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## Probiotic sour milk production using cells immobilized on wheat bran

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During the past two decades there has been an increased interest in the study and understanding of the nutritional and therapeutic aspects of dairy products along with the increased demand for suitable industrial starter cultures in order to improve food safety, quality and production efficiency. Sour milk is a fermented dairy product which belongs to the yogurt-like dairy beverages and is produced by the acidification of milk. Sour milk is commercially produced through fermentation of bacteria added to standardized milk or more easily by the addition of an acid like lemon or vinegar to standardized milk as long as the milk contained at the final product has a minimum of 40% (m/m). The selection of starter bacteria is a crucial step for the flavor formation and textural properties in the final product. The aim of the present study was to evaluate the production of sour milk fermented with the use of the probiotic microorganism *Lactobacillus casei* ATCC 393 immobilized on wheat bran. The freeze dried biocatalyst was used in repeated batches where it retained its operational stability. The effects of initial biocatalyst concentration and incubation temperature on the acidification and coagulation time of milk were investigated. The drop of pH, lactic acid production, titreable acidity and residual sugar during the fermentations, as well as the viability of cultures during 4 weeks of storage at 4°C, were monitored. Even after 4 weeks of refrigerated storage, the microbial loads (>7 log cfu/g) were in accordance with the international guidelines for probiotic and starter cultures in milk products. Compared to a sour milk product produced with free cells, the batch sour milk production is more costly effective since the biocatalyst can be used several times. The results of the present study demonstrated the successful use of freeze dried *lactobacilli* immobilized on wheat bran for sour milk production.

### Biography

A Terpou received her BSc in Food Science and Technology at the Agricultural Aristotle University of Thessaloniki (2010). She also received his MSc in Food Biotechnology (2012) from University of Ulster, U.K. The above mentioned degrees were focused in fermentation technology and especially the production of cheese, wine and other fermented food products. She has presented 6 papers in international and national conferences. She is member of the Food Biotechnology Group of the Department of Chemistry that specializes on fermentation technology, fermented food production, agro-industrial waste utilization and industrial bioreactor design. Her Research interests include: microbial fermentation, fermented food products, nanobiotechnology for fermentation applications.

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