

# Microbial Preservation and Fermentation by Lactic Acid Bacteria

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## ABSTRACT

LAB plays essential role in fermentation of milk and milk products. Various LAB strains are used as initiator cultures in milk industry. During fermentation process Lactic Acid Bacteria (LAB) manufactures anti-microbial metabolites, include organic acids like propionic, acetic acid and lactic acids as final products.

**Keywords:** Fermentation; Microorganism.

## INTRODUCTION

LAB (Lactic Acid Bacteria) has very big significance industrially and is used for milk preservation, fermentation and cheese, and kefir and butter milk. Species from the Gram-Positive bacteria group are utilized which includes the genera *Lactobacillus*, *Leuconostoc*, *Lactococcus*, *Streptococcus* and *Pediococcus*. They can be acknowledged from their fermentative ability and they are enriching nutrients, improving organoleptic attributes, enhancing food safety and also provide health benefits.

LAB presence in the milk fermentation is inoculating starter cultures. While milk is also known as natural habitats of LAB. Milk fermentation technology is normally cost effective and relatively simple. LAB is used on the other hand as predominant starter cultures in large scale under controlled conditions. LAB plays vital role in fermentation of milk and milk products. Several LAB strains are used as starter cultures in milk industry. These starter cultures were controlled from sequence activity of LAB and then they were segregated, selected and confirmed. LAB has most important property to acidify milk and gives appearance and flavor because of converting milk protein.

LAB's (Lactic Acid Bacteria) are gram positive organism utilized as starter cultures. *S. thermophilus*, *L. Helveticus*, *L. lactis* and

*L. Delbruck* subsp. *bulgaricus* are used majorly. In fermented foods LAB shows enormous anti-microbial roles because of production of organic acids. By producing Bacteriocins some strains are obliging in the fermented milk preservation.

Lactic acid is an organic compound manufactured via fermentation by different microorganisms that are able to use dissimilar carbohydrate sources. Lactic acid bacteria are the main bacteria used to manufacture lactic acid and among these, *Lactobacillus* spp. have been manifested interesting fermentation capacities. Lactic acid bacteria (LAB) fermentation is found to be appealed in dairy industry, wine and cider production, brewed vegetable products production and meat industry. Nowadays, people are conscious that diet has a chief role in promoting health and preventing disease as a way of layout a healthy lifestyle. The shredded cheese was shaken for 10 seconds through a sieve with opening of 6.35 mm<sup>2</sup>; the shreds that fell through the sieve were classified as fines, and weighed to calculate the percent of shred fines. The shredding efficiency and shred ability index were calculated as follows. The fermentation of LAB through carbohydrate metabolization manufactures lactic acid as the major metabolic end-product. Lactic acid accumulation impedes LAB growth due to pH alteration into acidic condition. The acidification of cytoplasm and failure of proton reason forces are the reasons for the end product inhibition in LAB fermentation. The presence of inhibitors known as substance and product inhibitions that inhibit the cell growth and reduce the product emergence activity is one of the main problems in fermentation process. The constrained effect of lactic acid on cell metabolism and proliferation might be due to the increment in medium osmotic pressure and also other fermentation descendent for example acetic acid, formic acid, or sodium format that causes an individual inhibitory consequence.

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