

Summary Report

IUFoST (FIFSTA)-FoSTAT Roundtable Discussion on

“Understanding Ultra-Processed Food and its Potential Consequences”

Organized by IUFoST Global Outreach and Industry Relation (GOIR) Working Group,
Food Science and Technology Association of Thailand (FoSTAT)
and Federation of Institutes of Food Science and Technology of ASEAN (FIFSTA)

Thursday 15th June, 2023, 1:00 – 4:00 p.m. (Bangkok time)

Onsite: at BITEC, Bangkok, Thailand, MR220

Online: Zoom Meeting & Facebook Live

The term “Ultra-processed foods” (UPFs) has raised a controversial discussion among food science, food technology, health and nutrition community. While some countries have already adopted the term and issued a health advice to avoid UPF consumption, general consumers do not even understand what UPFs are. In this regard, IUFoST GOIR Working Group in collaboration with FoSTAT and FIFSTA organized this roundtable discussion (RT) entitled “Understanding Ultra-Processed Food and Its Potential Consequences” at the Food Innovation Asia Conference 2023 on June 15th, 2023, BITEC Exhibition and Convention Center, Bangkok, Thailand. The objective of this RT discussion session was to provide the platform for the introduction of UPF concept as well as for the public discussion, based upon scientific evidence, regarding UPF potential consequences on the aspects of food industry and human health.

On this occasion, Prof. Dr. Aman Wirakartakusumah, IUFoST President, kindly provided opening remarks. In addition, he addressed vision and mission of IUFoST in strengthening global food science and technology for humanity. Prof. Dr. Pavinee Chinachoti, Chair of IUFoST GOIR Working Group, introduced the members of GOIR Working Group and its vision and mission; to assure food security through communication and engagement among academic, food industry and adhering bodies. As UPFs and NOVA food classification system are now under an extensive attention, GOIR Working Group, asked by IUFoST, decided to provide a discussion platform among the community on this topic.

The session began with a presentation, entitled “**What are Ultra-Processed Food (UPF)?: Origin, Definition and Confusion**”, by Dr. Yuwares Malila (National Center for Genetic Engineering and Biotechnology, BIOTEC, Thailand). She took off by introducing NOVA food classification system which classifies foods based on degree of processing into four groups. Stated in FAO report (2019), **group 1: unprocessed and minimally processed foods**, are the foods are edible parts of plants (fruits and vegetables), animals (meat) and microbes that are not processed or minimally processed using the methods (e.g., crushing, size reduction, drying, chilling, freezing) designed for preservation and pleasant for consumption. Pasteurized foods and juices are also categorized into this group. **Group 2: processed culinary ingredients** are substances obtained directly from group 1 and used to prepare, season and cook group 1 foods. **Group 3: processed foods** are products made from group 1 that has

