Miracle Fruit Application in Sour Beverages: Effect of Different Concentrations on the Temporal Sensory Profile and Overall Linking

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Abstract : Currently, there is a great demand for the use of natural sweeteners due to the harmful effects of the high sugar and artificial sweeteners consumption on the health. Miracle fruit, which is known for its unique ability to modify the sour taste in sweet taste, has been shown to be a good alternative sweetener. However, it has a high production cost, being important to optimize lower contents to be used. Thus, the aim of this study was to assess the effect of different miracle fruit contents on the temporal (Time-intensity - TI and Temporal Dominance of Sensations - TDS) sensory profile and overall linking of lemonade, to determine the better content to be used as a natural sweetener in sour beverages. TI and TDS results showed that the concentrations of 150 mg, 300 mg and 600 mg miracle fruit were effective in reducing the acidity and promoting the sweet perception in lemonade. Furthermore, the concentrations of 300 mg and 600 mg obtained similar profiles. Through the acceptance test, the concentration of 300 mg miracle fruit was shown to be an efficient substitute for sucrose and sucralose in lemonade, once they had similar hedonic values between 'I liked it slightly' and 'I liked it moderately'. Therefore, 300mg miracle fruit consists in an adequate content to be used as a natural sweetener of lemonade. The results of this work will help the food industry on the efficient application of a new natural sweetener- the Miracle fruit extract in sour beverages, reducing costs and providing a product that meets the consumer desires.

Keywords : acceptance, natural sweetener, temporal dominance of sensations, time-intensity

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1