ABSTRACT

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“SUPPLEMENTATION STUDY OF MAGNESIUM (Mg), MANGANESE (Mn), AND POTASSIUM (K) TO THE FERMENTATION OF LACTIC ACID BACTERIA”

Microelement is an element needed in small amounts, but has important role for the metabolic processes of microorganisms. Microelement is necessary for the metabolism of lactic acid bacteria as enzyme cofactors. Supplementation of magnesium, manganese and potassium to Streptococcus thermophilus, Lactobacillus acidophilus, and Lactobacillus plantarum that acts as a starter in the fermentation medium in the form of soybean extracts is done in the research. The first phase of the study aims to determine the best supplementation (magnesium, manganese, and potassium) and to determine the best combination starter (S. thermophilus, L. acidophilus, L. plantarum combination 1:0:0, 0:1:0, 0:0:1, 1:1:1, 1:1:2, 1:2:1, 2:1:1, 1:2:2, 2:1:2, and 2:2:1). The second phase of the study aim to determine the best conditions of aeration (aerobic, anaerobic, and semiaerobic) for the fermentation. The results of this study indicate that the best fermentation can be achieved in the presence of manganese supplementation on combination starter 2:1:2 with aeration aerobic condition.

Keywords: lactic acid bacteria, supplementation, magnesium, manganese, potassium

References: 54 (2000 - 2012)