

GUEST EDITORIAL

Emerging Technologies in the Area of Food Sciences

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In the modern era, world has experienced tremendous boost in the field of food science and technology, realising its impact on the economic growth and people's standard of living. India is using its newer technology for food processing in the field of science and technology. We are among the world's top nations in the number of scientific publications and patents in food technology. The government has made considerable investment and is encouraging public-private partnership to achieve self-reliance in different agricultural sectors. It has a strong presence in the field of biotechnology, particularly related to agriculture technology, including pre- and post-harvest management, processing technology etc.

Defence Food Research Laboratory (DFRL) worked in the areas of food and nutrition with nearly 50 years of experience in carrying out research and development in nonoperational and operational feeding of the Armed Forces, i.e., supply, and storage including preservation to prevent chemical and biological degradation under all kinds of environments prevailing in the country. The argument by stating of DFRL that the food and nutritional requirements of the Services cannot be determined in isolation to the total environment in which the military personnel operate in peace and natural war times. The examples are food requirements of sailors in submarines and soldiers in high altitude and cold regions to highlight the need for continual and integrated approach.

The R&D efforts at DFRL are aimed at newer designing and engineering lightweight, convenient, pack rations with environmentally biodegradable packing materials, eco friendly for Army, Navy, Air Force and other paramilitary forces which do not require any elaborate cooking or preparation at the consumer's end and remain shelf-stable under varying climatic conditions for periods ranging from 6 months to 1 year.

Through enormous and substantive contributions, DFRL has developed a wide variety of food products of Indian dietary matching the mainframe palate tastes of the country. Many of the DFRL foods born out of innovative state-of-the-art

technologies lend themselves eminently suitable to industrial scale commercial exploitation by enterprising entrepreneurs of different genre.

Traditional methods for microbial detection can no longer match the pace of today's food processing and global distribution network. However, emerging rapid sensor and detection platforms can provide timely, actionable information needed to lessen the human and economic burdens levied by foodborne diseases. Development of newer detection techniques like various multiplex detection, antimicrobial peptides, light scattering sensor, aptamers, new advanced colorimetric assay, allergen detection, omic- and genetic-based technologies are enhancing the ability to detect the Whole Genome Sequencing (WGS). The WGS provides a powerful and expanding range of information to identify targets for the development of rapid and specific detection and identification systems for food borne pathogens, which are being implemented for source tracking and as part of routine surveillance systems.

We have covered various forms of articles including basic research and its applications keeping in mind the growing research in the area of food technologies. Some of topics like quality aspects and storage evaluation of freeze dried probiotics, leafy vegetables with functional properties, bioaccessibility and nutritional attributes of commercial formulations, radiation processing of preservation technique for meat products, development of compressed meat based bars, production of inulinase from fungal species and its application for use as prebiotics, low glycemic index food materials, effect of packaging materials and storage on quality attributes of freeze dried phytoproducts.

It is an honour for me to serve as the Guest Editor of this Special Issue. I whole heartily acknowledge all the authors for their outstanding and overwhelming contributions. I am grateful to the Editor-in-Chief, the Editorial Board, and the staff of the DLSJ for their support in releasing the special issue.

Guest Editor

Dr Natarajan Gopalan received his PhD (Zoology) and PDF from OUHSC, USA. Presently working as Scientist 'F' at DFRL, Mysuru. He is having vast experience in vector borne diseases diagnosis and monitoring, new process preparation of large scale recombinant proteins for therapeutic and diagnosis purposes and novel therapeutic paradigms to inflammation for digestive diseases like colon and pancreatic cancers.