International Union of
Food Science and Technology

Strengthening Global Food Science and Technology for Humanity

IUFoST

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

SESSION TITLE: **Redefining Food Processing Critical Interventions Enabling Food Security, Supporting Consumer Needs and Sustainability of Global Food Systems (IUFoST-UNIDO Session)**

SESSION ABSTRACT:

Food processing is a series of interventions where methods and techniques are used to transform raw food materials into products that are safe, palatable, and convenient for consumption, possibly with a better food safety profile and a longer shelf life. Processing includes a wide range of physical, chemical, and biological operations that enhance flavor, texture and even the accessibility of foods.

Food processing offers valuable contributions to food safety and food security. Yet misconceptions persist associating “All Processed Foods” with an “Unhealthy Food Status”.

Such misconceptions fail to identify the benefits of freezing or pasteurizing as processing interventions, where key nutritional benefits may be preserved when we rely on the non-thermal pasteurization techniques currently in play.

Science and Policy discussions continue with the aim to offer approaches of food classification, that account for a diversity of parameters including processing and formulation, amongst others.

By providing a clear framework for assessing the health impact of food products, well designed and methodologically sound food classification systems empower individuals to make informed dietary choices and equip policymakers to implement effective and evidence-based regulations.

This session will bring forward the broad spectrum of policy agendas possibly impacted by food classification systems, supporting consumers’ health and the development of sustainable food production systems. The role of the IUFoST-UNIDO Food Processing Platform will be discussed as an enabler to food processing solutions serving sustainable and resilient food systems.

The session will also showcase the collaboration between the food science and nutrition science communities exemplified by the partnership being shaped between the International Union of Food Science and Technology (IUFoST) and the International Union of Nutrition Science (IUNS) and the role it ought to play as a cornerstone for the continued methodological development and research related to well-defined food classification systems that inform regulatory frameworks and policy decisions.

Programme:

(1) **Hongda Chen** and **Ali Badarneh** Co-chairs

(2) **Samuel Godefroy**
TITLE: Harnessing Food Processing Science for Safe, Sustainable, and Equitable Nutrition – A Perspective from IUFoST

(3) **Ali Badarneh**
TITLE: Leveraging Food Processing as a Driver of Inclusive Industrial Growth: The UNIDO Model

(4) **Jeya Henry** .
TITLE: Significance of Processed Food For Low Income and Middle Income Countries – a perspective.

(5) **Susana Socolovsky**
TITLE: **Food Classification and Its Policy Implications in Latin America: Addressing the Scientific and Practical Ambiguities**

(6) **Erich Windhab**
TITLE: Beyond ultra-processed foods: A comprehensive multi-criteria classification system

(7) Samuel Godefroy
Summary

(8) **Discussion/Q&A**

Title: Harnessing Food Processing Science for Safe, Sustainable, and Equitable Nutrition – A Perspective from IUFoST

Prof. Samuel Godefroy, *President of the International Union of Food Science and Technology (IUFoST)*

Full Professor – Food Risk Analysis and Regulatory Policies, Food Risk Analysis and Regulatory Excellence Platform (PARERA), Food Science Department and Institute of Nutrition and Functional Food (INAF), Laval University, Quebec City, QC. Canada

Abstract: Food processing, grounded in scientific principles, plays a critical role in reducing food loss, ensuring food safety, and improving access to nutritious and affordable foods. This IUFoST perspective underscores the essential contributions of processing technologies in extending shelf life, preserving quality, and enhancing the resilience and sustainability of food systems—particularly in regions facing infrastructure and resource constraints.

Food classification systems that categorize foods primarily based on processing levels, when not based on clear scientific criteria, can misrepresent the role of processing, mislead consumers, and influence policy in ways that may not align with public health goals.

IUFoST calls for evidence-based approaches that evaluate foods on their nutritional value and health impact, rather than on processing status alone, to better support global health and food security goals.

Title: Leveraging Food Processing as a Driver of Inclusive Industrial Growth: The UNIDO Model

Ali Badarneh, *Chief, Food Security and Food Systems Division, United Nations Industrial Development Organization (UNIDO)*

Abstract: This presentation outlines UNIDO's global approach to strengthening food systems through the lens of inclusive and sustainable industrial development. It highlights the central role of food processing as a catalyst for value addition, job creation, and economic empowerment—particularly in developing and transitioning economies. Drawing from UNIDO's international portfolio of projects, the talk will illustrate how the organization bridges applied food science and industrial implementation to enhance productivity, safety, and competitiveness across food value chains. Emphasis will be placed on the importance of innovation, technology transfer, and regulatory alignment in transforming food processing into a driver of resilient and equitable industrial growth.

Significance of processed food for low income and middle-income countries; A perspective.