passed preservation methods such as canning, brining, and fermentation. Examples of group 3 foods are canned foods, bottled brined vegetables, fruits in syrup, ham, bacon, cheese, freshly baked bakeries (e.g., breads, cookies and cakes). **Group 4: UPFs** are defined as formulations of ingredients mostly exclusively used in industry. UPFs are made by a series of industrial processes, many requiring sophisticated equipment and technology, hence they are “ultra-processed”. UPFs often contain chemically modified ingredients such as high fructose corn syrup and interesterified oils, that are not or rarely used in culinary cooking. UPFs are formulated with oils and sugars as energy sources, preservatives for shelf-life extension, along with other additives (e.g., colorants and flavoring agents) for making the products more appealing to consumers. The UPFs are manufactured using industrial techniques (e.g., extrusion, moulding and pre-frying) and packed in sophisticated packaging usually with plastic and other synthetic materials. Overall, UPFs are designed for high profits, convenience and high palatability so that they can displace freshly prepared dishes and meals. UPF consumption has been linked with non-communicable diseases (NCDs). Dr. Malila then showed chronological development of the term “UPFs” and NOVA classification system. The UPFs were firstly mentioned in 2009 by Monterio C. A. in an article titled " Nutrition and health, the issue is not food, nor nutrients, so much as processing" (Public Health Nutrition, 2009; 12(5): 729-731) in which processed foods were divided into 3 groups; 1) minimally processed foods 2) processed foods (i.e., oil, butter, salt, sugar), and 3) UPFs. It was recommended, in this article, that UPFs should be avoided or at least consumed at minimum. Government should be responsible for protecting people from consuming UPFs. Later, Brazilian Ministry of Health released dietary guidelines for the Brazilian Population in 2015. The guideline has been built upon Monterio’s article with a modification of food groups into 4 categories; 1) natural & minimally processed foods 2) oil, fats, salts and sugar 3) processed foods and 4) UPFs. The guideline states that to promote good health, consumers should always choose group 1 foods, limit group 3 consumption, and avoid UPFs. It was also written in the guideline that UPFs have adversely exerted economic, environmental and cultural impacts on Brazil. Afterwards, Monterio et al. presented another article, “The UN decade of nutrition, the NOVA food classification and the trouble with ultra-processing” (Public Health Nutrition, 2017; 21(1): 5-17), in which the term “NOVA food classification system” was mentioned for the first time. In this article, the foods were classified into 4 groups as shown in Brazilian dietary guidelines but the name of group 2 was changed into “process culinary ingredients”. Afterwards, FAO report entitled “Ultra-processed foods, diet quality, and health using the NOVA classification system” was published. Written by Monterio et al, the FAO report is similar with their article published in 2017 with an extension of literature review describing the relationship between UPF consumption and health impact. However, those cited references were observational studies. Only the study of Hall et al (2019) was a 14-day randomized controlled cross-over trial that monitored body mass index of 20 in-patient adult in a hospital. During the presentation, Dr. Malila asked the audience to classify exemplary food items (listed in the FAO report) according to NOVA food classification. It appeared to the audience that it was difficult to precisely categorize several food items as the classification criteria remain unclear. Dr. Malila concluded her presentation by highlighting the recommendation stated in the FAO report that classification of UPFs can be achieved by checking the ingredient list. This recommendation, however, raised a question whether the NOVA and UPFs are about degree of food processing or just food formulation and ingredients.

The program went on to an RT discussion on “Facts, Fads, and Confusion on Ultra-Processed Foods”. The panel included Prof. Dr. Paola Pittia (University of Teramo, Italy), Prof. Dr. Sakamon Devahastin (King Mongkut's University of Technology Thonburi, Thailand), Assoc. Prof. Dr. Chaniphun Butryee (Institute of Nutrition, Mahidol University, Thailand), Dr. Susana Socolovsky (the Argentine Association of Food Technologists), Dr. Pichet Itkor (the Federation of Thai Industries) and Mr. Richard Khaw from (Nanyang Polytechnic University, Singapore, and a representative from FIFSTA). The discussion was moderated by Dr. Malila.

At the beginning of the discussion, the status of UPFs and the NOVA food classification system in each region was updated. Starting by Prof. Dr. Paola Pittia with a brief presentation, **“Update on Ultra-Processed Food and Implication in the European Market Regulation.”**, Dr. Pittia addressed that food and beverage industry is the leading manufacturing sector in Europe. These foods can be classified as UPFs under the NOVA classification system. However, European have not focused on the term “UPFs” and have no regulation regarding UPFs. Anyhow, in January 2023, FOODDRINK EUROPE published a position paper on the consumption of thermal-processed and processed foods. In the paper, three interesting points included 1) warning consumers about UPFs would lead to many unintended consequences, 2) food safety is at the heart of public policy, and 3) there are better solutions to enhance health and sustainability. In other words, the recommendation regarding UPFs would mislead consumers. Currently, the European has implemented the regulation of food information to consumers in a form of nutritional front labeling. Consumers can evaluate "healthy and nutritional" foods by checking a front-of-pack label (FOPL), together with a mandatory nutrition declaration located on the back of the package. This is also how EU educate their consumers towards healthier food choices. One of the FOPLs is the Nutri-Score, the system that gives one of the five classification colors and letters (dark green: A, light green: B, yellow: C, orange: D, and red: E) to food items based upon nutritional levels of food products. As for Italy, nutrition labeling follows a nutri-info which shows total calories, fat, saturated fat, sugar and salt content (similar to Thai Guideline Daily Amounts, GDA). Overall, EU emphasizes more on nutrition than the degree of food processing.

