

# PROGRAM BOOK

"Innovation of Food in the New Normal Era" | 2021





International Food Conference 2021

# Innovation of Food in the New Normal Era

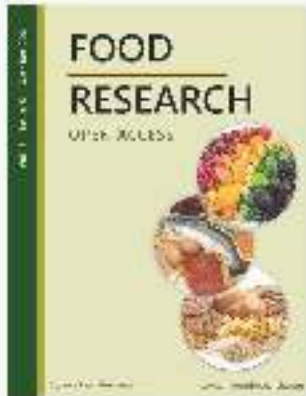
Surabaya, East Java, Indonesia  
November 3<sup>rd</sup>, 2021

**Organized By :**



Faculty of Agricultural Technology  
Widya Mandala Surabaya Catholic University

## In collaboration with :



Food Research Journal



International Journal of Food,  
Nutrition and Public Health



E3S Web of Conferences



Indonesian Society for Lactic  
Acid Bacteria and Gut  
Microbiota (ISLAB-GM)



Center for Food and  
Nutrition Studies Gadjah  
Mada University (CFNS)



Pusat Unggulan Ipteks  
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World Association for  
Sustainable Development  
(WASD)



International Forum for  
Public Health  
(IFPH)



Indonesian Society for  
Functional Food and  
Nutraceutical (ISFFN/P3FNI)



Indonesian Food &  
Beverage Association  
(IFBA/GAPMMI)



Indonesian Association  
of Food Technologist  
(IAFT/PATPI)

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Cokelat nDalem



Mazaraat Artisan Cheese



Giles Brooker Group



- Rice symbolizes one of the staple foods
- The sun symbolizes a bright future. Through this event, it is hoped that there will be innovations that can give hope to overcome food problems
- Fish symbolize food sources; there are plants and animals. The fish also means abundant life
- The test tube represents science
- The house is a symbol of the current condition where many activities are carried out at home, but this does not cause us to stop innovating to produce something better

## **Overall meaning**

Scientific innovation can play a role in managing various food sources, both vegetable and animal commodities, with the hope of providing goodness and prosperity

# The Speech of Rector on The International Food Conference 2021

Our Distinguished Guests, Ladies and Gentlemen,

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Greetings from Widya Mandala Surabaya Catholic University (WMSCU)! On behalf of the University, I herewith would like to warmly welcome all of you, the participants of the International Food Conference 2021.

First of all, I would like to invite all of you to express our sincerest gratitude to our Lord, the Almighty God, for His grace and blessings in our lives that allow us to join this conference in a good health condition although in the midst of Covid-19 pandemic.

This international event is held every five years by the Faculty of Agricultural Technology WMSCU, and the theme of this year is, "Innovation of Food in the New Normal Area". This prestigious and very important conference will provide a number of very prominent and experts in the field of food innovation (science and technology), either from Indonesia or overseas, as keynote and invited speakers, in addition to many paper contributors either via oral or poster presentations. Thus, on this very good opportunity, I would like to express my sincerest gratitude and highest appreciation to all speakers and paper contributors in this conference, for their willingness and time to share their knowledge, skills, expertise, and research findings with other conference participants and community at large. This international event is also intended to strengthen the partnership between higher education institutions and other organizations as their stakeholders, including domestic and international business and government sectors, especially those who are interested and involved in the field of food science and technology.

I hope this international conference will eyewitness and strengthen the University's vision, mission, virtues, and positioning statement as 'a life-improving university' through a high quality academic forum, a long tradition of a well-established university, in order to respond the current and future problems and challenges occurring in Indonesia and elsewhere. Therefore, I would like to thank the Dean, all faculty, staff, and students of the Faculty of Agricultural Technology WMSCU, especially the Steering and Organizing Committees for the theme selection and their great and hard effort, to make this international conference a successful one resulting in a meaningful impact on the global society. Undoubtedly, food as one of the human basic needs is a major, very important, and very critical element in human lives to be seriously studied and reviewed, to ensure the fulfillment of global human's welfare as stated in the Millenium Development Goals.

May this international academic forum increase our awareness, care, commitment, enthusiasm, leading to the significant contribution of academia and higher learning institutes to respond all related issues in the community we serve, through a mutual and sustainable partnership among all involved parties.

