

Use of Analytical Chemistry in Foods and Food Technology

Sakinala Sowmya*

Department of Chemistry, Osmania University, Hyderabad, Telangana, India

Editorial

The application of Analytical Chemistry to the study of food composition spawned a new science called Bromatology two centuries ago. This research, now known as Food Chemistry, can be thought of as a branch of chemistry that focuses on the study of food, especially the qualitative and quantitative characterization of its main components (lipids, proteins, carbohydrates, vitamins, and minerals). Food products, on the other hand, can be consumed as is or subjected to procedures such as recycling and transformation processes, with all of the ramifications that come with the potential for a reduction in final product quality. As a result, the tremendous growth of the food industry over the last fifty years has expanded the reach of analytical chemistry to include not only food but also food technology, which is critical for increasing the development of a wide range of foods.

Furthermore, numerous scientific evidence has now definitively demonstrated the beneficial role that certain nutritional factors present in food matrices, especially of vegetable origin, such as vegetable fibres, antioxidant compounds, specific groups of lipids, bioactive peptides, and so on, can play in the prevention of widespread chronic and degenerative diseases (cardiovascular diseases, neoplasms, metabolic syndrome). More precisely, a high intake of fruits and vegetables has been linked to a reduced risk of cardiovascular disease and some forms of cancer.

Furthermore, in recent years, the idea of a circular economy, i.e., a framework focused on the ability to Reuse, Recover, and Recycle (Three R) waste materials from different processing phases, or even to prevent them, has become increasingly common, even in the food sector. As is well established, waste production leads to contamination of the air, water, and soil, as well as climate change and biodiversity loss. However, it should be noted that some agri-food waste contains a mixture of substances that are not

eliminated even after use. As a result, the latest green philosophy envisions the development and testing of new methods for extracting useful compounds from plants, herbs, algae, and other species, as well as waste materials, in order to encourage global population growth that is sustainable. As a result, bioactive compounds can be recovered using suitable technologies and used in a variety of industries.

Based on the foregoing premises, numerous studies have been conducted in recent years to identify beneficial substances from various matrices, especially of vegetable origin, in order to evaluate their use in various sectors such as pharmaceutical, cosmetic, herbal, and food. The matrices under investigation will be subjected to extraction processes, with the detection and characterization of molecules of nutraceutical interest following. Classic biochemical methods are used to characterise the structure of these molecules, which are increasingly being combined with advanced techniques, such as proteomic and metabolomic approaches based on chromatographic, electrophoretic, mass spectrometry, and nuclear magnetic resonance technologies. Processed materials and/or other processes of interest are often subjected to the same extraction, detection, and characterization procedures.

To summarise, the findings of the various studies presented will greatly aid in the discovery of new bioactive molecules as well as the explanation of structural and functional properties of various bioactive compounds in order to consider their potential applications in various fields. On the other hand, studies on the extraction, detection, and characterization of bioactive substances, as well as food technology and quality control and food protection, are being conducted using some of the most cutting-edge methods available today. As a result, in terms of both information and technology, the multidisciplinary methodology presented in this Special Issue will serve as a benchmark for the analysis and evaluation of the impact of foods, natural substances, and nutraceuticals on social wellness.

How to cite this article: Sowmya Sakinala. "Use of Analytical Chemistry in Foods and Food Technology." *J Environ Anal Chem* 8(2021): 306

*Address for Correspondence: Sakinala Sowmya, Department of Chemistry, Osmania University, Hyderabad, Telangana, India, E-mail: Sakinala.sowmya55@gmail.com

Copyright: © 2021 Sowmya S. 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.

Received 26 April, 2021; Accepted 30 April, 2021; Published 05 May, 2021