

Program & Abstracts

International Conference 2016

Food Innovations : ASEAN Economic Community Challenges



Jakarta-Indonesia, 21st – 23rd September 2016



organized by :



SEAFAST
CENTER



Department of
Food Science
& Technology

in conjunction with :



Food ingredients
Asia



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Department of
Food Science
& Technology

International Conference
Food Innovation: AEC Challenges
September 21 - 22, 2016, Jakarta - Indonesia

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International Conference **FOOD INNOVATION: ASEAN ECONOMIC COMMUNITY CHALLENGES**

September 21 - 22, 2016
Jakarta International Expo, Kemayoran
Jakarta - Indonesia

Organized by:



Indonesian Association of Food Technologists



SEAFST
CENTER

Southeast Asian Food & Agricultural Science &
Technology (SEAFST) Center
Bogor Agricultural University



Department of Food Science & Technology
Bogor Agricultural University

In conjunction with:



Food Ingredients
Asia

INTRODUCTION TO THE SEMINAR

Greetings all honored guests.

Good morning! Assalamualaikum Wr Wb.

On behalf of the Organizing Committee, it is with great pleasure that we extend our warmest welcome to this International Conference discussing the topic of **Food Innovations: ASEAN Economic Community (AEC) Challenges**. This topic has been deliberately chosen to reflect the establishment of ASEAN Economic Community (AEC) on December 2015 as the realization of the region's end goal of economic integration. The biggest challenge facing countries engaged in food and agriculture related to AEC is about the competitiveness dealt with production, market shares, commodity, also product innovation. Ensuring that innovations of our food is fundamental thing to face the global economics today and contributes in many aspects and related issues. Food is not only related about the human's consumption, but also related with population, life style, health issues, economics or bussiness, etc. Solving immediate and emerging challenges of the future of our food innovation requires interdisciplinary and multidirectional approaches involving all sectors involved: corporates, governments, academics and the public.

We are currently at an exciting point in the development of the **Food Issues and Regulation, Innovations in Food Ingredients and Processing, Advances in Nutrition and Health, also Novel Approaches in Food Safety and Quality**. We observed those topics above become such relevant issue in answering demands from our consumer in the rapid developing economies to face the AEC challenges.

This biennial International Conference since 2010 will feature recent research developments, trade and business advances and all other food related issues and ideas, involving all parties in driving the global food production. It will provide opportunity to meet and share experiences as well as strengthen networking among international food scientists and scientists in related fields from academia, government and food industries. The conference is held as one of agendas from Indonesian Association of Food Technologists (IAFT/PATPI), the Department of Food Science and Technology Bogor Agricultural University (DFST-IPB) and Southeast Asian Food and Agricultural Science and Technology (SEAFAST) Center-LPPM IPB. This three-day-conference is held and linked to food Ingredients Asia 2016. The objective is to highlight significant developments in research and innovations in food science and technology with an emphasis on innovative ASEAN food research towards the world. Furthermore, this event involves our students,



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as the next generation of leaders, through innovative and challenging competitions such as *Food Product Development Competition (in ASEAN region)* for undergraduate students and *Graduate Students Research Paper Competition* for graduate students.

We sincerely hope that this International Conference may be beneficial to all participating attendees for the respective interests, work, business and field of expertise. We also hope that progress and development in this region and globally may have been contributed or even initiated by this gathering. We certainly wish you a good and enjoyable time during this conference.

Thank you.

Puspo Edi Giriwono

Chair of International Conference 2016



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CONFERENCE PROGRAM

DAY 1: Wednesday, September 21, 2016

08.00 - 09.00	Registration
09.00 - 10.00	Joint Opening Ceremony – Food Ingredients Asia Exhibition and Conference 2016
10.00 - 10.05	Report from the Committee
10.05 - 10.10	Remarks by the Head of Department of Food Science and Technology
10.10 - 10.30	Keynote Speech: Food Innovations: ASEAN Economic Community (AEC) Challenges <i>National Agency for Drugs and Food Control, Republic of Indonesia</i>
PLENARY 1: Food Issues & Regulation	
(Moderator: Prof. Dr. Hindit Pambayun – President of IAFI)	
10.30 - 11.00	ASEAN Economic Community (AEC) Challenges in Food Safety and Regulation <i>Prof. Dr. Dedi Fardiaz – International Consultant FAO/WHO and SEAFST Center IPB</i>
11.00 - 11.30	Food Issues : Developing Homemade-Like Processed Food <i>Dr. Pinggan Rao – IIFoST</i>
11.30 - 12.00	Indonesian Food Industry Preparation/Readiness <i>Ms. Susana – GAPMMI</i>
12.00 - 14.00	Lunch Break and Poster/Display Viewing, Exhibition Tour
PLENARY 2: Innovations in Food Ingredients & Processing	
(Moderator: Dr. Adli Basuki, Aliza – Chairman of IAFI Branch Bogor, Jakarta, Bekasi)	
14.00 - 14.30	Innovations in Food Ingredients & Processing <i>Dr. Chutima Waisarayurt – Faculty of Agro-Industry, Kasetsart University</i>
14.30 - 15.00	The Sago Palm Its Potentials, Problems and Prospect <i>Prof. Dr. F.G. Winarna – PT. Austindo Nusantara Jaya</i>
15.00 - 15.30	Natural Colors <i>Mr. Jude Wong – CHR Hansen Singapore Pte Ltd</i>
15.30 - 15.45	Afternoon Break and Posters/Display Viewing



