

Preparation and Characterization of Chitosan Microcapsules Containing Fragrant Oil using Multi-Emulsion Method

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Perfume was encapsulated for several reasons, such as improvement of long-term efficiency or easy handling through solidification of liquid perfume. In this work, the crosslinked-chitosan microcapsules containing fragrant oil were prepared by oil-in-water-in-oil (o/w/o) multi emulsion method. The effects of the concentrations of fragrant oil and chitosan, and the stirring rates on preparing the microcapsules were investigated. The diameter and the form of microcapsules were observed by image analyzer and scanning electron microscope (SEM), respectively. As a result, the average particle size of microcapsules was decreased with the increase of the stirring rate. The formation of the chitosan microcapsules was confirmed by FT-IR. The inclusion of fragrant oil into chitosan microcapsules was determined in the presence of specific peak of fragrant oil, i.e., 1400 cm^{-1} , 2900 cm^{-1} . Also, the release behavior or profile of fragrant oil from chitosan microcapsules was examined with UV/vis spectra. Released amounts of fragrant oil were increased with increasing the content of fragrant oil and decreasing the pH.