Mr. Richard Khaw, representing ASEAN, addressed under the topic of **“The Rise of Ultra-Processed Foods in Singapore: Implications for the Food Industry”** that Singapore follows the definition of UPFs according to the FAO. Today, Singapore has a high demand for foods that are categorized as UPFs due to its convenience. Most Singaporeans spend their time working; hence, ready-to-eat and frozen foods are becoming popular. Mr. Khaw also analyzed ASEAN food consumption data and found that in 2019, Singapore consumed the highest amount of UPF in ASEAN at 45.4 kg per capita per year, followed by Malaysia, Thailand, Indonesia, Vietnam and the Philippines, respectively. He discussed that the data reflected the agricultural limitation of Singapore. They import food products, including fruits and vegetables accounting for 90% of total food consumed in the country. In this regard, Singapore has planned '30 by 30' - to build up their agri-food industry's capability and capacity to sustainably produce 30% of nutritional needs by 2030. In addition, Singapore aware of dietary-related health impacts, e.g., a risk of obesity, cardiovascular disease and type 2 diabetes. Hence, the government has promoted the use of nutrition labeling (FOPL), modified from EU Nutri-score. They also encouraged consumers to include a healthier choice symbol in their purchasing consideration, and local food processors to use healthier ingredients with, in return, a special incentive. Mr. Khaw also discussed that the challenges and opportunities

in food and health are 1) slim choices of healthier alternatives, 2) an industry-government collaboration, and 3) an increased demand for plant-based and healthy foods. Food industry strategies include 1) reducing unhealthy ingredients, 2) developing more healthy alternatives, and 3) promoting healthy consumption habits through food distribution and marketing channels. In summary, UPF consumption is rapidly increasing in Singapore. This raises concerns about its health impacts. However, government regulations will help promote healthy eating habits. Industry cooperation will give consumers more healthy food choices.

Dr. Susana Socolovsky described the present UPFs-associated situation occurred in Latin America. In 2015, the Pan American Health Organization (PAHO) has released a report on “Ultra-processed food and drink products in Latin America: Trends, impact on obesity, policy implications” in which foods were grouped based on processing level (NOVA classification system). The term “ultra-processed foods” was introduced and now is widely implemented in the region. The PAHO report stated that the relationship between UPF annual sale per capita and increases in body mass index (BMI) can be used to predict obesity. In addition, the FAO report written by Monterio et al. (2019) has drawn attention from health regulatory agencies in several countries. Chile was the first country to introduce a warning label when a nutrient is exceeded showing black octagons stating HIGH IN. Peru also issued the display of similar warning labels, followed by Uruguay. In 2021, Mexico was the first country to use the PAHO Nutrient Profile Model and has issued warning labels for “non-caloric sweeteners, not recommended for children” and “contains caffeine, should be avoided in children”. On the other hand, Brazil uses a symbol of magnifying glass to emphasize the amount of added sugar, saturated fat and sodium. Paraguay has recently adopted a Brazilian warning system. Colombia used a different symbol but also focused on the amount of sugar, saturated fat and sodium; however, in 2023, they adopted the PAHO Nutrient Profile Model and warning labels which was also adopted by Argentina earlier. Dr. Socolovsky pointed out that using the PAHO Nutrient Profile Model as basis for warning labeling can be misleading. As an example, she showed two cheese spread products, original (full-fat) formula and low-fat formula. Based on PAHO, the low-fat formula received three warning logos while the original one received two logos. Because consumers are advised to choose the products with less warning logos, they would choose the full-fat products over the low-fat ones.

Prof. Dr. Sakkamon Devahastin provided his viewpoint on “**Aspects of Food Preservation and Processing**”. He gave an example of coconut milk, which is a widely-used ingredient of Thai culinary cuisine. Originally, the process of making coconut milk includes hand shredding coconut meat and squeezing the liquid out from the flesh. Today, canned coconut milk is available in the market. Indeed, the product is categorized as a UPF as emulsifier is added; however, the canned coconut milk products offer convenience, microbial safety, and long shelf stability. In his opinion, this is an advantage of food processing and appeared to exert no harm to the culture. Family members can still prepare and have meal together alongside the rush of urban lifestyle. Another example is (semi) ready-to-eat Khaw Soi product, traditional northern Thai dish which was named the 2022 best soup from TasteAtlas. Without food processing, people from other countries who do not have chance to visit northern part of Thailand, would not know or try the dish. Hence, UPFs has its own merits. If a manufacturer includes healthy ingredients, then UPF is beneficial. The advantages of food processing are that it extends shelf life of food products, assures the safety, and improve food accessibility and security. Regarding economic and social aspects, family members have more time to work

and earn more money as they can worry less on food preparation. However, one thing to be aware of about UPFs is the excessive use of food additives, especially the synthetic ones. Therefore, it should be switched from synthetic ones to natural food additives such as natural food colorings, or apply advanced processing technology. In summary, food manufacturing should emphasize more on balanced diets, offer more nutritious foods with healthy ingredients. Research and development on healthy processed foods are therefore essential.

