Applied Microbiology: Open Access
ISSN: 2471-9315
OPEN ACCESS Freely available online
Commentary

Microbiological Aspects of Food Contamination

Cecilia Andreu*

Department of Pathology, University of Texas Medical Branch, Texas, USA

DESCRIPTION

Microorganisms that inhabit, manufacture, or infect food are studied in food microbiology. This includes bacteria that cause food deterioration, pathogens that can cause disease (especially when food is prepared or stored incorrectly), microbes that produce fermented foods such as cheese, yoghurt, bread, beer, and wine, and microbes that produce probiotics.

Important groupings of bacteria in food have been subdivided based on particular criteria in the research of bacteria in food. These classifications have little taxonomic significance are Lactic acid bacteria are bacteria that create lactic acid from carbohydrates. *Lactococcus*, *Leuconostoc*, *Pediococcus*, *Lactobacillus*, and *Streptococcus thermophilus* are the most common genera. Acetic acid is produced by bacteria such as *Acetobacter aceti*. Bacteria that produce propionic acid, such as *Propionic bacterium freudenreichii*, are used to ferment dairy products. *Clostridium butyricum*, for example, produces butyric acid. Extracellular proteinases are produced by proteolytic bacteria to hydrolysed proteins. Bacteria from the genera *Micrococcus*, *Staphylococcus*, *Bacillus*, *Clostridium*, *Pseudomonas*, *Alteromonas*, *Flavobacterium*, and *Alcaligenes*, as well as *Entereobacteriaceae* and *Brevibacterium*, are included in this group. Extracellular lipases produced by lipolytic bacteria hydrolyze triglycerides. Bacteria from the genera *Micrococcus*, *Staphylococcus*, *Pseudomonas*, *Alteromonas*, and *Flavobacterium* make up this category.

Food microbiology is concerned with food safety. Bacteria and viruses are among the disease-causing agents and pathogens that are easily spread through food. Microbial toxins are potentially potential dietary hazards; nevertheless, microorganisms and their products can also be used to combat pathogenic bacteria. Pathogens can be killed and inhibited by probiotic bacteria, particularly those that generate bacteriocins. Purified bacteriocins, such as nisin, can also be added to food products directly. Finally, viruses that solely infect bacteria, known as bacteriophages, can be utilised to destroy bacterial diseases. The majority of bacteria and viruses are eliminated by thorough food preparation, which includes adequate cooking. However, due to other safety concerns, contaminants' poisons may not be able to transform into non-toxic forms when the contaminated food is heated or cooked. Food microbiology papers published in the last ten years have been marked by multidisciplinary interests that have validated the growing body of evidence implicating microorganisms in a variety of fields, including food technology, food safety, and hygiene, food poisoning, food genetics, and, more broadly, food omics, functional foods, and probiotics, as well as developing food analysis tools. Probiotics research and innovation in the manufacture of functional foods demand special attention. The survival of potential probiotic bacteria in the Gastro-Intestinal Tract (GIT), microbial adhesive capacity and colonisation of the gut, probiotic strain safety, and gut microbiome homeostasis maintenance by competitively inhibiting pathogen growth or producing antimicrobial compounds have all been the subject of numerous studies. New probiotic strains, on the other hand, are (or will be) evaluated for natural bioactive compounds, immunomodulation, anticancer, and other health advantages. The Food Microbiology department has received fifteen Research Topics (RTs) on these vital topics. With an increased interest in the use of gut commensal bacteria as possible probiotics, such as strains belonging to the genera, a new age in probiotics research has begun. In the human gut microbiome, *Bacteroides*, *Clostridium*, *Bifidobacterium*, and *Faecalibacterium* are the most common bacteria.

Microorganisms are important to foods for three reasons are they can cause food spoiling, they are employed to make a wide range of food items, and they can transmit microbial diseases. Microbiology of food provides powerful tools for human health and nutrition. Not only can genomic approaches make examining microorganisms in food biology cheaper, more accurate, and faster, but they also widen the scope of food biology research.

Correspondence to: Cecilia Andreu, Department of Pathology, University of Texas Medical Branch, Texas, USA, E-mail: ceciliaandr@yahoo.com

Received: November 8, 2021,**Accepted:** November 22, 2021,**Published:** November 29, 2021

Citation: Andreu C (2021) Microbiological Aspects of Food Contamination. Appli Microbiol Open Access. 7:220.