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CONCURRENT SESSIONS				
15.45 - 17.15	Concurrent Session 1. Innovation in Food Ingredients	Concurrent Session 2. Innovations in Food Processing	Concurrent Session 3. Advances in Nutrition and Health	Concurrent Session 4. Novel Approaches in Food Safety and Quality
15.45 - 16.05	Usage of Corn Starch and Cassava Starch in Processing of Gluten Free Biscuit Made from Garaha Plantain (<i>Musa acuminate</i> sp.) Erny Nurail Sam Ratulangi University FI-01 Uncertain Color Stability of Polyacylated Anthocyanin Source Extracts at pH 7 Abdullah Muzil Marpaung Swiss German University FI-02	Bridging the Gap Between Batchwise Laboratory Scale and Industrial Full Scale Operation: Automated Small Scale Membrane Reactors Approach Azis Boing Sitanggang Bogor Agricultural University LS-FP1	Phytochemicals Intake of School Children in Bandar Lampung and Its Effect on Cholesterol Plasma Level Samsu Udayana Nurdin Research and Development Center for Nutrition, Health and Herbal LS-NH1	The Comparison of Antibacterial Activity Between <i>Lactobacillus casei</i> Subsp. <i>Casei</i> R-68 and Commercial <i>Lactobacillus casei</i> Against Food Borne Pathogens Umman Pato Riau University LS-FSQ1
16.05 - 16.15	Preliminary Study of Merang Ash Potential as Food Ingredient (The Effect of Ash Levels on the Dawet Gel Properties) Erni Sofia Murchi Brawijaya University FI-03	Modified Atmosphere Storage of Mango Using Ca(OH) ₂ as Absorbent Eka Basuki University of Mataram FP-01	Alpha-Glucosidase Inhibitor Activity of Bawang Dayak Bulb (<i>Elettaria palmifolia</i>) Andi Early Febrinda Samarinda State Agricultural Polytechnic NH-01	Antimicrobial Activity of Bacteriocin Produced by <i>L. plantarum</i> IIA-1A5 and <i>P. pentosaceus</i> Betty Sri Lalsmi Jenie Bogor Agricultural University FSQ-01
16.15 - 16.25	Stability of Pomegranate (<i>Punica granatum</i>) Anthocyanin and Colour During Storage Yana Cahyana Padjadjaran University FI-04	Physicochemical Properties of Edible Film Incorporated with Nutmeg Oil (<i>Myristica fragrans</i>) Nana Emulsians Yuliani Aisyah Syiah Kuala University FP-02	Characteristics and Glycemic Index Bread Substitute Pumpkin (<i>Cucurbita moschata</i>) Bernatal Saragih Mulawarman University NH-02	Microbiological Profile of Tape Produced by Home Industries in Bogor Lilis Nurulida Bogor Agricultural University FSQ-02

