

# Improving Tasting Processes in the Food Industry using ICT

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**Abstract**—Sensory Analysis uses Tasting Panels to evaluate products according to the way they are perceived by human senses, thus the main task of a professional taster is to assess the sensorial characteristics of products (appearance, odor, touch, taste and noise). This type of panels are widely used in the food industry (e.g., wine, olive oil, chocolate), as well as in other types of industry, for example cosmetics and perfumes. The tasting process typically generates a large amount of data that is used in decisions about the products and can also be used to evaluate the tasters. The use of Information and Communication Technologies (ICT) as a way to collect and store the data, incorporate different methods and provide results is believed to contribute to a consistent tasting process. The purpose of this work is to present an ICT-based solution that includes statistical methods and techniques used to support decisions regarding the results of the Tasting Process and also, if required, to assess tasters' performance. This solution, that incorporates two main subsystems (Tasting Process and Taster Performance), combines the Sensory Analysis and the ICT knowledge areas with benefits both for researchers and for the tasting process' stakeholders.

**Keywords**— food industry; ICT; sensory analysis; tasting panels

## BIOGRAPHY

**Ana Luísa Ramos** graduated in Industrial Engineering and Management, received the M.Sc. degree in Computers Engineering from the University of Coimbra, Portugal, in 2002 and the Ph.D. degree in Industrial Management from the University of Aveiro, Portugal, in 2011. She is an Assistant Professor of Industrial Engineering and Management with the University of Aveiro where she teaches since 1997 (Simulation, Operations Management and Logistics). She is member of the Department of Economics, Management and Industrial Engineering Executive Board and Council. She is an integrated member of the Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP) of the University of Aveiro being the research work focused on systems engineering and modeling & simulation of complex systems, with applications in the industrial sector and in the transportation sector. She has participated in scientific research projects and industry-based projects. She co-authored book chapters and several scientific papers published in peer reviewed international journals and international conferences proceedings.

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**Bento Amaral** graduated in Food Engineering, at School of Biotechnology of Catholic University of Portugal (Porto), with a 6-month internship at the Institute of Enology in Bordeaux. He is Director of the Technical Services and Certification of Douro and Porto Wine Institute (IVDP) since november 2013. He was, from november 1999 to november 2013, chief of the Wine Tasting Service of IVDP. He has been teaching, since 2002, Sensory Evaluation and Sensory Evaluation of World Wines at the post-graduated course of Enology, in the School of Biotechnology. He is member of the Sensory Analysis Working Group of the *Organisation Internationale de la Vigne et du Vin* (Intergovernmental Organization) since 2009 and member of the Technical Committee for Standardization CT114 since 2008.