

TITLE: SCREENING OF L-GLUTAMIC ACID PRODUCTION BY LACTIC ACID BACTERIA (LAB)

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ABSTRACT:

L-glutamic acid is one of the main amino acids that is present in a wide variety of foods. It is mainly used as a food additive and flavor enhancer in the form of monosodium glutamate and its production takes place almost exclusively by fermentation process. Due to the great demand, the need for research on its production using new microorganisms isolated from different environments has increased. Thus, the present work aims to select lactic acid bacteria isolated from different fermented foods with L-glutamic acid production capacity. Bacteria were selected and evaluated for their ability to synthesize glutamic acid qualitatively by Thin -layer Chromatography and quantitatively by standard curve. The 142 strains evaluated showed the presence of a visible spot corresponding to the glutamic acid standard. The general average of production found was 2.94 mg/mL among the different species, with a minimum of 1.56 and a maximum of 4.97 mg/mL. Seventeen strains had a potential greater than 4 mg/mL for glutamic acid production. Of these, eight strains were isolated from different fermented foods and the rest from fresh pork sausage, cocoa, apple juice kefir, and pulped coffee. It is concluded that lactic acid bacteria from fermented foods are capable of producing L-glutamic acid and can be used in biotechnological applications and in various industrial sectors.

Keywords: glutamate, fermentation processes, L-amino acids, lactic acid bacteria (LAB).

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