16.25 - 16.35	Development of Natural Green Colorant from Tili Leaf (<i>Cratogeomys oppositifolia</i> (Macleh) Rostk.) Dian Indrianti Bogor Agricultural University FI-05	Analysis of Oxidative Products on Strawmats During Drying Process Cecily M. Madopandus Sam Ratulangi University FP-03	Carbon Cationic Chroms Synthesis of Activity of Plant Secondary Metabolites Bogor Agricultural University NH-03	The Effect of Antimicrobial Concentration (Microbial species) Powder on the Chemical and Microbiological Properties of Tempeh Storage During Storage Rifka Nurfitri Jenderal Soedirman University FSQ-03
16.35 - 16.45	The Study of Physicochemical Properties of Whey Protein Concentrate Produced in Various Salt Concentration Abdi Andaya Padjadjaran University FI-06	Stabilization of Oil-in-Water Emulsion By Mixture of Modified Breadcrumb Crust (Glycerol Succinic Anhydride) Starch and Tween 80 Iris Maryani Anwar University of Syiah Kuala SP-04	Innovative Laboratory Activity of Snake Fruit Extracts (Snake Fruit) Cytotoxic Activity of Snake Fruit Extracts M. Nur Hafidha Gadjah Mada University NH-04	Sustainable Use of Sugar Vegetables as Traditional Market in Palembang City Ade Vera Yati Sriwijaya University FSQ-04
16.45 - 16.55	The Effects of Cornstarch and Gum Flour Binders on Quality of Tempeh Tortilla Snack Food Made from Soybean Tempeh Nur Anis Fathariha Bogor Agricultural University FI-07	The Substitution of Cocoa Powder and Skim Milk to Soy Powder in Chocolate Bar as Functional Food Zainah Hasanuddien University FP-05	Terapan Leaf (Plectranthus Amboinicus L. Spreng) Extract Inhibits Expression of Wound-Related Genes in Human Mammary Epithelial Cells Mey Sita Bogor Agricultural University NH-05	A Novel Technique in Modification of Formation Acrylamide by Enzyme of Soybean Wound (Cephaelis sappan. L.) Gisaf Rina Andalas University FSQ-05
16.55 - 17.05	Detection Threshold and Binary Interaction of Umami Taste Mixture Bogor Agricultural University FI-08	Design of Sorghum (Sorghum bicolor) Polishing Machine for Post Harvest Production Improvement Riana Litaeni Jenderal Soedirman University FP-06	Impact of Folic Acid Fortification on Rice Noodle Quality and Enhancement of Folic Acid Intakes Nura Malthayati Sriwijaya University NH-06	Generation Effect on Chemistry Characteristic and Reduction of Microorganisms of Sorghum (Averrhoa carambola) Imas S. Setiastih Padjadjaran University FSQ-06

17.05 - 17.15	Analysis of Market Channel of Traditional Salt Producer in Reimbang Regency: A Strategy to Enhance National Salt Supply Security Yusuf Hafidinda Trilogi University FIC23	Formulation of Nutring (Myristica fragrans H.) Effervescent Granules Rizka Almondagi Bogor Agricultural University FP-07	
17.15	Adjustment Day 1		
SPECIAL EVENTS			
13.00 - 17.00	FOOD PRODUCT DEVELOPMENT COMPETITION		
	Presentation (Final) Stage		
	13.00 - 13.05	Opening	
	13.05 - 13.40	Group I	
	13.40 - 14.15	Group II	
	14.15 - 14.50	Group III	
	14.50 - 15.25	Group IV	
	15.25 - 16.00	Group V	
	16.35 - 17.00	Evaluation and closing	
14.00 - 17.20	GRADUATE STUDENTS RESEARCH PAPER COMPETITION		
	14.00 - 14.10	Briefing for finalist	
		Opening	
	14.10 - 14.45	Presentation of Finalists 1	
	14.45 - 15.20	Presentation of Finalists 2	
	15.20 - 15.55	Presentation of Finalists 3	
	15.55 - 16.30	Presentation of Finalists 4	
	16.30 - 17.05	Presentation of Finalists 5	
	17.10 - 17.20	Closing	
15.30 - 18.00	IAET'S Annual MEETING (for invited member only)		
	15.30 - 15.40	Opening	
	15.40 - 16.00	Report from Centre Board	
	16.00 - 16.15	Feedback from Advisory Board	
	16.15 - 17.30	Report from Local Committee	
	17.30 - 18.00	Discussion and Closing	

DAY 2: Thursday, September 21, 2016

(Moderator: Prof. Dr. I Nyomai Semadi Antara – Chairman of IAFET Branch Denpasar)			
08.30 - 09.00	The Role of Milk in the Diet of Young Children in Asia-Pacific Dr. Jacques Bindele – Danone Nutricia Research		
09.00 - 09.30	The Challenge for Rice Analogues to be a Vehicle for Food Diversification and Rice Fortification Prof. Dr. Siemer Budjanto – Department Food Science and Technology (FST) & SEAFST Center (PSTM) IPB		
09.30 - 10.00	Indonesia Total Diet Study: Risk Assessment of Chemical Exposure dr. Soewanto, MPPH, DTM – Head of National Institute of Human Research and Development – Ministry of Health		
10.00 - 10.30	Morning Break and Poster/Display Viewing		
(Moderator: Prof. Dr. Wilhelms P. Rahayu – IAFET Vice President for External Affairs)			
10.30 - 11.00	Usage of safer Alternative Food Ingredients in Vietnamese Traditional Foods Luu Doan & Chao Nguyen – The Federation of the Institute of Food Science and Technology in ASEAN		
11.00 - 11.30	Urgency/Significance of Risk profiling Approach for AEC Keng Ngai TEOW – ILSI SEA		
11.30 - 12.00	Challenges of Mycotoxin Research/Safety Control in ASEAN Prof. Dr. Endang S. Rahayu – Gadjah Mada University		
12.00 - 12.30	Future Trend/Demand of Quality, Safety and Health Impacts of Organic Foods Dewantara Saebudin-Talber – Wipacow University of Life Sciences		
12.30 - 13.30	Lunch Break and Posters / Display Viewing		
CONCURRENT SESSIONS			
13.30 - 17.00	Concurrent Session 1: Innovation in Food Ingredients	Concurrent Session 2: Innovations in Food Processing	Concurrent Session 3: Advances in Nutrition and Health
			Concurrent Session 4: Novel Approaches in Food Safety and Quality

