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Guest seminar

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Overview of Nonthermal Food Processing Technologies in China

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Non-thermal food processing technologies encompass a variety of approaches aimed at ensuring food safety and extending shelf life as alternatives to conventional thermal treatments. By inactivating microbial contaminants without the application of high temperatures, these technologies preserve heat-sensitive compounds and better maintain the sensory and nutritional qualities of foods, thereby meeting the growing consumer demand for safe, natural, and minimally processed products. Since the late 1990s, research on non-thermal processing technologies in China has achieved remarkable progress, with several technologies now entering commercial application.

This presentation reviews the evolution of non-thermal food processing in China and highlights our group's major advances in the high-pressure processing (HPP) of fruit and vegetable (F&V) juices. These include studies on microbial inactivation mechanisms and strategies, the establishment of an HPP-based integrated processing system for quality retention, and the industrial development of HPP F&V juices in China. Finally, the presentation outlines perspectives on the future development and potential of HPP in China.

Short Bio

Dr. Xiaojun Liao is a professor and the Dean of the College of Food Science and Nutritional Engineering at China Agricultural University. As an internationally recognized expert, he has made important and sustained contributions in the development of fruit & vegetable safety control technologies, such as high pressure processing and high pressure carbon dioxide, which have significantly advanced the knowledge and revolutionize the industry.

Prof. Liao has been credited with 78 patents, authored over 400 peer-reviewed research articles and 8 books. He was recognized by Elsevier as one of the Most Cited Chinese Researchers in Agricultural and Biological Science for eleven consecutive years from 2014. He drafted and led the establishment of 10 industrial standards on F&V juice and the very first Chinese National Standard on food high pressure processing technology. He is the recipient of two National Science and Technology Progress Awards (2nd Tier), six provincial-level awards, one National Excellent Patent Award, and one National Pioneer Innovation Award. He also received the Food Excellent Contribution Award and Innovation Award from the Chinese Institute of Food Science and Technology (CIFST) and Lifetime Achievement Award from China Canned Food Industry Association for his outstanding career. He has been selected as the State Council Special Allowance Expert, High-level Talents of the National Special Support Plan, Shen-Nong High-level Talents, and Outstanding Talents in Agricultural Researches.

Prof. Liao is the Director of the Key Laboratory of Fruit and Vegetable Processing of the Ministry of Agriculture and Rural Affairs and the Director of the Beijing Key Laboratory of Nonthermal Processing of Food. He serves as the Vice-Chairman of the 3rd National Technical Committee for Food Quality Control and Management Standardization (China), the Secretary-General of the 8th Food Science and Engineering Education Evaluation Board, and the Secretary-General of the 1st National Steering Committee for Graduate Education in Food and Nutrition. He is a member of the 11th Steering Committee for Undergraduate Education in Food Science and Engineering and a member of the China National Food Safety Standards Review Board.

He is a member of the executive committee of the International Society of Food Engineering and a previous member-at-large of the Nonthermal Processing Division of IFT. He is the Editor-in-Chief of Food Innovation and Advances and Editor-in-Chief of Science and Technology of Food Industry (in Chinese). He is a member of the Editorial Boards of several scientific journals, such as Advanced Science, Innovative Food Sciences and Emerging Technologies, Future Foods, Food Frontiers, Food Engineering Reviews, and Transactions of the Chinese Society of Agricultural Engineering.

Webinar Host

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