Effect of the Addition of Tomato Peel Extract Microcapsules on the Volatile Profile of Sausages during Storage.

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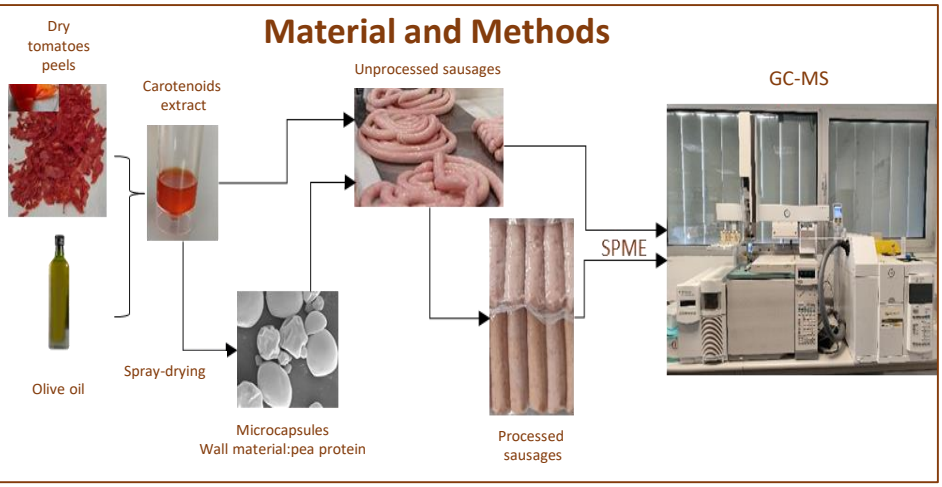
Introduction

Microencapsulation is a technology used to protect bioactive compounds in food systems. In meat matrices, it can improve the nutritional and functional profile of the product. A relevant application is the encapsulation of natural antioxidant extracts, such as carotenoids, from agro-industrial by-products [1]. However, the inclusion of microencapsulated bioactive compounds in food matrices requires the evaluation of their possible interactions and negative effects on the food.

The aim of this study was to study the influence of the addition of microcapsules containing an extract from tomato peel (carotenoids) on the generation of volatile compounds during the storage of sausages.

Material and Methods



Results and Discussion

Figure 1 shows the heat map of volatile compounds associated with carotenoids oxidation in sausages added with carotenoid extract and microcapsules and without addition, before and after 1 month of storage. 4-heptenal, 6-methyl-5-hepten-2-one and hexanal obtained higher area units in sausges added with the extract. In that samples, it was also noted the increase of benzaldehyde during storage.

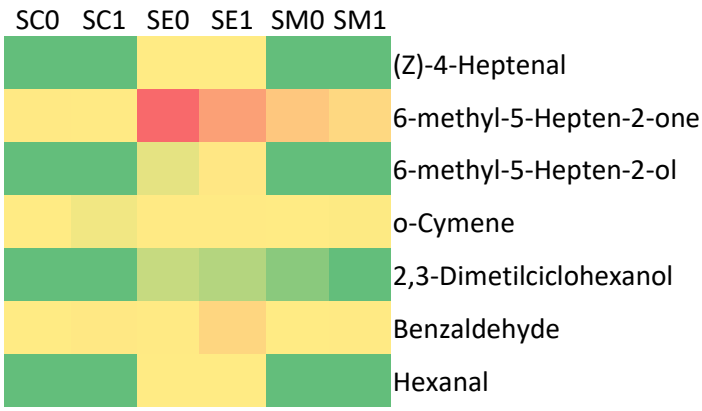


Figure 1: Heat map of volatile compounds associated with carotenoids oxidation in sausages added with carotenoid extract (SE) and microcapsules (SM) and without addition (SC), before (0) and after 1 month of storage (1). The values are scaled from green (lower areas values) to red (higher areas values).

Conclusion

These findings indicates the capability of the microencapsules of pea protein as a highly effective strategy for incorporating carotenoids into meat matrices avoiding their degradation to undesirable volatile compounds during storage.

Bibliography

1. Perez-Palacios, T., et al.,. Foods, 2022. **11**(20): p. 3291.

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