13.00 - 13.30	<p>Synthesis of Vitamin A Provitamin Archa Sam Wulansari Bogor Agricultural University 13-010</p> <p>Microviscosity Changes of Hydrolyzed Soy-Beans with Support Glycyrrhizic Septiandiana Kusumawati Bogor Agricultural University 13-012</p>	<p>Physical Protein Performance and Methods to Enhance Resistant Starch of Brown Rice Flour Auli Susanti Akbar Bogor Agricultural University 13-012</p>	<p>Application of Comprehensive Spectroscopic Methods to Identify Natural Microorganisms in Natural-Modulated Nonahe Olive Tissue Bogor Agricultural University 13-012</p>	<p>The Role of Calcium in Protein Stability Daniel A. Scaffaro AF Navin Chemsada Anugerah ISI-SQ1</p>
13.30 - 14.00	<p>Empirical Synthesis of Lactone-Substrates from Lactose and Galactose using Lactonase from <i>Phanerochaete chrysosporium</i> and Lactone Phosphorylase Wicaksono H. Riyas Bogor Agricultural University 13-012</p>	<p>Crystallization Kinetics of Coconut Oil Based on Components: Methyl Myristin Jambri University 13-018</p>	<p>Chemical Responsibility of Tissue Flour and Its Impact on the Stone of Rice Mada Alawati Bogor Agricultural University 13-017</p>	<p>Cultural Diversities (RICE) Profile for Agricultural State During Stability Forming Yessie Muli-Sinaga Bogor Agricultural University 13-017</p>
14.00 - 14.10	<p>Physical Character and Acceptance Evaluation of Low Sugar Muffins Formulated with Novel Glycoside and Polyketone Teguh Prasatia Iqda PT Nutrifood Indonesia 14-011</p>	<p>Ripening Quality of T-MC's Treated Kensington Pride Mango Following CA Storage M F Samud Sun Yat-sen University 14-019</p>	<p>Antioxidant and Antimicrobial Activity of Encapsulated Polyphenol-Rich Extract from Inferior Cocoa Bean Sony Susawono Jember University 14-018</p>	<p>Identification of Ureteric Microorganisms and Ureteric Sp. in Fish-Based Snack Sari Nurjanah Bogor Agricultural University 14-018</p>
14.10 - 14.20	<p>Short Chain Fatty Acid Produced by Lactic Acid and Fec of Bacteria Immobilization of Bamboo Shoot Powder Nyoman Samudl Airaud Uiloyana University 14-014</p>	<p>Valorization and Properties of Virgin Rich Oil Recovered from Tuna's Eyes Using Cold Crystallization Widi Hidayat Bogor Agricultural University 14-010</p>	<p>Chemical Composition, Functional Properties and Tripsin Inhibitor Activity of Soybean Whey Protein Recovered by Different Methods Diah Retawati Sun Yat-sen University 14-019</p>	<p>Analytical Method Validation for The Determination of 7-MCPD in Food by Gas Chromatography-Mass Spectrometry (GC-MS) Handani Nurayuni Lili Bogor Agricultural University 14-014</p>

FI-014

**Short Chain Fatty Acid Produced by Lactic Acid and Fecal Bacteria
Fermentation of Bamboo Shoot Powder**

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Abstract

Tabah bamboo (*Gigantochloa nigrociliata* BUSE-KURZ) that is one of the local varieties of bamboo produces shoot which commonly consumed as a source of nutrition. The study was conducted to determine the potential of *tabah* bamboo shoots as a source of dietary prebiotic. In this experiment the shoot was prepared as shoot powder in size of 60 mesh. The powder contained dietary fiber, oligosaccharide raffinose, and low amount of simple sugar glucose, fructose, and galactose. By *in vitro* test, the bamboo shoot powder could stimulate the growth of lactic acid bacteria (LAB) and produce short chain fatty acids (SCFA) by *Lb. casei* subsp. *rhamnosus* and fecal bacteria. Profiles of SCFA produced by single culture of *Lb. casei* subsp. *rhamnosus* and mix cultures of fecal bacteria fermentation of bamboo shoot were different significantly. Butyric acid and propionic acid were produced by single culture of LAB after 6 h and decrease in longer time of fermentation. By fecal bacteria, both acids were produced until 12 h fermentation. Production of SCFA during fermentation either by single culture of LAB or fecal bacteria supported prebiotic potential of the bamboo shoot powder.

Keywords: bamboo shoot, short chain fatty acid, lactic acid bacteria, fecal bacteria
