

Factors Influencing Microbial Fermentation's Ability to Compete with Food

Ting Zhou*

Department of Food Engineering, Princeton University, USA

DESCRIPTION

Fermentation is a metabolic process that involves the action of enzymes to produce chemical changes in organic substrates. It is strictly defined in biochemistry as the extraction of energy from carbohydrates in the absence of air. In food production, it can refer to any process in which the activity of microorganisms causes a desirable change in a foods and drinks. Zymology is the science of fermentation. In microorganisms, fermentation is the primary means of producing adenosine triphosphate (ATP) through anaerobic degradation of organic nutrients. Since the Neolithic period, humans have used fermentation to produce foods and beverages. Fermentation, for example, is used for preservation in the production of lactic acid, which is found in sour foods such as pickled cucumbers, kombucha, kimchi, and yoghurt, as well as for the production of alcoholic beverages such as wine and beer. Industrial fermentation is the process of using microbes to produce chemicals, biofuels, enzymes, proteins, and pharmaceuticals on a large scale. Fermentation occurs in all animals' gastrointestinal tracts, including humans. The definitions of fermentation given below range from informal, general usages to more scientific definitions. Food preservation methods based on microorganisms (general use). Any large-scale microbial process that occurs with or without the presence of air (common definition used in industry, also known as industrial fermentation). Any process that results in the production of alcoholic beverages or acidic dairy products. Any metabolic process that releases energy only under anaerobic conditions (somewhat scientific). Any metabolic process that generates energy from a sugar or other organic molecule without the use of oxygen or an electron transport system and employs an organic molecule as the final electron acceptor (most scientific). The term "ferment" comes from the Latin verb *fevered*, which means "to boil." It is thought to have first been used in alchemy in the late 14th century, but only in a broad sense. Until around 1600, it was not used in the modern scientific sense. Fermentation, like aerobic

respiration, is a method of extracting energy from molecules. This is the only method shared by all bacteria and eukaryotes. As a result, it is thought to be the oldest metabolic pathway, suitable for primaevial environments - that is, before plant life on Earth, that is, before oxygen in the atmosphere. Yeast, a type of fungus, can be found in almost any environment that can support microbes, from fruit skins to the guts of insects and mammals to the deep ocean. Yeasts ferment (break down) sugar-rich molecules to produce ethanol and carbon dioxide. Fermentation mechanisms are present in all cells of higher organisms. During periods of intense exercise when oxygen supply is limited, mammalian muscle ferments, resulting in the production of lactic acid. Fermentation is the conversion of carbohydrates to alcohol or organic acids by microorganisms (yeasts or bacteria) under anaerobic (oxygen-free) conditions in food processing. Fermentation usually implies that microorganism action is desired. The science of fermentation is known as found that the frequency or zymurgy.

CONCLUSION

The term "fermentation" can also refer to the chemical conversion of sugars into ethanol, which produces alcoholic beverages such as wine, beer, and cider. Similar processes occur in the leavening of bread (the production of CO₂ by yeast activity) and the preservation of sour foods with the production of lactic acid, such as in sauerkraut and yoghurt. Vinegar, olives, and cheese are also popular fermented foods. Fermented foods prepared locally may also include beans, grains, vegetables, fruit, honey, dairy products, and fish.

ACKNOWLEDGEMENT

None.

CONFLICTS OF INTEREST

The authors declare that they have no competing interests.

Correspondence to: Ting Zhou, Department of Food Engineering, Princeton University, USA, E-mail: zhoutin@hotmail.com

Received: 03-October-2022, Manuscript No. JNFS-22-20412; **Editor assigned:** 05-October-2022, PreQC No. JNFS-22-20412 (PQ); **Reviewed:** 19-October-2022, QC No JNFS-22-20412; **Revised:** 24-October-2022, Manuscript No. JNFS-22-20412 (R); **Published:** 31-October-2022, DOI: 10.35248/2155-9600.22.12.1000883

Citation: Zhou T (2022) Factors Influencing Microbial Fermentation's ability to Compete with Food. J Nutr Food Sci. 12: 883.

Copyright: © 2022 Zhou T. 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.