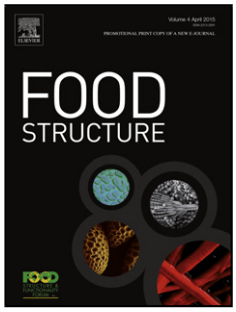

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A review of the analytical approaches used for studying the structure, interactions and stability of emulsions in nutritional beverage systems

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Abstract

Nutritional beverage emulsions contain water and oil, stabilised by surfactants, and are both diverse and complex. Their susceptibility to changes induced by manufacturing processes and on storage, results in challenges with their stability, quality and shelf-life. An understanding of the relationship between structure and stability of an emulsion is essential to designing and competently formulating food products with the desired nutritional functionality and sensory properties, while achieving the required shelf-life. This article critically reviews a selection of commonly-used analytical approaches focused on characterisation of emulsion structure in the context of emulsion formation, techno-functional properties and stability to intrinsic and environmental factors.

Keywords: emulsion structure; emulsion stability; rheology; CLSM; interfacial properties; emulsifiers