



Development of Nanoencapsulation Forms from *Cymbopogon citratus* Essential Oil

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SUMMARY. *Cymbopogon citratus* essential oil (CCEO) is widely used in food, cosmetics and pharmaceutical fields. The aim of this study was to compare two different methods of encapsulating CCEO. The o/w emulsion method was employed here for the first time for producing CCEO nanoparticles with polycaprolactone (PCL) and a molecular inclusion in β -cyclodextrin (CyD) using the precipitation method. The nanoparticles were spherical in shape, with 240.0 nm mean diameter and demonstrated a higher encapsulation efficiency (36.51 %) as the citral content. The efficiency of CCEO/CyD complex was lower (9.46 %) and it showed some specificity for the smallest molecules present in the original oil. It was irregular in shape and had a larger mean diameter (441.2 nm). It was concluded that the o/w emulsion method was the most effective for CCEO encapsulation. The positive findings in this study encourage further research and provide perspectives for the development of phytotherapeutic products from CCEO.

KEY WORDS: β -cyclodextrin, *Cymbopogon citratus*, Lemongrass essential oil, Nanoparticles, Polycaprolactone.

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