

## Lactobacillus and Its Applications in Dairy Fermentation

Haritha Shekari\*

Department of Microbiology, Université de Sétif, Setif, Algeria

### DESCRIPTION

The dairy industry has long understood the significance of microorganisms in the production of high-quality dairy products. When compared to the other microorganisms used, *Lactobacillus* stands out as a potent and adaptable bacterium with a wide range of applications. As a result of its capacity to raise product quality, lengthen shelf life, and provide health advantages, this genus of lactic acid bacteria is extensively utilized in the dairy industry. The function of *Lactobacillus* in the dairy business, its many strains, and the advantages it offers to both producers and consumers will all be covered in this article.

### Lactobacillus in dairy fermentation

A variety of dairy products are produced by fermentation processes, and *Lactobacillus* is a crucial component of those processes. Lactic acid fermentation is the process through which lactose, the main sugar in milk, is changed into lactic acid. In addition to lowering pH, which prevents the growth of dangerous bacteria, this metabolic activity also adds to the distinctive flavors and textures of fermented dairy products.

A dairy product where *Lactobacillus* plays a crucial role is yoghurt. *Streptococcus thermophiles* and *Lactobacillus bulgaricus* are two popular strains for making yoghurt. These strains collaborate to produce lactic acid and other flavouring compounds, giving yoghurt its distinctive tanginess and creamy texture.

### Probiotic properties of lactobacillus

*Lactobacillus* is known for its probiotic qualities in addition to its function in fermentation. Live bacteria known as probiotics can help the host's health when taken in sufficient quantities. The probiotic potential of many *Lactobacillus* strains, including *Lactobacillus acidophilus* and *Lactobacillus casei*, has been well investigated.

Probiotic *Lactobacillus* strains can withstand the challenging conditions of the digestive tract and make it to the intestines alive when added to dairy products. Once there, they interact

with the gut microbiota and support the diversity and balance of beneficial bacteria. This interaction has been linked to a number of health advantages, including higher immune function, better digestion, and a lower chance of developing specific gastrointestinal illnesses.

As consumers become more aware of the significance of gut health, there has been a considerable increase in consumer interest in the use of probiotic *Lactobacillus* strains in dairy products. For consumers who are interested in nutrition and wellness, probiotic yoghurts, fermented milks, and other dairy products have become desirable choices.

Additionally, *Lactobacillus* is essential for preserving the safety of dairy products and increasing their shelf life. During fermentation, *Lactobacillus* produces lactic acid, which generates an acidic environment that prevents the growth of harmful germs and spoilage bacteria. For instance, in the manufacture of cheese, specific strains of *Lactobacillus* assist in controlling the acidification process, hinder the growth of undesirable bacteria, and promote the development of palatable flavors and textures. By creating antimicrobial substances that guard against deterioration, *Lactobacillus* not only improves the sensory qualities of cheese but also helps keep it fresh.

The importance of *Lactobacillus* is projected to grow as the dairy sector develops. The creation of new strains with improved functions is now possible due to developments in science and technology. These strains might have enhanced probiotic qualities, increased productivity, or special sensory characteristics. Furthermore, *Lactobacillus* has potential uses outside of traditional dairy products. To improve the flavor, texture, and nutritional content of plant-based substitutes such non-dairy yoghurts and cheeses, researchers are looking into using it.

With its many capabilities, *Lactobacillus* has solidified its position as an important bacteria in the dairy sector. Its benefits for probiotics, food safety, shelf life extension, and fermentation are clear. Dairy producers will continue to use *Lactobacillus* to develop cutting-edge dairy products as customers want safer, healthier, and more sustainable food options. Future applications of *Lactobacillus* are sure to be exciting due to

**Correspondence to:** Haritha Shekari, Department of Microbiology, Université de Sétif, Setif, Algeria, E-mail: harithas@gmail.com

**Received:** 15-May-2023, Manuscript No. ADR-23-25675; **Editor assigned:** 17-May-2023, PreQC No ADR-23-25675 (PQ); **Reviewed:** 29-May-2023, QC No. ADR-23-25675; **Revised:** 05-Jun-2023, Manuscript No ADR-23-25675; **Published:** 15-Jun-2023, DOI: 10.35248/2329-888X.23.11.631

**Citation:** Shekari H (2023) *Lactobacillus* and Its Applications in Dairy Fermentation. J Adv Dairy Res.11:631.

**Copyright:** © 2023 Shekari H. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

continuing studies and development, which will transform the dairy sector into the world's hub of innovation and healthy product options for customers.

In addition to its functional advantages, *Lactobacillus* has advantages for the dairy industry's sustainability. It offers a more environmentally friendly substitute for manufactured additives or preservatives because it is a naturally occurring bacterium. In dairy fermentation, the use of *Lactobacillus* lessens the need for chemical additives, enabling cleaner label goods that appeal to customers looking for more organic and healthful options.

Additionally, *Lactobacillus* can help with resource efficiency and waste reduction. It uses the lactose, a sugar found in milk, as a

substrate for growth and metabolism during fermentation. *Lactobacillus* helps in lowering the lactose level of dairy products so that those who are lactose intolerant can consume them.

Furthermore, by-products from *Lactobacillus* fermentation, including as carbon dioxide and flavorings, can be harvested and used in a variety of ways.

There is less need for additional carbon dioxide sources because carbon dioxide can be captured and used in carbonation operations. *Lactobacillus* produces flavor molecules that contribute to the distinctive flavor profiles of dairy products, negating the need for additions and artificial flavorings.