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Developing fruit smoothie for children and adolescents

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The increasing of overweight in children and adolescents requires new healthy habits for this group. The development of products, such as fruit smoothie, will contribute for a healthier diet, mainly when involving participation of the target group from the beginning of product development. Therefore, to choose a sensory methodology that is adequate for children is a key point. The objective of this study was to develop fruit smoothies and to evaluate the liking using 9-point hedonic scales, as well as to characterize the beverages using the CATA questions. The identification of the fruits used and the 20 terms used to describe them were obtained from the target group in preliminary studies. Nine pasteurized formulations with different proportions of mango, orange and banana were evaluated by 192 children and adolescents, aged 9 to 14 years old, residents in two districts of Rio de Janeiro city, which have distinct human development index - HDI. The liking data were analysed using ANOVA and Fisher test, and the CATA questions data using Correspondence Analysis (CA). Results have shown that there was a significant difference ($p < 0.05$) in the average liking between formulation 5 (mean 6.7), and formulation 2 (mean 5.7), for both HDI groups. The Cochran's Q test showed significant difference in the frequency of use of three terms for the average HDI and six terms for the high HDI. The first two dimensions of the CA explained 53% and 60% of variations in the average and high HDI group respectively. Formulation 5 was characterized by *I loved it, mango flavor and different taste good*. Formulation 2 was described by participants as *more banana flavor and thick*. The results suggest the participants' HDI had an effect on the smoothie evaluation. However, despite this effect, the descriptive methodology was suitable for using with children and adolescents.

Keywords: Children, Product Development, Smoothie, CATA