ALTFoodSense Project – Artificial Saliva-Based Technologies to Enhance Sensory and Nutritional Properties of Food

Elsa Lamy[1]; María Pérez Jiménez[1]; Fernando Capela e Silva[1,2]; M. Raquel Lucas[1,3]; Cristina Conceicão[1,4]; Cátia Moreira de Sousa[2]; M Rosario Martins[2]; Maria da Graça Machado[1,4]

1. *MED (Mediterranean Institute for Agriculture, Environment and Development) & CHANGE – Global Change and Sustainability Institute, Universidade de Évora, Portugal.*
2. *Department of Medical and Health Sciences, School of Health and Human Development, Universidade de Évora, Portugal*
3. *Department of Management, School of Social Sciences, Universidade de Évora, Portugal*
4. *Department of Zootechnics, School of Science and Technology, Universidade de Évora, Portugal*

Keywords: artificial saliva-based technology; predictive models for food acceptance; saliva-food interactions; nutrient bioavailability; food oral perception.

Abstract

The ALTFoodSense project aims to transfer existing scientific knowledge into practical tools that help to predict sensory and nutritional characteristics of food products. This is based on the innovative use of artificial saliva to simulate the food-saliva interactions occurring in the mouth, through objective and reproducible assessments. This approach offers a promising complementary tool to traditional sensory panels and physicochemical analyses, addressing limitations in reproducibility, cost, and applicability to novel food matrices.

By combining insights from different fields such as saliva biochemistry and sensory science, ALTFoodSense introduces the "SensePredict" technology, a prototype capable of predicting organoleptic sensations and nutrient bioavailability based on the interactions between food components and saliva. By considering the variability of saliva composition among different consumer groups (e.g. gender, age, ethnicity), this technology not only provides quality control, but also supports the development of targeted food products for specific consumer groups with distinct salivary and nutritional profiles.

ALTFoodSense also promotes the transfer of scientific results not only to the food industry sector, but also to students and other professionals. This aligns directly with the goals of the EdU_Saliva, supporting the inclusion of saliva science into higher education through accessible, innovative, and interdisciplinary teaching tools.

EdU_Saliva
Learn. Discover. Innovate.
Co-funded by the European Union