

Characterization of Antioxidant-Antimicrobial Microcapsules Containing Carum Copticum Essential Oil and Their Effect on the Sensory Quality of Yoghurt

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Abstract : In this study, preparation of spray dried Carum copticum essential oil (CCEO)-loaded microcapsules by maltodextrin and its blending with two other natural biodegradable polymers, gum Arabic (GA) or modified starch (MS) were investigated. Addition of these polymers to maltodextrin resulted in the encasement of encapsulation efficiency (EE). The highest EE ($78.22 \pm 0.34\%$) and total phenolic (TP) content (83.86 ± 1.72 mg GAE/100g) was related to MD-MS microcapsules. CCEO-loaded microcapsules showed spherical surface, good antioxidant and antimicrobial properties. In addition, sensory tests confirmed the possible application of CCEO-loaded microcapsules as natural food additives.

Keywords : carum copticum, essential oil, encapsulation, spray drying, sensory evaluation, antioxidants

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