Surabaya, November 3<sup>rd</sup>, 2021

Rector



Drs. Kuncoro Foe, G.Dip.Sc., Ph.D., Apt.  
NIK. 241.90.0176

## PREFACE

### **Dean of Faculty of Agricultural Technology Widya Mandala Surabaya Catholic University**

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On behalf of the Faculty of Agricultural Technology, Widya Mandala Surabaya Catholic University, it is my great pleasure to welcome you to the International Food Conference 2021. The International Food Conference (IFC) is a conference held once every five years since 2011. The IFC 2021 is organized by Department of Food Technology, Faculty of Agricultural Technology, Widya Mandala Surabaya Catholic University in collaboration with Indonesian Society for Lactic Acid Bacteria-Gut Microbiota (ISLAB-GM), Pusat Unggulan Inovasi Perguruan Tinggi (PUI-PT) Gadjah Mada University, Center for Food and Nutrition Studies (CFNS)-Probiotic Gadjah Mada University, Perhimpunan Penggiat Pangan Fungsional dan Nutrasetikal Indonesia/Indonesian Society for Functional Food and Nutraceutical (P3FNI/ISFFN), Indonesian Food and Beverages Association, World Association for Sustainability Development (WASD), International Forum for Public Health (IFPH), the Indonesian Association of Food Technologists (IAFT) Surabaya. Due to COVID 19 pandemic, this year IFC is held as virtual conference. The theme 'Innovation of Food in the New Normal Era' addresses the challenging issues of the role of food as one essential contributors in the new normal era.

I would like to thank all honorable speakers: Professor Purwiyatno Hariyadi, Professor Emiko Yanase, Professor Warrapa, Professor Wang Chin Kun, Indah Epriliati, PhD, Dr. Ihab Tewfik, Professor Umi Purwandari, Professor Made Astawan, Professor Budi Widianarko, Dr. Fransisco Elegado, Bertrand Muhoza, PhD, Dr. Satoru Fukiya, moderator Professor Teli Estiosih and Dr. Ardiansyah Michwan and all presenters for your willingness to share your expertise, idea and research today at the IFC 2021. I hope that we will have fruitful discussions today at the IFC 2021.

Furthermore, I would like to thank all collaborators, sponsors, steering committee, organizing committee and all those who directly and indirectly contribute to the organization of IFC 2021. I would also like to apologize for any inconvenience that you might experience during preconference and conference. I hope this conference is useful to all of us to contribute our role in the food sector during this new normal era.

Surabaya, November 3<sup>rd</sup>, 2021

**Dr. Ignatius Srinta**  
**Dean of Faculty of Agricultural Technology**  
**Widya Mandala Surabaya Catholic University**



## PREFACE

# Chairman Indonesian Food & Beverage Industry Association (IFBA)

### **"Innovation of Food in the New Normal Era" The role of food as an essential contributor to the combat against COVID 19**

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Let us express our gratitude that we can still meet, even though online at the 2021 INTERNATIONAL FOOD CONFERENCE (IFC) event is organized by the Faculty of Agricultural Technology, Widya Mandala Surabaya Catholic University, Indonesia. The Covid-19 pandemic has caused us to adapt to online meetings, and this is one of the innovations in communication and discussion. Interestingly, in this new way we can even meet with colleagues around the world in a short time.

Although growth is lower than normal conditions, the Indonesian Food Industry continues to grow positively amid the Covid-19 pandemic. In 2020 the Indonesian Food industry grew by 1.58% and in the first semester of 2021 it grew by 2.95% (YoY). Along with this growth, the contribution of the food industry to the GDP of the non-oil and gas industry also continued to increase, in 2017 the contribution was 34.30% and increased to 38.42% in Q2-2021. This shows that the food industry contributes to the economy and plays an important role in food availability, thereby strengthening food and nutrition security. Availability of food and nutrition is very important during this pandemic Indonesia plans to increase GDP per capita to approximately USD 23 thousand when Indonesia is 100 years old in 2045 (Golden Indonesia), where the current GDP per capita (2020) is USD 3,912. With the increase in GDP, it is estimated that people's purchasing power will increase, and the need for processed food products will be more varied, added value, more qualified, nutritious and functional at the same time. This is a golden opportunity and prospect for the food industry in meeting food needs in Indonesia.

This potential was also responded positively by investors, especially foreign investors, so that investment growth in the food industry sector was also quite good. In 2020, investment in the food industry increased, mainly supported by Foreign Direct Investment which grew by 25.41%, although it was not followed by Domestic Direct Investment, which contracted by 23.77%. Until semester 1-2021, FDI also grew even larger, namely 87.14%, and the contraction of DDI growth narrowed to 18.72%. Totally optimistic that investment in the food industry will continue to increase.

All of these improvements are in order to meet the demand for better quality, nutritious and functional food products. Especially during the COVID-19 pandemic, the need for nutritious food is increasing along with changes in people's consumption patterns which prioritize nutritious food to increase the body's immunity to fight disease (covid-19).

Several surveys show that during a pandemic, consumers pay more attention to food safety and a more nutritious diet. This trend is positive, as it increasingly encourages producers to pay more attention to it to meet consumer demand. Considering these conditions, the role of food products is increasingly important in maintaining food and nutrition security. This role must be supported by innovation in producing more affordable, value-added, quality, nutritious and even more functional food products.

