ABSTRACT

The prevailing ubiquity of carbonated beverages in the consumer market is coupled with concerns regarding their high sugar content, which is implicated in health risks such as obesity, cardiovascular diseases, type II diabetes mellitus, and certain cancers. Acknowledging these health implications, PT Sinar Sosro is actively reformulating its products to reduce sugar content. This project focused on formulating a reduced sugar variant of carbonated peach-apple beverage using sweetness modifier flavors that had similar sensory properties to the normal sugar formula, as well as assessing the acceptability of the reduced sugar variant (F2). Physicochemical properties were also analyzed, including CO_2, pH, Brix, and titratable acidity of the carbonated peach-apple normal sugar (F1) and reduced sugar (F2) formulas. The triangle test results comparing F1 and F2 water-based samples showed no significant overall sensory difference, indicating the success of the sweetness modifier flavors utilization in emulating similar sensory perceptions provided by sugar. Regarding Brix, significant differences were found between F1 and F2, whereas CO_2, pH, and titratable acidity were not significantly different. Furthermore, the 9-point hedonic scale test revealed a highly acceptable score for the color, aroma, taste, and overall liking attributes of F2.

Keywords: *Carbonated beverages, physicochemical properties, reduced sugar, sensory properties, sweetness modifier flavors*