As food toxicologist and nutritionist, Assoc. Prof. Dr. Chanipan Butryee suggested that UPFs can be nutritional such as vitamin and mineral supplementation in breakfast cereal. Nutrient fortification can offset the nutrient losses from daily household cooking, especially for vitamin B and C. In contrast, it is not recommended to exclusively consume only UPFs. In Thailand, the Food and Drug Administration, Ministry of Public Health is responsible for the protection of the health and safety of consumers, by ensuring the quality of food products. Food additives and novel foods are the two examples of food products that the manufacturers must verify the safety before the products are launched to the market. This is also included packaging.

As a representative from industry, Dr. Pichet Itkor addressed that Thailand has not yet given a definition of UPF and no action has been taken on UPFs. To him, it remains unclear how the food processing and health are linked. Food processing not only makes the food products more nutritious, but also increases palatability and accessibility of the foods. However, Monterio et al stated those advantages are the causes of dietary overconsumption that lead to the risk of NCDs such as obesity, type 2 diabetes, and cancer. In his opinion, the confusion of NOVA food classification was because NOVA incorporated 3 criteria at the same time; degree of processing level, purpose of processing, and type of processing. For example, production process for cooking oil is very complex. Instead, the oil is classified as a Group 2. Despite being made by the same process, homemade freshly baked bread was classified as Group 3, but packaged bread was classified as Group 4. It is his concern that many countries issued dietary guidelines with a recommendation to avoid UPFs based on only observational studies between UPF consumption and health impact without in-depth understanding what UPFs are. Consumers do not understand nor able to identify UPFs. Dr. Itkor also provided four potential regulatory measures that Thai government might implement regarding UPFs. The first is UPF tax similar to sugar and, soon to be, salt. The second and third measures are marketing restriction and UPF clear zone, respectively. The last one is FoP labeling. Overall, the industry is most concerned about is the use of UPF warning logos. Although it is a voluntary-based practice, it could lead to further standards or preventive measures of UPFs.

Dr. Malila also asked the panel whether the UPF term should be adopted and implemented or whether it might not be suitable. Mr. Khaw responded that harmonization on UPF definition and classification criteria would be beneficial and encourage fair trade. However, he thought it would take a while to get there. The panel was then exchange opinions regarding whether there is a clear scientific evidence on UPF consumption and health impact and how consumers should react towards UPFs. Prof. Dr. Pittia mentioned that it remains unclear how processing affects nutritional levels of foods. Clearly, more scientific information particularly on bioavailability and bioaccessibility of processed food are clearly needed before drawing a conclusion on UPF-related health impacts. Dr. Itgor pointed out that based on incomplete scientific evidence, an issue of warning logo may create unintended drawbacks.

An adverse health impact does not depend solely on consumption of a single UPF but it is a collective result of diets and lifestyles. People often blame fat, saturated fat, sugar, and sodium, but those nutrients are also essential. Health effects associated with those nutrients are resulted from an excessive consumption. Therefore, it is worth returning to the basic principles of nutrition; moderation and nutrition-balanced diets. Assoc. Prof. Dr. Chaniphan commented that although freshly prepared food at home is considered more nutritious, UPFs can also be nutritious alternatives. However, it is recommended to avoid repeated consumption of food products, eat variety of foods, and include fruits and vegetables in the meals. In Thailand, consumers can monitor nutrition labels, GDA labels and health choice symbols as the tools for purchasing nutritious foods. Dr. Devahastin concluded that instead of banning UPFs, adhering bodies should work together to assure that UPFs are safe and nutritious. This requires the collaboration of all stakeholders from many disciplines such as food scientists, food technologists, nutritionists, dietitians, and health-care staff.

At the end of the RT discussion, the audience were asked to participate in an interactive poll. Of 22 participants, 14 have heard about UPFs before joining the session while 6 were not and 2 were unsure. A majority of the participants either did not understand (10 out of 22) the term “UPFs” nor able to classify the foods into this category or were unsure how to do so (12 out of 22). However, 13 out of 25 indicated that after this session, they understand the term more and believe they are able to classify the foods. In contrast, 11 out of 25 were still unsure about the classification criteria. Last but not least, 18 out of 25 expressed no health-related concerns with UPFs. Some audience expressed that food scientists should communicate more with the public.

