

On the use of herbs and herb extracts for minimizing food loss in plant protein instant meals

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Abstract

The growing world population demands increased high-quality protein-rich food sources. According to the EU protein strategy, investing on plant-based proteins' is an environmentally sustainable means to improve EU's food security (including physical availability, accessibility, nutrient intake, and stability over time). To exploit the advantages of plant protein sources and enhance their benefits for society, it is necessary to create attractive meals that are adapted to the modern lifestyle and at the same time enhance the shelf life of the meals with minimal use of chemical preservatives. In the last years we have explored the design and manufacturing of a plant-based protein instant meal based on pulses, in particular fava beans. The meal is shaped as a de-hydrated powder to the extent that micro-organisms such as mould, yeast and bacteria cannot grow, in order to enhance shelf life. Interestingly, much of the nutritional benefits of the original natural food, such as protein content, are not destroyed by drying and are retained for many months when the meal is stored. To further extent the shelf-life of the pulse puree meals we examined the effect of adding dried oregano and dried oregano extract in the puree powder. In both cases the use of oregano is shown to enhance the control of microbial growth and additionally improve the flavour of the meal. Accordingly, the present study confirms the results of previous works such as Sikora et al. (2021), reporting that the integration of herbs and herb extracts into foods may act as a natural preservative. Following our results, the use of herbs and herb extracts into the food supply chain offers a natural way to leverage better food stock management and significantly reduce food losses, particularly for plant-based instant meals.

Keywords: Food Drying; Natural Preservatives; Plant protein meal;

References

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