



**TITLE:** Effect of Chia (*Salvia hispanica*) seed mucilage incorporation in kefir as novel ingredient

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**ABSTRACT**

Growing consumer demand for nutritious and healthy products has motivated food manufactures and scientists to develop novel dairy products with higher fiber content. Chia seed mucilage (CSM) is a healthy natural gel used as a dietary source of soluble fiber. The current investigation aimed to evaluate the CSM as potential ingredient for preparing kefir. Mucilage was extracted with distilled water (water:seed ratio of 30:3), and the mixture was gently stirred for 3 h at 20°C. Five formulations of kefir were studied: natural kefir (as control); kefir with 1.5%, 3%, 4.5% and 6% of CSM. During 28 days of refrigeration storage were determined: microbial viability, physico-chemical proprieties (total titratable acidity (TTA), syneresis and pH), total phenolic content (TPC) and antioxydant activity (DPPH and ABTS). The number of bacteria significantly ( $P < 0.05$ ) increased during the storage period ( $P < 0.05$ ) in the supplemented formulations with fibres. The pH decreased during storage whereas the TTA increased as was expected. Kefir supplemented with chia at 4,5% and 6% mucilage showed the lowest syneresis during the storage period. Kefirs supplemented with mucilages improved the total phenolic content (TPC), which showed a dose-dependent relationship with mucilage content. Results obtained from DPPH, ABTS inhibition assay showed that fermentation enhanced the antioxidant capacities. The novel mucilage ingredients could be a source of fiber for improving the functionality of kefir with high antioxydant capacity.

**BIOGRAPHY**

Dr, OULD SAADI Linda is a researcher teacher at the department of food science in faculty of biology, Bejaia University, Algeria. Her expertise cover food science technology, prebiotic kefir. She has three international publications and one national on her expertise. Linda participated in many national and international conferences by oral and and posters communications. As a teacher, with her second year of experience. She is also an active participant in Algerien Society of Orthomolecular Medicines. She has an experience as a technical-commercial and consulter in in private society of materiel of laboratory chemical product. She obtained an International Certificate of Nutrithrapy and Nutrition Clinical and Certificate of training in Naturopathy issued by the European Institute Formails.

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