EVALUATION OF ANTIOXIDANT ACTIVITY AND BIOACCESSIBILITY OF POLIPHENOLIC COMPOUNDS OF YOGURT ENRICHED BY ALGINATE-ENCAPSULATED BASIL EXTRACTS

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Yogurt is widely consumed worldwide due to its nutritional and gastrointestinal health benefits and may represent an excellent matrix for incorporating ingredients and/or nutrients from various plant sources. The addition of aromatic plants or plant extracts allows obtaining yogurt with increased biological properties due to the presence of polyphenolic compounds. In this study, alginate-encapsulated basil extracts were added to yogurt in order to obtain products with functional properties. Yogurt samples with alginate-encapsulated basil extracts were subjected to the process of gastrointestinal digestion *in vitro*, after which the total polyphenol content and antioxidant activity (DPPH) of the yogurt samples during storage were determined. The results of the study demonstrated that the total content of polyphenols extracted from yogurt samples with alginate-encapsulated basil extracts after *in vitro* digestion was influenced by the concentration of alginate-encapsulated basil extracts. Increasing the concentration of alginate-encapsulated basil extracts in yogurt from 0.15% to 0.60% led to an increase in the total content of extracted polyphenols from 4.21 mg GAE/100 g to 17.84 mg GAE/100 g yogurt, which also led to a 1.12-fold increase in antioxidant activity. During the 30 days of storage, the total polyphenol content released in the yogurt with alginate-encapsulated basil extracts registered a constant increase. The retention of polyphenolic compounds during storage was 125.46% for the yogurt sample with 0.60% alginate-encapsulated basil extracts. Similar results were obtained for the other samples of yogurt fortified with alginate-encapsulated basil extracts. Therefore, sodium alginate encapsulation of basil extract was effective in stabilizing polyphenolic compounds during the 30 days of yogurt storage. The production of yogurt with alginate-encapsulated basil extracts brings together the beneficial qualities of yogurt components and the polyphenolic compounds found in basil extract. This result can be regarded as a functional food, offering enhanced health benefits.

Keywords: alginate-encapsulated basil extracts, *in vitro* bioaccessibility, antioxidant activity, phenolic compounds, yogurt.

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