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## Interfacial Activity and Stabilization Mechanisms of Food Colloids in Pickering Emulsions

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### Abstract

The interfacial deformation and interfacial rheology behavior of food colloids are one of the important factors affecting their emulsification performance. The interfacial layer formed by food colloids adsorbed on the oil-water interface plays an important role in emulsion stability. However, these issues have not yet been sufficiently clarified. Based on the finding that colloidal particles used in food significantly improve the emulsifying property of Pickering emulsions, the effects of food colloids on the structure properties, interfacial deformation, and interfacial rheology behavior and their relationship with emulsification performance were investigated in this study. The results showed that food colloids at the interface of Pickering emulsions promoted the initial adsorption of particles and accelerated the formation of viscoelastic interfacial films, improving emulsification performance. In addition, food colloids imparted moderate viscosity and fluidity to the interfacial layers, which could combat the destabilization caused by oil droplet deformation. This study is believed to provide new insights into understanding and fine-tuning the interfacial behavior of food colloids.

**Key Words:** *interfacial behavior, food colloids, emulsion stability, Pickering emulsions, O/W interface*

