



### CHANGES IN THE APPARENT VISCOSITY PROFILES OF CASEIN SUSPENSIONS AS AFFECTED BY PLANT ENZYMES.

#### ABSTRACT

The aim of this work was to study the degree of hydrolysis and changes in the apparent viscosity of casein suspensions as a result of various enzymes addition. Suspensions with 3, 12 and 15 g/100 mL of casein, at pH 5.2, 6.0 and 6.5 were prepared in buffer solutions. Previous standardization; plant (papain and bromelain) and animal (chymosin) enzymes were added to hydrolyze the casein suspensions. A control with no enzyme addition was used. The rheological behaviour was determined using a rotational rheometer (Haake RV20), with a cone and plate geometry. The Casson and the power law equations were applied to the data. The degree of hydrolysis was a function of the enzyme, pH and casein concentration, presenting chymosin the highest values. All enzymes showed the highest activity at acidic pH. Also, some substrate inhibition was observed. All samples behaved as non-Newtonian, shear-thinning systems with a yield stress value. In all cases, a significant increase in the viscosity was observed when shifting from 3 to 12 g/100 mL. Further increase in concentration caused an opposite effect. Changes in pH of the casein suspensions affected the viscosity, presenting maximum values at pH 6.0. The Casson equation fitted the results better than the power law model.

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**Autores: Javier Solorza Feria\*, Guadalupe Méndez Montealvo, Rosalía América González Soto, Perla Osorio Díaz, Alfredo Jiménez Pérez.**