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Keynote talk

Oral Friction and Texture Perception of Food: Red Wine, Chocolate and Cream.

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It is widely recognised that many food texture attributes, for example creaminess and smoothness, are related to friction experienced in the mouth during eating. Friction is essentially determined by the changing film properties (composition, component distribution, thickness) as the food is masticated in the oral cavity. Currently, the global food industry is making considerable efforts to develop healthy food formulations (less salt, fat and sugar) with acceptable sensory attributes. However, the healthy products, for example low-fat yoghurt, are often disappointing with poor consumer ratings. At present sensory attributes are assessed in panel tests which are expensive, time-consuming and often inconclusive. The development of an appropriate oral-tribology test to measure the friction response of semi-solid foods as they are mechanically degraded could provide an important industry tool. However, the tribology design must be carefully considered if the oral mechanisms are to be simulated in a new bench test and these aspects are considered in the talk. The described approach provides a simple method to assess food friction properties and, if linked to consumer studies, the relationship between mouthfeel properties and preference. It will also provide fundamental insights into food composition and structure changes during mechanical degradation and thus contribute to the development of texture-optimised food formulations.