

### **Sensory interactions between sugar, fat, texture and flavour in protein-enriched strawberry flavoured yoghurts**

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#### **Introduction**

It is widely accepted that a high sugar consumption contributes to the development of chronic diseases, such as diabetes mellitus and coronary heart problems. Thus, sugar reduction in food products consumed on a daily basis is of utmost interest. Yoghurt is a well-liked dairy product in Switzerland and consumption is rather high with 16.6 kg/capita in 2016. In addition, the consumption of protein enriched, fat reduced dairy products has increased in Switzerland and many western countries over the last years. Structure and composition have a significant influence on sensory perception and thus consumer acceptability of foods. However, studies investigating the sensory interactions in a complex food matrix such as yoghurt are still scarce.

#### **Aim and Methods**

The aim of the present study was to evaluate sensory interactions between flavour and texture of stirred fruit flavoured yoghurts differing in sugar, fruit aroma, protein and fat content. Two levels of sucrose, strawberry aroma, fat and protein concentrations were chosen for the formulation of test yoghurts. Concentrations were selected to simulate market products. The high sugar level was slightly above the average for strawberry yoghurts found on the Swiss market, whereas the low level corresponded to a yoghurt markedly reduced in sucrose content. A trained panel evaluated the aroma, taste and texture of all test yogurts using descriptive analysis. In addition, the composition of the headspace as well as rheological properties of the yoghurt samples were determined.

#### **Results**

A higher sample viscosity resulted in a slight, nevertheless non significant increase of intensity of flavour attributes. Results indicate that the intensity of strawberry flavour was more affected by sugar and fat than protein content. A high sugar concentration and a high fat content resulted in an increase in perceived fruitiness independent of the viscosity level.

#### **Conclusions**

It is a challenge to formulate protein-enriched low fat and sugar reduced yoghurts with an intense authentic strawberry flavour. Further research is needed to gain a more profound insight into interactions in order to formulate such products which are well accepted by consumers.

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