Production, stability and application of micro- and nanoemulsion in food production and the food processing industry

ABSTRACT

Emulsions are showing rising application in food processing industries because of their unique physicochemical and functional properties. There are wider ranges of food products where emulsions are used to encapsulate, deliver, and protect food components such as oil-soluble flavors, vitamins, colorants, preservatives, and other bioactive ingredients. It has ability to promote the product physicochemical properties like texture, taste, other sensory attributes, for example coloring and flavoring strength and processability. The utilization, properties, and stability depends on types of emulsion classified based on particle size into macro or conventional emulsion, microemulsion, and nanoemulsion. Among them, microemulsions and nanoemulsions are becoming more popular in food processing industry due to the advantage of stability and optical clarity. This chapter describes about the emulsification techniques for micro- and nanoemulsion, emulsion droplet properties, physicochemical properties of nanoemulsions, stability, approaches use for observing the properties of micro- and nanoemulsion, possible risk and potential application in food production and food processing industry.