INVESTIGATION OF THE PHYSICOCHEMICAL, TEXTURAL AND ANTIOXIDANT PROPERTIES OF CREAM CHEESE WITH ALGINATE-ENCAPSULATED PLANT EXTRACTS

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Abstract:
This study investigated the antioxidant activity of extracts from three aromatic plants - *Ocimum basilicum* L., *Satureja hortensis* L. and *Rosmarinus officinalis* L., encapsulated in alginate. The encapsulation efficiency was controlled by FTIR and SEM analysis. The alginate-encapsulated plant extracts were used for the preparation of cream cheese. The addition of 0.6–0.9% alginate-encapsulated plant extracts was found to increase the pH value compared to the control sample, which confirms the preservation potential of the encapsulated plant extracts due to the inhibition of microorganisms. After 28 days of storage, the hardness and adhesiveness of the cream cheese showed an essential increase, and the cohesiveness and gumminess of the samples gradually decreased. The improvement in texture parameters is probably due to the better water-holding capacity of the alginate-encapsulated plant extracts in the fortified cream cheese. The microcapsules based on sodium alginate ensured the stability of the polyphenolic compounds of the plant extract and led to their controlled release from the cream cheese during storage. Mutual information analysis was applied to establish the correlation between the concentration of plant extracts encapsulated in alginate and the sensory, physicochemical, textural and antioxidant properties of cream cheese.

Key words: *basil, cream cheese, encapsulation, extraction, quality, rosemary, summer savory.*

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