Innovation in all aspects, including finding alternative raw materials and ingredients that are cheaper and of higher quality; innovation in production processes (technological engineering) that are more efficient and green technology; innovation in food packaging; even innovations in logistics and marketing. Especially during this pandemic, new breakthroughs in logistics and marketing that are more efficient are needed amid restrictions on community activities. One of them is the growing development of e-commerce and digital platforms

Innovation is defined as the integration between invention and commercialization. So far, many inventions have been produced by researchers and academics, but have not succeeded in becoming commercial products. So, for the success of innovation, collaboration of stakeholders is needed. Quadruple helix collaboration needs to be continuously encouraged, namely between Business – Academics – Government – Community so that existing inventions can be commercialized into product innovations that are very much needed by consumers.

We believe, if collaboration can occur and is based on a "business approach", then innovation will result in a sustainable business. And make the contribution of processed food products even greater in food security and nutrition.

Congratulations to the Faculty of Agricultural Technology, Widya Mandala Surabaya Catholic University, Indonesia for holding the 2021 INTERNATIONAL FOOD CONFERENCE (IFC). Hopefully this event will be useful for the development of food science and technology and contribute to the growth of the food industry. And more inventions can become innovations in this event. Success for all participant  
Thanks for the collaboration. Stay safe and healthy for all.

**Ir. Adhi S. Lukman**

**Chairman Indonesian Food & Beverage Industry Association (IFBA)**

**November 1<sup>st</sup>, 2021**

## PREFACE

# Chairperson International Food Conference 2021

Honorable guests, ladies and gentlemen

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Welcome to the INTERNATIONAL FOOD CONFERENCE 2021, virtual, at Widya Mandala Surabaya Catholic University, Surabaya, Indonesia. We are delighted to have you here to meet and to share our knowledge, research, and discuss latest trend in the area of food science and technology. This year is the third edition of the conference after successful first edition in 2011 and second edition in 2016.

As we already aware that the field of Food Technology is growing rapidly and its development is making a great impact on the health and wellbeing of the society. Therefore, food technology has become one of the most important contributors in human life.

The theme "Innovation of food in the new normal era" was chosen as the main theme of this activity. It is hoped that the results of research and development in the field of food technology will support efforts to achieve food security and public health, especially in this new normal era. We are currently still in the COVID-19 pandemic; and food is always be a basic need. So, it is always need an innovation and hard effort to meet the healthy food needs of the whole world. And hopes that it can be fulfilled through the use of food commodity in each area by development of processing, fermentation, and use of local source for functional food to improve the health and probiotic microbial to improve the gut health, with regard to food safety issues. That is why we have six main issues in this conference: Food Availability; Food Process and Product Development; Fermented Food; Functional Food; Food Safety; and Probiotic and Gut Health. How innovation must be carried out to produce products that can be enjoyed by all groups including the poor must be able to access them. On the other hand, the food produced must be able to respond to modern challenges as healthy food and not a trigger for various diseases. Food technology innovation allows the production of various food products that provide health benefits; besides that, it will expand the opportunities for opening up businesses in the food sector.

The aim of this conference is to provide forum for researcher and industries to disseminate their latest research innovation in food technology, health, and food security, create opportunities for researcher to discuss health and food security problems around the world as well as the strategy to manage such problems and also strengthen the collaboration between universities and industries by designing an event for researcher and industries to gather and discuss opportunities for collaborations.

The participants including invited speakers are coming from different countries such as United Kingdom, Japan, Thailand, Taiwan, Philippines, China, India, Bangladesh and Indonesia. There are total of 116 papers presented in both oral presentation (99 paper) and poster presentation (17 paper). The reviewed papers will be published in the Food Research and International Journal of Food, Nutrition and Public Health and also E3S Proceedings indexed by SCOPUS.

We would like to express our sincere gratitude to all of the invited speakers: Prof. Dr. Ir. Purwiyatno Haryadi, Prof. Emiko Yanase, Dr. Warapa Mahakarnchanakul, Prof. Wang Chin Kun, Margaretha Indah Epriliati, S.TP, M.Si., PhD, and Dr Ihab Tewfik. And also the invited speakers: Prof. Umi Purwandari, Prof. Budi Widianarko, Bertrand Muhoza, Ph.D., Dr. Francisco B. Elegado, Prof. Made Astawan, and Satoru Fukiya, Ph.D.

We would like to express our gratitude to The Indonesian Association of Food Technology (PATPI) Surabaya and Indonesian Society for Lactic Acid Bacteria and Gut Microbiota (ISLAB-GM) and for the assistance in preparation for this conference. We would also like to thank our sponsors that made this event possible. Last but not least, I would like to thank all members of organizing committee for their full supports and commitments in preparing this conference. I wish that all of us will have a fruitful discussion and a pleasant virtual meeting. Thank you.

Warm regards

**Dr. Anita Maya Sutedja, S.TP, M.Si., Ph.D.**  
**Chair person of IFC 2021 Organizing Committee**