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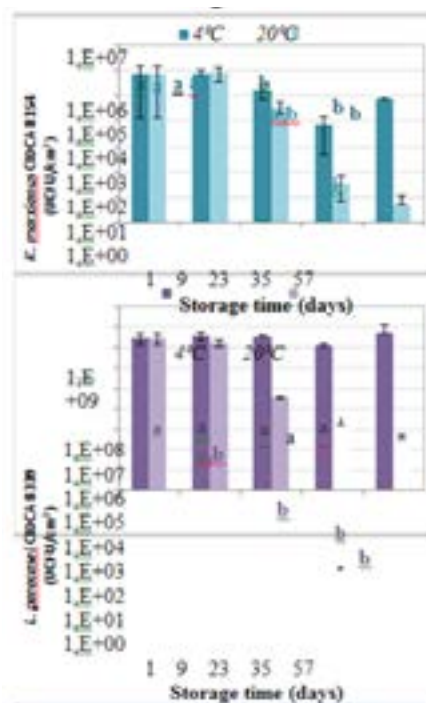
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Edible films from kefiran and milk whey proteins as carrier of probiotic microorganisms

Judith Piermaria^{1,2}, Nina Gagliarini^{1,2}, Gabriela Diosma^{1,2}, Graciela Garrote^{1,2} and Analía Abraham^{1,2}¹Centro de Investigación y Desarrollo en Criotecología de Alimentos, Argentina²UNLP, Argentina

Kefiran is a prebiotic polysaccharide produced by lactic acid bacteria with bifidogenic effect and immunomodulatory activity *in vitro* and *in vivo*. Whey proteins are extensively used on food products because of their high level of essential amino acids and their functional properties. Both macromolecules have capability to form edible films. The objective was to develop edible films from mixtures of kefiran and whey proteins as carriers for the administration of probiotic microorganisms. Combinations of whey proteins, kefiran and glycerol as plasticizer in formulations were assayed. *Kluyveromyces marxianus* CIDCA 8154 and *Lactobacillus paracasei* CIDCA 8339 were also included. Natural or forced convection, as dry methodologies, were used to obtain the films. The formulation containing 6 % w/w of whey proteins, 2 % w/w of kefiran and 3.2 % w/w of glycerol was selected. Films presented compact microstructure by scanning electron microscopy and the average humidity was 16 ± 1 %. No significant modifications were observed in the physicochemical characteristics of films due to microorganism's incorporation. Containing- microorganisms films obtained by natural convection showed less heterogeneity in thickness and higher elongation at break value (105.1%) than the corresponding ones obtained by natural convection (56.74%). When these films were submitted to an *in vitro* gastrointestinal tract (GIT) model was possible to recover $7.09.10^5$ and $2.96.10^7$ CFU/cm² of viable lactobacilli and yeast respectively. The viability of probiotic microorganisms were maintained at acceptable values during studied storage time at 4 C (Figure 1). Physicochemical characteristics and the recovery of viable microorganisms indicate that the developed films are good alternative carriers for inclusion and delivery of probiotics.



Biography

Judith Piermaria is working at Centro de Investigación at National University of La Plata. Her research interest covers Biochemistry, Food analysis, Food science.

piermariaj@hotmail.com