

# The microbiological and enzymatic processing for conversion of food

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## Introduction

The microbiological integrity of the dairy food chain, the ecology of pathogenic and corruption organisms, and the genomic analysis of these pollutants, similar as new strategies for their control, are important targets to be addressed. Nine RTs were proposed to bandy these objects. Still, other studies on different fermented foods following analogous approaches have been published in the “Food Microbiology” section. For illustration, health and safety issues, particularly dealing with chemical and microbial implicit hazards, have been related to fermented products of meat, vegetable, fish, rice, soybean, and sludge origin. Among fermented potables, seven RTs for a sustainable viticulture and winemaking, on-conventional provocations and Lactic Acid Bacteria (LAB) in winemaking, and the product of poisonous composites by microorganisms, similar as ochratoxin and biogenic amines, were proposed. In general, the main applicable motifs in the coming times, related to fermented foods, can be epitomized micro biota involved in product turmoil; a selection of technological, defensive, and probiotic starters as well as safety enterprises related with their use; the genomic and metabolomics characterization of microorganisms with a technological impact on fermented products; the control and inhibition of pathogens and corruption organisms; the relationship between technological procedures and micro biota of fermented foods; and traditional and ethnical fermented foods and potables. In discrepancy to other territories, foods are generally characterized by a not applicable number of microbial species. Among these, LAB plays an essential part in the development of probiotics and starter societies. In fact, LAB are an industrially important group of microorganisms used throughout the world for a large variety of food restlessness, similar as those of dairy, wine, chuck, vegetables, and others, important bandied in the RT “Industrial and health operations of LAB and their metabolites.

Further than 30 RTs have concentrated on LAB, and further than 340 papers have been published on this content. LAB in particular constitutes a different group of Gram-positive, catalase-negative bacteria producing lactic acid.

Some food- associated LAB attained the status of “Good Presumption of Safety” (QPS) by the European Food Safety Agency (EFSA) or the “General Recognized as Safe” (GRAS) status by the U.S. Food and Drug Administration.

Currently, the use of these microorganisms and their metabolites for food preservation has been extended to several fresh bioactivities. The RT “Operation of defensive societies and bacteriocins for food preservation” concentrated on antimicrobial substances produced by LAB inhibiting foodborne pathogens and corruption microorganisms. These studies are in progress and will increase further in the near future, offering a promising volition to chemical preservatives to insure the quality and safety of ready-to- eat, extended-shelf-life, fresh-tasting, and minimally reused foods. Analogous reflections can be made regarding *Saccharomyces* and on-*Saccharomyces* provocations for alcoholic turmoil and *Bacillus* spp. for alkaline instigated foods. Still, new starter societies should be linked that involve natural adaption and elaboration, similar as a direct selection of mutants with the asked parcels, adaptive laboratory elaboration, and inheritable styles besides genome sequencing of wild type strains, for guiding safety assessments and strain- enhancement.

Looking forward, conventional food sources may be rounded by comestible microbial biomass deduced from bacteria, provocations, filamentous fungi, or microalgae. Currently these groups of microorganisms are estimated as an important and good source of proteins, vitamins, and salutary bioactive composites. It appears that the mortal population will increase up to about 9 – 12 billion people by the time 2100 and microorganisms could be an integral part of the sustainable product system. The “Food Microbiology” section of “Borders in Microbiology” could give good guidance through its RTs on new advances in microbiology for the advanced application, product, and force of food in the food assiduity and related fields, which can help to insure global food safety and security.

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