, sweetness, mouthfeel, aftertaste, and acceptance of the two blenderized WM juice samples, with and without rind, using a 7-point hedonic scale.

Results: Fourteen out of twenty participants (70%) identified the odd sample from the other two samples in the triangle test ($P = 0.010$). This indicates the majority of participants could correctly differentiate between the blenderized WM juice with rind and the one without it. Participants preferred the flavor ($P = 0.031$) and sweetness ($P = 0.009$) of the blenderized WM juice without the rind compared to the WM juice made with the rind. Regarding overall acceptance, the WM juice without rind had a greater acceptance score (5.05 ± 1.32) than that of the WM juice with rind (4.00 ± 1.30) ($P < 0.001$).

Conclusions: The blenderized WM juice without rind displayed significantly greater flavor, sweetness, and overall acceptance than the WM juice with rind. Thus, it is necessary to improve the sensory attributes of the WM juice with rind in order to make it more appealing as a nutrient-dense option for children.

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