

Journal of Chemical, Biological and Physical Sciences



An International Peer Review E-3 Journal of Sciences

Available online at www.jcbps.org

Section A: Food Biotechnology

CODEN (USA): JCBPAT

Research abstract

Rheological Properties of Alginate, Mucilage and Alginate-Mucilage Dispersions.

David Simental-Valle¹, Jorge Yáñez-Fernández¹, Carmen Núñez-Santiago².

¹Unidad Profesional Interdisciplinaria de Biología-IPN, Laboratory of Food Biotechnology, México.

²Centro de desarrollo de productos bióticos, Technological Development Department, México.

Abstract: Rheological properties of alginate (A) with mucilage from *Opuntia ficus* mucilage (M) addition were evaluated. Dispersions of alginate and mucilage mixtures with different ratios (100%A, 75%A: 25%M, 50%A: 50%M, 25%A: 75%M and 100%M) and different concentrations (1%, 1.5% and 2%) were prepared; these dispersions exhibited a shear-thinning non-Newtonian behavior. Rotational and Oscillatory rheology test shown that the viscous modulus G'' predominated over storage modulus G' , representing a liquid-like material. In all concentrations, the slopes of G' and G'' trend to 2 and 1 respectively as mucilage ratio increased. The data fitted well using the cross model, the parameter η_0 shown a reduction as mucilage ratio increased. The addition of mucilage provide a reduction behavior on the rheological magnitudes. This could be due a dilution effect in mucilage dispersions below 3% concentration.

Keywords: Rheological, Dispersions, mucilage ratio

Corresponding author: Jorge Yáñez-Fernández
*jyanezfe@ipn.mx