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Editorial

The Basics of Food Science: An Overview

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EDITORIAL

Food science encompasses both the basic and applied sciences of food, beginning with the overlap of agricultural and nutritional science and progressing through the scientific elements of food safety and processing, informing the development of food technology. Food science draws together a variety of scientific fields. It includes principles from chemistry, physics, physiology, microbiology, and biochemistry, among others. Chemical engineering concepts, for example, are used in food technology. Food scientists' responsibilities include product development, shelf-life studies, sensory evaluation of products utilising survey panels or future consumers, as well as microbiological and chemical testing. More fundamental phenomena that are directly linked to the manufacturing of food products and their qualities may be studied by food scientists.

Food chemistry

Food chemistry is the study of all biological and non-biological components of foods' chemical processes and interactions. Meat, poultry, beer, and milk are examples of biological substances. It comprises areas like as water, vitamins, enzymes, colours, is comparable to biochemistry in terms of its main components such as carbohydrates, lipids, and protein. This field also includes how products change as a result of various food processing procedures, as well as ways to improve or prevent this from happening.

Physical chemistry of food

Physical and chemical interactions in foods are studied using physical and chemical principles applied to food systems, as well as the use of physicochemical techniques and apparatus for the research and analysis of foods.

Microbiology of food

Microorganisms that inhabit, manufacture, or contaminate food are studied in food microbiology, as are microorganisms that cause food rotting.

In food science, however, "good" bacteria, such as probiotics, are becoming increasingly significant. Microorganisms are also required for the manufacture of fermented foods such as cheese, yoghurt, wine, and other beverages.

Food technology

The technological components of food technology: Food preservation was the focus of early scientific research into food technology. The invention of the canning method by Nicolas Appert in 1810 was a watershed moment. Although the procedure wasn't called canning at the time, and Appert didn't fully understand the theory behind it, canning has had a significant impact on food preservation techniques.

Foodomics

Foodomics was defined in 2009 as "a discipline that examines the Food and Nutrition domains using advanced -omics technology to promote consumer well-being, health, and knowledge." Foodomics necessitates a synthesis of food chemistry, biology, and data analysis.

Molecular gastronomy is a branch of culinary science that studies the physical and chemical changes in materials that occur throughout the cooking process. Molecular gastronomy is a branch of culinary science that studies the physical and chemical changes in materials that occur throughout the cooking process. Its curriculum is divided into three axes, since cooking is thought to have three components: social, artistic, and technical.

Food science is typically studied at land-grant universities in the United States. Women who had attended chemistry programmes at land-grant universities (which were state-run and largely under state mandates to allow for sex-blind admission) but had difficulty finding jobs due to widespread sexism in the chemistry industry in the late 19th and early 20th centuries were among the country's pioneering food scientists. They found alternate employment as lecturers in home economics departments after their traditional career prospects were blocked, and utilised this as a springboard to launch the foundation of many modern food science programmes.

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