



Microbiome Involved In Food Microbiology

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ABOUT THE STUDY

Food microbiology is study of the microorganisms that inhabit, produce, or contaminate food. This includes the study of microorganisms causing food corruption, pathogens that may cause complaint, microbes used to produce instigated foods analogous as waste, yogurt, chuck, beer, and wine; and microbes with other useful places, analogous as producing probiotics

In the study of bacteria in food, important groups have been subdivided predicated on certain characteristics. These groupings are not of taxonomic significance

Lactic acid bacteria are bacteria that use carbohydrates to produce lactic acid. The main rubrics are *Lactococcus*, *Leuconostoc*, *Pediococcus*, *Lactobacillus* and *Streptococcus thermophilus*. Bacteria analogous as *Propionibacterium freudenreichii* that produce propionic acid are used to raise airy products. Some clostridium *Clostridium butyricum* produce butyric acid. Proteolytic bacteria hydrolyze proteins by producing extracellular proteinases. This group includes bacteria species from the *Micrococcus*, *Staphylococcus*, *Bacillus*, *Clostridium*, *Pseudomonas*, *Alteromonas*, *Flavobacterium* and *Alcaligenes* genera, and more limited from *Entero bacteriaceae* and *Brave bacterium*. Lipolytic bacteria hydrolyze triglycerides by product of extracellular lipases. This group includes bacteria species from the *Micrococcus*, *Staphylococcus*, *Pseudomonas*, *Alteromonas* and *Flavobacterium rubrics*.

Saccharolytic bacteria hydrolyze complex carbohydrates. This group includes bacteria species from the *Bacillus*, *Clostridium*, *Aeromonas*, *Pseudomonas* and *Enterobactergenera*. Thermophilic bacteria are suitable to thrive in high temperatures above 50°Celsius, including rubrics *Bacillus*, *Clostridium*, *Pediococcus*, *Streptococcus*, and *Lactobacillus*. Thermophilic bacteria, including spores, can survive pasteurization bacteria species from multitudinous rubrics including *Alcaligenes*, *Serratia*, *Leuconostoc*, *Carnobacterium*, *Brochothrix*, *Listeria* and *Yersinia*. Halo tolerant bacteria can survive high salt attention lower than 10. This includes some species from *Vibrio* and *Corynebacterium*. Acid uric bacteria survive at low pH. Osmophilic bacteria, while less

osmophilic than provocations and molds, can tolerate a fairly advanced bibulous terrain. Aerobes bear oxygen, while anaerobes are inhibited by it. Facultative anaerobes can grow with and without oxygen. Some bacteria can produce feasts during metabolism of nutrients; others produce slime by synthesizing polysaccharides. Spore producing bacteria are further divided into groups of aerobic, anaerobic, flat sour, thermophiles and sulfide-producing. Coliforms, including fecal coliforms are used as a measure of sanitation. Enteric pathogens can beget gastro intestinal infection and may be included in this group.

Food safety is a major focus of food microbiology. Numerous agents of complaint and pathogens are readily transmitted via food which includes bacteria and contagions. Microbial venoms are also possible adulterants of food. Still, microorganisms and their products can also be used to combat these pathogenic microbes. Probiotic bacteria, including those that produce bacteriocins can kill and inhibit pathogens. Alternatively, purified bacteriocins analogs as nosing can be added directly to food products. Ultimately, bacteriophages, contagions that only infect bacteria can be used to kill bacterial pathogens. Thorough drug of food, including proper cookery, eliminates most bacteria and contagions. Still, venoms produced by adulterants may not be liable to change to non-poisonous forms by toast or cooking the defiled food due to other safety conditions.

Fermentation is one of the styles to save food and alter its quality. Incitement, especially *Saccharomyces cerevisiae*, is used to leaven chuck, pop beer and make wine. Certain bacteria, including lactic acid bacteria, are used to make yogurt, rubbish, hot sauce, pickles, fermented links and dishes analogous as kimchi. A common effect of these restlessness is that the food product is less sociable to other microorganisms, including pathogens and corruption-causing microorganisms, thus extending the food's shelf- life. Some rubbish kinds also bear molds to grow and develop their characteristic flavors ensure safety of food products, microbiological tests analogous as testing for pathogens and corruption organisms are demanded. This way the trouble of contamination under normal use conditions can be examined and food poisoning outbreaks can be prevented. Testing of food products and ingredients is important

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along the whole force chain as possible excrescencies of products can do at every stage of product. Incremental from detecting corruption, microbiological tests can also determine origin content, identify provocations and molds, and salmonella. For salmonella, scientists are also developing rapid-fire- fire and portable technologies suitable of relating unique variants of Salmonella.

Polymerase chain response (PCR) is a quick and affordable system to induce numbers of duplicates of a DNA scrap at a specific band ("PCR (polymerase chain response),"2008). For

that reason, scientists are using PCR to descry different kinds of contagions or bacteria, analogous as HIV and anthrax predicated on their unique DNA patterns. Various paraphernalia are commercially available to help in food pathogen nucleic acids birth, PCR discovery, and insulation.

The discovery of bacterial strands in food products is truly important to everyone in the world, for it helps help the circumstance of food borne illness. Therefore, PCR is recognized as a DNA detector in order to amplify and trace the presence of pathogenic strands in different reused food.