In closing, Asst. Prof. Dr. Anadi Nithithumyong, President of the Food Science and Technology Association of Thailand concluded that NOVA food classification system is still unclear, leading to confusion. UPF is yet to be understood by consumers. At the same time, it is now impossible for consumers to limit their food consumption only to natural or minimally processed foods. Particularly, the world is facing the issue of food security with the challenge to feed the increasing world population. Lifestyle transformation towards urbanization is expected to continue in many regions. Therefore, it is difficult to solely rely on fresh, unprocessed foods. What should be done is to create collaboration through research and development of processed foods as part of a healthy balanced diet.

The VDO record of this RT discussion session can be found at FIRN Facebook Fan Page (https://fb.watch/lx7Z_Ye555/) Slide presentations of the speakers can be found at <https://drive.google.com/drive/folders/1F70veknZagelKHbw2-UeH8ueeA8-AVTg?usp=sharing>

Attach 1: Speakers and Program



Thursday 15th June, 2023

01:00 – 04:00 p.m. (BKK time)

at BITEC, Bangkok, Thailand

or Join online via Zoom Meeting & Facebook Live

“Understanding Ultra-Processed Food & its Potential Consequences”

Organized by
IUFOST Global Outreach and Industry Relation (GOIR) Working Group,
Food Science and Technology Association of Thailand (FoSTAT)
and Federation of Institutes of Food Science and Technology of ASEAN (FIFSTA)



Organizers



Prof. Dr. Aman Wirakartakusumah
IUFOST President



Prof. Dr. Pavinee Chinachoti
IUFOST Academic Fellow and Board of Director,
Chair of IUFOST GOIR Working Group



Asst. Prof. Dr. Anadi Nithithumyong
FoSTAT President



Mr. Richard Khaw
The Singapore Institute of Food Science and Technology (SIFST)



Free!
Register

Joining online



@firm.fanpage

Speakers



Dr. Yuwares Malila
National Center for Genetic Engineering and Biotechnology



Prof. Dr. Paola Pittia
University of Teramo, Italy



Prof. Dr. Sakamon Devahastin
King Mongkut's University of Technology Thonburi



Assoc. Prof. Dr. Chaniphun Butryee
Institute of Nutrition, Mahidol University



Prof. Dr. Susana Socolovsky
Fellow IAFoST, President of the Argentine Association of Food Technologists Technical Consultant – Regulatory and Scientific Affairs



Dr. Pichet Itkor
The Federation of Thai Industries

Contact: Kanokporn Julai

Tel: 02-0428528 or 001-7232237 Email: coordinator_2@firn.or.th

Time	Topic
12.30 – 01.00 p.m.	Registration
01.00 – 01.10 p.m.	Open Remarks IUFOST President Aman Wirakartakusumah
01.10 – 01.20 p.m.	Introduction of IUFOST GOIR Working group Prof. Dr. Pavinee Chinachoti
01.20 – 01.35 p.m.	“What is Ultra-Processed Food” (UPF)?” : Origin, Definition and Confusion Dr. Yuwares Malila
01.35 – 03.00 p.m.	Scientific Roundtable Discussion on “Facts, Fads, and Confusion of Ultra-Processed Foods” Speaker: 1. Prof. Dr. Paola Pittia – <i>Update on Ultra-Processed Food and Implication in European Market and Regulation</i> 2. Prof. Dr. Sakamon Devahastin – <i>UPF Aspects of Food Preservation and Processing</i> 3. Assoc. Prof. Dr. Chaniphun Butryee – <i>Risk assessment criteria for UPF safety</i> 4. Prof. Dr. Susana Socolovsky – <i>Regulatory Aspects in Latin America (Argentina)</i> (online) 5. Dr. Pichet Itkor – <i>Industry Opinions of UPF</i> 6. Mr. Richard Khaw
03.30 – 03.35 p.m.	Conclusion and Closing Remarks Asst. Prof. Dr. Anadi Nithithumyong (FoSTAT President)
03.35 – 04.00 p.m.	Coffee break

Attach 2: Photos from the events











Attach 3: QR code link to FB record and handouts

Session record on FIRN facebook fan page



Speaker slide handouts

