SENSORY ANALYSIS OF LOW FAT STRAWBERRY ICE CREAMS PREPARED WITH DIFFERENT FLAVOR CHEMICALS AND FAT MIMETICS

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ABSTRACT

The objective of this study was to understand the release behavior of five strawberry flavor compounds in ice cream with fat mimetics, and to reformulated low-fat ice cream with Simplesse to match the flavor profile of full-fat ice cream.

Furaneol™ was perceived more strongly in full-fat ice cream, while cis-3-hexen-1-ol, α-ionone, γ-undecalactone and ethyl-3-methyl-3-phenylglycidate were perceived more strongly in low-fat ice cream. However, ice creams with Simplesse® and full-fat ice cream had similar sensory characteristics.

Cooked sugar flavor, sweetness and their aftertastes were determinants for the degree of taste similarity with full-fat ice cream. The reformulated product, which was the closest in sensory characteristics to full-fat ice cream, was either the one in which the concentration of γ-undecalactone was decreased individually by 25% or the product, in which γ-undecalactone and cis-hexen-1-ol were decreased by 25%.

No significant differences for consumer test between the reformulated products and full-fat ice cream.