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BOOK OF ABSTRACTS

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CONGRESS OF FOOD ENGINEERING

CHALLENGING FOOD ENGINEERING AS A DRIVER TOWARDS SUSTAINABLE FOOD PROCESSING

UNIVERSITY OF ALGARVE, GAMBELAS CAMPUS
FARO / ALGARVE / PORTUGAL
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“Challenging Food Engineering as a Driver Towards Sustainable Food Processing”

e-Book of Abstracts

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Development of Gastronomic strategies for the application and valorization of new inverse emulsions of vegetable origin

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Strategic innovation must anticipate consumer's acceptance and commercial potential in their design process. The main objective of this study was to develop gastronomic applications with the use of water-in-oil (60 to 65% lipid phase) innovative inverse emulsion prototypes (which preserve expensive/seasonal raw materials and value surplus/regional by-products) (1), appealing to the final consumer. Five emulsions were analyzed - 3 strawberry and pepper (red and yellow) processed differently, with aqueous vegetable phase and 2 mustards with red fruits or beet. Initially a sensory evaluation was carried out (hedonic scale 1-9) with a panel of tasters (9 food professionals) and the online Foodpairing[®] tool was used. After defining the purpose of each culinary preparation (starter, main course, dessert, for Food Service or domestic end consumer), a recipe set was developed based on previous results and also based on culinary know-how, creative/aesthetic talent of the researcher. A script of the tasting menu was established, and also a test book with parameters of acceptance/purchase intention/marketing/ use potential. Finally, an acceptance test was carried out through a tasting lunch inserted in a pedagogical restaurant for 40 consumers (domestic/food professionals). The panel positively evaluated all emulsions (global appreciation mean values between 5.6 and 7) but none was pointed out as having potential gastronomic use by itself, but always as an ingredient of some composition. There were 33 combinations of ingredients with the Foodpairing[®] tool, which, cross-checked with the panel of tasters, led to 34 gastronomic compositions further developed in a culinary workshop. At the evaluation lunch, the yellow pepper emulsion was the most appreciated (average value of 7.51) and the strawberry was the least appreciated globally (average value of 6.65). Regarding delicacies developed and presented, all had positive appreciation (average values of global appreciation between 6.87 and 8.65). The intention to purchase varied for each emulsion and the type of delicacy in which it was used: in some it increased by 57%, but in others it decreased, for example by 14%; globally, most tasters would buy the creams analyzed and see potential commercialization in all emulsions.

The opinion of the chefs was quite important and useful, but not always coincident with the ingredients proposed by the application of Foodpairing[®]. Global innovation implies acceptance by the consumer and education for the gastronomic application, situation evidenced with the consumer test that was realised.

Keywords: Gastronomic applications, Food emulsions, Innovation, Regional vegetable by products