Prof. Jeyakumar Henry, *Senior Advisor, Global centre for Asian women's health, National University of Singapore*

Abstract: Food insecurity and Malnutrition in low and middle-income countries (LMIC) has sharply increased in recent years. It is estimated that by 2030, over 600 million people will be hungry. Young children, female adolescents, and women of reproductive age, remain the most vulnerable groups. Undernutrition (stunting and wasting) and micronutrient deficiency affect nearly 2.5 billion people. The commonest micronutrient deficiencies are iron, iodine, vitamin A, zinc, and folate-Sometimes called "hidden hunger". Since the late 1940's, large scale food fortification in both America and Europe, dramatically reduced the prevalence of Pellagra, Iron deficiency anaemia and endemic goitre. Today, Food fortification has become a valuable technology to eradicate "hidden Hunger". Food fortification has been successfully used in many LMIC to reduce anaemia, Vit A, niacin, zinc and iodine deficiency. Secondly, the treatment of severe acute malnutrition (SAM) in children requires the consumption of a high- energy, high -protein food, for rapid growth -commonly called Ready to use Therapeutic Foods (RUTF). RUTF is composed of peanuts, milk powder, oil, sugar, minerals and Vitamins. RUTF in its initial form and its modified formulations, have been locally manufactured in several LMIC to treat SAM. This has significantly facilitated the treatment of SAM in the community, rather than in hospitals, leading to

reduced morbidity and mortality in children. Under the present NOVA classification, food fortification and RUTF will be classified as NOVA Group 4, Ultra Processed food (UPF) . The unintentional consequence of this NOVA classification, will impede our progress in treating undernutrition and further delay many LMIC's desire to meet their Millenium Development Goals (MDG).

Food Classification and Its Policy Implications in Latin America: Addressing the Scientific and Practical Ambiguities

Dr. Susana Socolovsky, *Past President of the Argentine Association of Food Technologists - President Elect of the Latin American and the Caribbean Association of Food Science and Technology (ALACCTA)*

Abstract: The early adoption in 2014 of the NOVA system and the Ultra-Processed Food (UPF) concept in the Dietary Guidelines for the Brazilian Population, advising consumers to "avoid UPFs" and "to limit the use of processed foods" was imitated soon after by the governments of Uruguay, Ecuador, Peru, Mexico and Argentina. Uruguayan dietary guidelines (2016) visibly showed that any food containing a long list of ingredients, and a list of food additives was considered an ultra-processed food, including sugar free yogurts, fortified breakfast cereals, multigrain packaged breads, chocolate milks, as examples. During the same period Latin American countries adopted front of pack regulations. With the public understanding that any food containing a warning sign was "ultra-processed" consumers decreased purchases of industrialized foods with warning signs for a short period of time and freely continued eating traditional foods high in fat, sugar and salt, education campaigns were scarce and inefficient in spreading nutritional advice. As consumption of industrialized foods does not exceed 30% of total calories consumed daily in any of these countries, the measures have had null positive effects and obesity is raising steadily. The presentation will focus on the multiple consequences of the adoption of an ambiguous classification system, such as the uncertainty caused for consumers, the reduced offer of nutritious and safe food in school canteens and the complications that food producers are facing to reduce sugar content of foods and beverages as intensive sweeteners are required to show a warning sentence in countries such as Mexico, Argentina and Colombia.

Beyond Ultra-Processed Foods: A Comprehensive Multi-Criteria Classification Approach for Food Products

Erich Windhab[1], Lilia Ahrné, Hongda Chen, Christiani Jeyakumar Henry, Hyun-Sook Kim, Barbara Schneeman
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(authors are members of the IUFoST Task Force on Processing for Nutrition, Diet & Health)

Abstract

The Ultra-Processed Food (UPF) classification, introduced through the NOVA system in 2010, has dominated public discourse on food quality since a couple of years. While widely used as a proxy for

unhealthy foods and associated to obesity and metabolic diseases, the UPF framework suffers from fundamental limitations: its definition lacks scientific rigor and clarity, its application in product development remains inconsistent, and it fails to address the nutritional realities of low-income countries where food security is paramount.

Current food classification systems focus predominantly on nutritional value while neglecting other critical quality dimensions. A comprehensive evaluation of food products must consider multiple key properties: safety, sustainability, affordability, palatability, and convenience, in addition to the nutrition value. These properties are determined by two distinct but interrelated factors: product formulation (F) and processing methods (P). While F and P influence each other, they can be modified independently, necessitating separate analytical approaches.

To address these aspects, we present two complementary classification elements being: (A) the Product Rating Integration System for Multi-characteristics (PRISM), which provides a comprehensive, consistent framework for evaluating food products across all mainly relevant quality criteria; and (B) the IUFoST Formulation and Processing Classification Scheme (IF&PC), which differentiates and quantitatively describes the independent influences of formulation and processing on each of the selected food quality charateristics /1/.

This presentation will demonstrate how these new framework overcomes the shortcomings of current classification systems, provide practical examples of their application, and discuss their implications for food policy, product development, and consumer guidance.

The proposed systems offer a more nuanced, scientifically robust approach to food classification that also better serves diverse global populations and stakeholder needs.

/1/ Ahrné L., Chen H., Henry, C.J. , Kim H.-S., Schneeman B. & Windhab E.J. (2025). Defining the role of processing in food classification systems - the IUFoST formulation & processing approach. ***npj Sci Food*** **9**, 56 (2025). https://doi.org/10.1038/s41538-025-00395-x