Food toxicology and fermentation technology.

Chipo Sibanda *

Department of Food Microbiology, Catholic University of Zimbabwe, Harare, Zimbabwe

Accepted on 13 November, 2021

Description

The study of the nature, qualities, effects, and detection of toxic compounds in food, as well as their disease manifestation in humans, is known as food toxicology. Radioactive elements, heavy metals, and food-processing packaging materials are examples of such things. Toxicants in food, the health implications of high nutrient intakes, and toxicant-nutrient interactions are all topics covered by food and nutritional toxicologists. Food, along with air and water, is one of the most important components for living beings to survive. Food toxicology is the study of chemicals contained in food that, when consumed, can harm people. Detecting harmful compounds in food, defining their characteristics, researching their fate in the body (absorption, distribution, metabolism, and excretion), and investigating their adverse health effects are all part of the discipline of food toxicology. Toxic compounds can be naturally present in food, created when it is cooked, added to food directly, or they can enter food through the nearby environment, such as packaging.

Discussion

Food toxicology, among the several sub disciplines of toxicology, has gotten more public attention in recent years. This has been fuelled by greater consumer knowledge of food's health consequences and foodborne illness, as well as the internet's rapid dissemination of information to consumers. A food typically comprises hundreds of different components. A majority of the compounds in various foods have not been thoroughly described, aside from the most evident elements. The belief that food is safe to eat is based on its consumption history. Consumers have become increasingly interested in the "health-promoting" characteristics of several naturally occurring dietary ingredients, such as phytosterols from vegetable oils and isoflavones from soy, in recent years. Questions concerning how chemicals should be regulated have arisen as a result of their addition to meals that do not naturally contain them. There is a discussion about whether the concept of nutrients should be used.Fermentation is a metabolic process that uses enzymes to cause chemical changes in organic substrates. It is described as the extraction of energy from carbohydrates in the absence of oxygen in biochemistry. It can also refer to any procedure in which the action of microbes results in a beneficial alteration to a food or beverage in the food industry. Zymology is the scientific study of fermentation.Fermentation is the most common way for bacteria to produce adenosine triphosphate (ATP) through anaerobic breakdown of organic materials. Fermentation has been utilised by humans to make meals and beverages since the Neolithic period. Fermentation, for example, is used to preserve lactic acid, which is found in sour foods like pickled cucumbers, kombucha, kimchi, and yoghurt, as well as to make alcoholic beverages like wine and beer. Fermentation takes place in all species' gastrointestinal tracts, including humans.

Conclusion

Other types of fermentation include mixed acid fermentation, butanediol fermentation, butyrate fermentation, caproate fermentation, acetone–butanol–ethanol fermentation, and glyoxylate fermentation. Most industrial fermentation uses batch or fed-batch procedures, although continuous fermentation can be more economical if various challenges, particularly the difficulty of maintaining sterility, can be met.

*Correspondence to

Dr. Chipo Sibanda

Department of Food Microbiology

Catholic University of Zimbabwe

Harare

Zimbabwe

E-mail: chipo.sib95@suz.zw

Citation: *Sibanda C. Food toxicology and fermentation technology. J Food Sci Nutr. 2021;4(11):2.*