

## **Improved Functionality of Microparticulated Zein Protein in Emulsion**

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Proteins are often used to stabilize both oil in water and water in oil emulsions. Commonly used protein include whey protein isolate, soy protein isolate, egg proteins, etc. Corn gluten is another plant-based protein abundantly available because it is a by-product of the starch production. However, corn protein isolates have limited applications in foods due to their hydrophobic nature, low solubility and lack of functionality as emulsifiers. In this study microparticulated zein proteins were prepared using a high shear microfluidizer and functionality of these microparticulated proteins evaluated in water in oil and oil in water emulsions. Rheological properties and microstructure of emulsions were analyzed using a controlled stress rheometer and light microscope. Stability of the emulsion were determined using a Lumisizer. Results indicated originally hydrophobic zein proteins became more water-soluble which improved emulsion stabilizing strength of zein proteins. This study outlines the procedure for microparticulation and physical and microstructure of zein stabilized oil in water and water in oil emulsions.