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**Microencapsulation of olive oil by spray drying using membrane emulsification**

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Olive oil has been increasingly popular among consumption oils as it provides several health benefits such as antioxidant, anti-inflammatory, prevention of many modern life-style diseases, like some kinds of cancer and cardiovascular diseases. However, oxidative deterioration and stabilization of olive oil provide short shelf-life storage with poor consumer acceptance. Microencapsulation of active compounds has been extensively used during the past decades in the cosmetics, drugs industry as well as food industry to provide protection against oxidative deterioration. It has been adopted as an effective and important tool to protect the olive oil against oxidation during storage. Emulsification technology is a key step in the microencapsulation of oils followed by a spray drying technique to obtain olive oil powder. Thus, our research is directed toward the use of microencapsulation technology to encapsulate olive oil. In first stage, membrane emulsification was adopted to prepare the olive oil emulsion using combinations of different wall materials such as maltodextrin, gum Arabic and carboxymethylcellulose. In second step, spray drying has been applied as downstream process for powder formulation. As result, characterization of microcapsules from different aspects, particle sizes and distributions, encapsulation efficiency and ingredient protection had been discussed. Keywords: Membrane emulsification, olive oil, bioactive ingredient, wall materials, microencapsulation, Spray drying.