SENsory analysis, Instrumental analysis and Consumers’ Acceptance Toward Multifunctional Ice Creams

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Abstract

The task of this study was to develop a multifunctional ice cream which can deliver multiple functional ingredients to consumers. A descriptive sensory analysis was carried out to investigate the effect of adding varying levels of dietary fiber (0%, 5%, 10% and 15%) to a multifunctional ice cream that contained fixed levels of antioxidants (12% of açaí), prebiotics (4%) and probiotics ($10^8$ cfu/mL) on sensory properties. The results showed that an increase in dietary fiber contents significantly increased the perceptions of gooeyness, gumminess, creaminess, mouth coating, sweetness, sweetness aftertaste, and wood flavor aftertaste, but decreased the perceptions of hardness and iciness. Based on a texture analysis, dietary fiber increased the overrun and viscosity, but decreased the melting rate of ice creams. The antioxidant capacities and flavor profiles of açaí puree and multifunctional ice creams were also determined. Moreover, consumers’ degree of liking for multifunctional ice creams was measured by a hedonic sensory study. The results indicated that consumers preferred 0% and 5% dietary fiber containing multifunctional ice creams. Even though ice cream containing 5% dietary fiber showed some differences to the control ice cream in the descriptive and instrumental analyses, there was no significant difference in consumers’ preference. Therefore, an ice cream containing 5% of dietary fiber, 4% of prebiotic, $10^8$ cfu/mL of probiotic and 12% of açaí can be considered an ideal formulation for a multifunctional ice cream.