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Consumer perception and willingness to try new food products produced by new food technologies

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Aim: The increased demand for healthier and sustainable foods is a major driver for the development of a wide variety of processing technologies, such as ohmic heating, high-pressure processing and edible coating. These technologies have the advantage of better preserving the original quality of food products. Therefore, understanding consumers' needs and possible barriers to acceptance of these technologies helps to better assess the commercial viability of new food products resulting from their application. The aim of this research is to evaluate Portuguese consumers' attitudes towards new food technologies and understand their willingness to try new food products produced with such technologies.

Methods: 704 consumers were interviewed at their homes and selected using random route techniques. The questionnaire presents seven groups of questions with the following dimensions: i) Sensory Appeal and Food Convenience subscales from the Food Choice Questionnaire, ii) Domain-Specific Innovativeness, iii) Concerns about price/cost of food, iv) Food and Nutrition Knowledge, v) Food Neophobia Scale, vi) Food Technology Neophobia Scale, and vii) Suspicion regarding novel foods. To evaluate their willingness to try products resulting from the application of new food processing technologies, different product concepts were created using Conjoint analysis. The product concepts were based on the following characteristics: food technology, product preservation, benefits associated with the application of food technology and price of the food product.

Results: Four clusters showed that certain consumer segments ("Wealthy and relaxed" and "Adopters") were more likely to buy food from new technologies. The segments of consumers ("Rejectors" and "Conservative"), with low academic degrees, low monthly income, and over 50 years, reveal high levels of food neophobia and food technology neophobia. There is a generally low level of adoption of innovation among Portuguese consumers, associated with higher levels of neophobia in relation to new food technologies. Food neophobia tends to be low, although there is a higher level of suspicion regarding novel foods.

Conclusions: Care must be taken when communicating the benefits to consumers of new technologies, to assure concise messages regarding their positive impact on food characteristics, and trusted information, in order to avoid new product rejection.