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Title: Rheology of Defatted Ultrafiltration-Diafiltration Soy Proteins

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**Abstract:** The linear and non-linear rheological properties of defatted soy proteins produced by ultrafiltration-diafiltration were investigated at three temperatures. Five concentrations ranging from 10 to 30% of the defatted Ultrafiltered-Diafiltered (UD) soy proteins were prepared. The properties of defatted UD soy proteins depended on concentration and temperature. At 10%, defatted UD soy proteins exhibited almost viscous fluid behavior. When concentration increased or temperature decreased, the properties of soy proteins shifted into viscoelastic. The higher the concentration or the lower the temperature, the stronger of the viscoelasticity was for the soy proteins. The non-linear rheological properties were also concentration and temperature dependent. The non-linear steady shear measurements for the defatted UD soy proteins exhibited shear-thinning behavior, which can be described by a power law constitutive model. The trend of the power law exponent shift is very consistent with the linear viscoelastic behavior change with the soy proteins concentration and temperature. The results of this study can be used to direct further food and non-food applications for defatted UD soy proteins.

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