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Functional properties of hydrocolloids mixture systems of flamboyant gum with protein concentrates hydrolisates of legumes

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The food appearance and perception is a critical point in the consumers' choice. Nowadays, the additives like gums and protein have a great demand on the market, which is because the research and development of new additives from unconventional sources are very important. The gum was obtained from the endosperm of *Delonix regia* (Flamboyant) seeds. The protein concentrates from *Phaseolus lunatus* (PCPL) and *Vigna unguiculata* (PCVU) were hydrolyzed sequentially using Pepsin-Pancreatin with hydrolysis total time of 10 min for PCPL and 90 min for PCVU obtaining a hydrolysis degree of 15.73% and 29.78% respectively. The amino acid profile in both hydrolisates showed that aspartic acid and glutamic acid were the highest; on the other hand, methionine and cysteine were the lowest. Two hydrocolloid mixture systems (HMS) were prepared: gum/PCPL hydrolysate and gum/PCVU hydrolysate. A factorial design 23 evaluated the pH factors (3, 7), gum concentration w/v (0.5%, 1.5%) and temperature (30°C, 60°C) for each system; the concentration of protein hydrolysate was 2.5% in both systems. Flow curves, viscosities at 55 s⁻¹ and emulsion stability percentage (%ES) were determined for each system. The flow curves were fitted to the power law model, except on the systems with gum level of 1.5% at 30°C, which were fitted to the cross model. Viscosity values were obtained from 0.045 to 1.76 Pa s. %ES was determined in a dispersion at 40% v/v corn oil with each SHM's, the best %ES was 100 (no phase separation) at 1.5% of gum, 30°C and pH 7.

Biography

Wilbert Jose Rodríguez Canto has completed the grade of Industrial Chemical Engineer at the age of 22 years from Universidad Autonoma de Yucatan, Mexico. He worked as Sales Representative of PRAXAIR, Mexico in the area of medicinal and especial gases in 2012. Actually, he is studying the Master degree in Chemical and Biochemical Sciences in the area of food science.

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