Thu. Sep 5, 2019

Hall A

Keynote Lecture | Food Safety

[5-0900-A] Keynote Lecture 5th

Chair:Olaniyi A. Fawole(Stellenbosch University, South Africa) 9:00 AM - 10:15 AM Hall A (Main Hall)

[5-0900-A-01] Microbiological Risk of Nonthermal Food Preservation Technologies: outputs from High Hydrostatic Pressure studies and state of art

*Amauri Rosenthal¹ (1. Embrapa Food Technology(Brazil)) 9:00 AM - 9:30 AM

[5-0900-A-02] Microbial Safety of Traditionally Fermented

Foods in East and South Asia

*Anthony Mutukumira¹ (1. Massey University(New Zealand)) 9:30 AM - 10:00 AM Keynote Lecture | Food Safety

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[5-0900-A-01] Microbiological Risk of Nonthermal Food Preservation Technologies: outputs from High Hydrostatic Pressure studies and state of art

*Amauri Rosenthal¹ (1. Embrapa Food Technology(Brazil)) Keywords: Microbiological risk, Nonthermal, Hydrostatic pressure

Nonthermal emerging technologies have been industrially applied or studied for food preservation as an alternative thermal processes for obtaining products with better nutritional and sensory attributes. Several issues may be considered for designing the process to avoid microbiological risks, such as food composition and other characteristics, baroresistant variability of target microorganisms, sub lethal injuries and recovery capacity, storage conditions, inactivation and growth kinetics after microbial recovery. Furthermore, the matter turns even more complex when involving hurdle technologies by combining other technologies with high pressure for food preservation. This presentation discusses the main aspects to be considered in process design and validation based on different studies and commercial examples with different food products.

9:30 AM - 10:00 AM (Thu. Sep 5, 2019 9:00 AM - 10:15 AM Hall A)

[5-0900-A-02] Microbial Safety of Traditionally Fermented Foods in East and South Asia

*Anthony Mutukumira¹ (1. Massey University(New Zealand))

Dr Tony Mutukumira gained his Doctor Scientarium Degree (PhD) in Food Science and Technology at The Norwegian University of Life Sciences in Norway, Ås, where he worked on the development of lactic fermented milks using novel cultures. His current research includes food safety, food preservations and food fermentations with a special interest in the development of fermented functional foods. Tony also has particular interest in preservation using emerging technologies such as HPP and UV. He is, however, passionate about using natural food preservatives. Tony is a Fellow of the New Zealand Institute of Food Science and Technology and several other professional bodies which include The South African Association of Food Science and Technology (SAAFoST), South African Society of Dairy Science and Technology (SASDST), and The International Union of Food Science and Technology (IUFoST) Committee on Distance Education. Tony is presently the Secretary of the Food Safety Working Group of the International Commission of Agricultural and Biosystems Engineering (CIGR). Tony is a scientific reviewer to several international peerreviewed journals which include the International Journal of Food Microbiology, Food Science and Technology International, Journal of Natural and Mathematical Sciences, and Food Pathogens and Diseases. Tony has published more than 70 papers in scientific journals in addition to presenting and chairing sessions at several international conferences.

Keywords: Food safety, Traditional fermentation, Asian foods and beverages

Traditionally fermented food and beverages of East and South Asia play a dominant role in the culture and heritage of the region. For centuries, Asians have been practicing traditional food fermentations generating a wide diversity of products with unique attributes. Typical indigenous fermented products in East and South Asia include cereals and legumes, fruits and vegetables, milk, meat, fish and sea-foods, condiments and beverages. All these products are renowned for their appealing sensory profiles and are considered

nutritious, thus contributing to food security. Their specific recipes and sensitive preparation methods are highly depended on the indigenous knowledge of the native communities which is transmitted through generations with little, if any documentation. Traditional fermentation generally involves the use of an undefined microflora which naturally developed as the dominant starter culture through traditional fermentation techniques such as back-slopping and repeated use of fermenting vessels. Each fermented food is characterised by a group of distinct microflora and typical examples of the most common microorganisms used are lactic acid bacteria, yeasts and moulds. The mode of action of traditional fermentation ensure the safety of fermented foods through synthesis of numerous antimicrobial compounds, and removal or destruction of harmful substances. However, improper handling, low quality raw materials, incorrect processing conditions, poor hygiene and sanitation enable pathogens and their toxic metabolites to impart a potential risk on food safety. Synergistic interactions among beneficial microflora, antagonistic effects on undesirable microbiota and the utilisation of certain natural antimicrobial ingredients in food preparation contribute to safeguard the safety of the products further. The paper provides a background to the traditional fermented foods in East and South Asia, associated microbial hazards and assuring microbial safety.