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Soya milk gelation with African catfish slime aliquots produces innovative integrated food emulsions

Oluwole, Adebajji Olasupo, Ikhu-Omoregbe, Daniel Imwansi, Jidean and Victoria Adaora
Cape Peninsula University of Technology, South Africa

African catfish slime is an extremely dilute, elastic and integrated hydrogel that disperses evenly in milli-Q water. The slime consists of mucosal glycoproteins and elongated filaments that traps water used to defend African catfish from attacks. Attenuated Total Reflection (ATR)-Fourier Transform Infrared (FTIR) spectroscopy a non-destructive analytical technique was used to confirm the wavelength peaks of glycoprotein functional groups. Deformation studies on African catfish slime showed it to be a non-linear viscoelastic material that displayed, shear thinning and pseudo-plastic behavior. Aliquots of the African catfish slime were dissolved in commercial soya milk (10% and 50% w/v) to combine functions of a dispersion and emulsion with those of the hydrogel. The aliquots of the African catfish slime had strong interactions with soya milk and displayed higher stability and viscoelasticity. The higher storage modulus of African catfish slime and African catfish slime-commercial soya milk suggested greater degree of cross-linking and explained the higher stability. African catfish mucin led to bridging and allowed flocculation to occur in the emulsion thereby forming an integrated emulsion and particle gel Slime –Soya at low temperatures. The combination of African catfish slime and commercial soya milk (Slime-Soya) had tofu like consistency and the method could be potentially used to produce innovative food emulsions with tofu-like integrated structures.

Biography

Adebajji Olasupo Oluwole was born in Lagos, Nigeria on 16 June 1974. He obtained a BSc (HONS) degree in Chemistry at the University of Lagos, Lagos, Nigeria and graduated with a First Class distinction in Food Science for his MSc degree at Stellenbosch University, Western Cape, South Africa. This led to a Golden Key Award because he was rated among the top best 5% students in his class. He is presently rounding off his PhD program at the Cape Peninsula University of Technology, Bellville, South Africa. He has a passion for research on the quality and packaging of food products such as fish.

adebanjisupotimilehin@yahoo.com

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