# Sugar reduction in strawberry yoghurt through the usage of sensory difference thresholds

Matteo Angelo Lucchetti[1], Helena Stoffers[1], Esther Infanger[2,] Barbara Guggenbühl[1],

*[1] Agroscope , Swiss Federal Research Station, Liebefeld, CH-3003 Berne, Switzerland*

*[2] Federal Food Safety and Veterinary Office FSVO*

**Abstract**: It is known that a high sugar intake 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 special interest. The aim of the presented work was to determine the just noticeable difference (JND) in sugar concentration in strawberry yoghurt which can be perceived.

Initial sugar concentration levels of 6, 9 and 12% sucrose were chosen for the sensory tests. In parallel, sugar reduced yoghurt samples were produced whereby sugar reduction steps between samples were kept constant. Paired comparison tests were used to determine the JND for sweetness Each pair consisted of a sample containing either 6%, 9% or 12% sucrose and a sugar-reduced sample. Panelists were asked to indicate the sweeter of the two samples. In each test session six pairs of yogurt were presented in descending order,. Each concentration series was replicated three times. JND's were defined as the concentration difference where 75% of the panelists exhibited an equal or lower JND. Results suggest that starting at sugar concentration levels of 6%, 9% and 12%, sucrose can be decreased by 0.375, 0.625 and 1.0%, respectively, without being noticed by consumers. These findings support data found in literature that difference thresholds depend on the concentration range of interest and on the food matrix. A similar sensory approach could be used to reduce sucrose in other food products in order to contribute to the public health issue of reducing our sugar intake.