Introduction

Yogurt is a basic dairy fermented product, which is made from milk of varying fat content up to a maximum of 10%. The fat content affects the texture properties of yogurt, and modulates taste and flavor perception. It leads to changes in the distribution of flavour molecules within the product and serves as flavour precursor and carrier.

The objective of the present study was to determine the relationship between temporal aspects of product-associated sensory attributes and product-evoked emotions during consumption of commercially available yogurts with different fat content (0.1%, 1.0%, 3.6%, 10%).

Methods

Temporal Dominance of Sensations (TDS) was applied in order to investigate the temporal profiles of sensory descriptors. The temporal profiles of emotions were assessed by Temporal Dominance of Emotions (TDE).

47 untrained individuals evaluated 10 sensory attributes and 10 emotion terms, relevant for yogurt description, selected by check-all-that-apply (CATA) during a defined testing period of 60 seconds.

Results

TDS and TDE results showed that the perceived sensory attributes and food-evoked emotions were associated with the fat content. The fat-reduced yogurts (0.1% and 1.0%) were mainly characterised by the sensory attributes sour, astringent, fermented flavour (Fig. 1, 3) and emotions surprised and dissatisfied at the beginning and by neutral as well as calm towards the end of the evaluation period (Fig. 2, 4). The yogurts with higher fat content (3.6% and 10%) were associated, apart from sourness, with creamy flavour and creamy texture (Fig. 5, 7) as well as positive emotions like pleasant and satisfied at the start of the evaluation and similar to the fat-reduced yogurts with neutral and calm terms at the end of the testing (Fig. 6, 8).

Conclusion

Our findings showed consistency in the relationship between selected sensory attributes and emotions during yogurt consumption depending on fat contents. The products with higher fat contents with a dominantly milky, buttery, creamy flavour and texture evoked pleasantness, enjoyment, satisfaction and satiation. In contrary, in the fat-reduced yogurts dominated sourness, fermented flavour and a watery, astringent mouthfeel, which resulted in a rather unsatisfied and surprised emotional conditions (Fig. 9).