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Developments in active and intelligent food packaging

In industrialized countries, hectic life pushes consumers to eat more packed food. These products shelf life is determined by safety and/or quality minimal standards required but expiring dates may be unreal or too short, leading to food loss. The food loss impact on food security is a world striking concern. According to FAO (2015), in developing countries 40% losses occur at post-harvest and processing levels while in industrialized countries they occur at retail and consumer levels. Therefore, shelf life extension of packed food keeping quality, highly contributes for food sustainability. Food packaging protective passive role is changing into an active preservation role. Research is now focused on the inner layers behavior of food packages, which become a mean of releasing agents (antimicrobial, antioxidants or even nutritional supplements) to the food surface rather than being dissolved in bulk. Development of packaging materials including in their matrix directly or through encapsulation (active agents sealed in capsules at nano/micro scale), agents that will be released to food surfaces at a controlled rate, only when needed, are underway. The development of several indicators (chemical and biological sensors) also render packaging intelligent once it can alert to changes throughout the food chain that may endanger product safety (e.g. end of shelf life approaching, wrong storage temperature or pH change). An ActInPak COST Action FP1405 was created to promote the development of scientific and technical solutions of active/intelligent packaging and to perform a SWOT analysis for commercial exploitation of these innovative packaging.

Biography

Maria Margarida Cortez Vieira is the Head of Department of Food Engineering and Director of the Laboratories of Food Product Development and of Food Processing at the High Institute of Engineering of University of Algarve. She holds degrees in Food Engineering, (PhD and Masters) and a High Diploma in Chemical Engineering. Her scientific area of interest is emergent technologies applied to food preservation including active packaging. She has more than 30 scientific publications, belonged to the scientific commitee of several international conferences and is a member of the editorial board of the *Iseki International Journal of Food Studies and of the American Journal of Bioscience and Bioengineering.*

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