

## **PRODUCTION OF LACTIC ACID FROM CHEESE WHEY BY IMMOBILIZED CELL REACTOR OF *STRAIN LACTOCOCCUS LACTIS SUBSP LACTIS SPI* ADSORBED ONTO POZZOLANA BED**

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### **ABSTRACT**

The technique of cell immobilization biomass using porous support particles, which is attractive from the point of view of simplicity and convenience, relies on the inherent ability of adhesive cells as a consequence of their growth to form films around and in the support material. In the present study immobilized cell reactor of the strain *Lactococcus lactis subsp Lactis SPI* naturally adsorbed onto pozzolana beds was constructed and used for the investigation of batch and continuous production of L+ lactic acid from nutritionally enriched whey. High final L+ lactic acid concentration was achieved; 15,57 g/l corresponding at 77% of lactose consumption, in batch fermentation filled with 6,25 particle size of pozzolana. The best results were obtained when the immobilized cells bioreactor was operated in a continuous mode and both dilutions rates were manipulated. At Dilution rate 0,46 h<sup>-1</sup> a concentration of 21,8 g/l of lactic acid was achieved in reactor effluent with a conversion yield of 88,8 % and volumetric reactor productivity of 30,57 g.l<sup>-1</sup>h<sup>-1</sup>

**KEYWORDS:** L+ Lactic Acid, Immobilized Cell Reactor, *Lactococcus Lactis Subsp Lactis*. Pozzolana Bed, Batch Fermentation, Continuous Fermentation, Biofilm