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Abstract

A new strategy for the simultaneous carrying of zinc and yerba mate antioxidants into starch-alginate matrices was developed. Firstly, the use of native corn starch as vehicle of zinc was evaluated and then the starch-zinc carriers were incorporated into calcium alginate beads containing antioxidant extract of yerba mate. The loading capacity and the antioxidant activity of the beads were determined. Moreover, the systems were characterized by scanning electron microscopy (SEM), Fourier transform infrared spectrometry (FT-IR) and differential scanning calorimetry (DSC). Compartmentalized beads containing yerba mate polyphenols and zinc were obtained without affecting their morphological aspect. Moreover, the encapsulating systems exhibited a high antioxidant activity assayed by both, β-carotene linoleate model system and DPPH radical scavenging method. FT-IR and DSC analysis revealed that interactions between the active compounds and the encapsulating matrix were not formed. The proposed methodology constituted a useful strategy for the simultaneous transport of yerba mate antioxidants and zinc by preventing a possible interaction between them. The new beads could be incorporated into