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PROGRAM AND BOOK OF ABSTRACTS

1st INTERNATIONAL CONFERENCE ON BIODIVERSITY, FOOD SECURITY AND HEALTH

22 - 23 November 2016
Universitas Gadjah Mada, Yogyakarta - Indonesia



Organized by :

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

In collaboration with :

Faculty of Agricultural Technology

Faculty of Agriculture

Faculty of Biology

Faculty of Animal Science

Faculty of Veterinary Medicine

Faculty of Forestry

Faculty of Medicine

Faculty of Pharmacy

Center for Biotechnology Studies

Department of Food & Agricultural Product Technology

Regional Centres of Expertise (RCE) Yogyakarta

The Indonesian Association of Food Technologists

In conjunction with :

10th Global Conference of Regional Centres of Expertise

Welcoming Speech from ICBFSH Committee

Our distinguished Rector Prof. Ir. Dwikorita Karnawati, M.Sc., Ph.D or her representative

Our distinguished speakers Bapak Dr. Bambang Dahono Adji, Prof. Gerard Bodeker, Dr. Unnikrishnan Payyappallimana, Dr Ir Rachmat Gunadi, M.Si., and all speakers from Universitas Gadjah Mada and to all distinguished participants

Good morning ...

Selamat pagi ...

Assalamu'alaikum warahmatullahi wabarakatuh

On behalf of the organizing committee, it is a great pleasure to extend to you all a very warm welcome to the 1st International Conference on Biodiversity, Food Security, and Health. The number of participants of this conference were approximately 120 participants coming from Indonesia, Malaysia, Vietnam, India, Nigeria, Philippines, Thailand, as well as other countries. This conference was organized by Center for Food and Nutrition Studies in collaboration with Faculty of Agricultural Technology, Faculty of Agriculture, Faculty of Biology, Faculty of Animal Science, Faculty of Veterinary Medicine, Faculty of Forestry, Faculty of Medicine, Faculty of Pharmacy, Center for Biotechnology Studies, Regional Centres of Expertise (RCE), and The Indonesian Association of Food Technologists. This conference was also in conjunction with the 10th Global Conference of Regional Centres of Expertise.

In this occasion, I would like to thank to the steering committee and organizing committee who had already give their effort to arrange this conference and also to our sponsor from Badan Penerbit dan Publikasi UGM and PT Tiga Pilar Sejahtera thank you for your kind support.

Hopefully this conference can further give more benefit to the academicians, researchers, institutions, and also community.

Thank you, I hope all of you can enjoy our beautiful city Yogyakarta, the city of cultural heritage.

Wassalamu'alaikum warahmatullahi wabarakatuh

Dr. Lily Arsanti Lestari

The Chairperson of OC

Welcoming Speech from Head of CFNS Universitas Gadjah Mada

- Honourable Rector Universitas Gadjah Mada – Prof Dr Dwikorita Karnawati
- The Honourable Director of Conservation of Natural Resources – Ministry of Environment and Forestry of RI – Dr Bambang Dahono Adji,
- Distinguished guest, Prof Dr Gerard Bodeker – Chairperson of Global Initiative for Traditional Systems of Health, Oxford University, UK (also as Adjunct Professor of Epidemiology, Columbia University, New York, USA),
- Distinguished guest, Dr Unnikrishnan Payyappallimana – Research Coordinator of the ESD Programme at the United Nations University – IAS.
- Honourable invited Speakers,
 - Prof Dr Murdijati G., Prof Dr Eni Harmayani, Prof Dr M Na'iem, Prof Dr Subagus Wahyuono, Dr Rachmad Gunadi.
- Deans of Faculty, and Heads of Centers of Studies - Universitas Gadjah Mada,
- All participants of the Conference from many countries, ladies and gentlemen.

First of all, may I take this opportunity to welcome you all, welcome to Universitas Gadjah Mada, welcome to Yogyakarta – a *City with comfortable and peaceful in heart*.

Today we are blessed with having an excellent occasion of Conference. The conference entitled *The 1st International Conference on Biodiversity, Food Security and Health* is organized by the Center for Food and Nutrition Studies in cooperation with the Faculty of Agricultural Technology, UGM, supported by faculties in agriculture cluster and health cluster in UGM, and it is held in conjunction with the *10th Global RCE Conference*.

The Honourable guests and participants,

As we know, today the biodiversity issue is being deeply highlighted by scientists. Biodiversity is variety and variability of life on Earth. The number and variety of plants, animals and other organisms that exist is known as biodiversity. It is an essential component of nature and it ensures the survival of human by providing food, medicines, fuel, shelter, and other resources to mankind. If the biodiversity is lost then our life is threatened. Biodiversity's relevance to human health is becoming a global issue, as scientific evidence builds on the global health implications of biodiversity loss.

The other global issue now gaining more attention is food security. Food security is an existence "*when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life*" (WFS, 1996). Food security is threatened by biodiversity loss, because the production and availability of food depend on plant, animal and other organism life.

Some of the health issues influenced by biodiversity include dietary, health, nutrition security, infectious disease, medical science and medicinal resource. Biodiversity provides critical support for drug discovery and the availability of medicinal resources.

Based on the importance of three keywords above, we are now preparing an opportunity to discuss the issues related with biodiversity, food security and health. The objectives are to

Program and Book of Abstracts

improve awareness of the importance of biodiversity related to many aspects, and to formulate a strategy to conserve biodiversity while improving food security and health.

The Conference is held in two days, the first day we have one keynote speech, and 5 invited speakers, in this Auditorium, and the second day we have 2 invited speakers and 101 research papers will be presented at UC Hotel UGM.

Dear distinguished guests and participants,

Before ending this address, again we would like express a sincere grateful to all speakers and participants. A special thanks go to BPP UGM (Agency for Printing & Publication UGM) for financial support, all sponsors, Prof Dr Eni Harmayani (Chair of Steering Committee), Dr Lily Arsanti (Chair of OC) and all committee members for their hard work and tireless effort to prepare this conference.

Finally, let me have this chance to request Prof Dr Dwikorita Karnawati – Rector UGM to officially opened this Conference.

We truly hope that all participants could take the most benefits from this occasion, and enjoy the Yogyakarta hospitality.

Thank you.

Prof. Dr. Umar Santoso
Head of Center for Food and Nutrition Studies,
UGM.

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Programme

Day 1 (November 22nd, 2016)
Grha Sabha Pramana (GSP) UGM

Time	Activity/Topic	Speaker
07.00 – 08.00	Registration	
08.00 – 08.15	Traditional Dance Performance	
08.15 – 09.00	Opening ceremony	
	- National Anthem	
	- Welcome Address from Head of Center for Food & Nutrition Studies (CFNS) UGM	Prof. Dr. Umar Santoso, M.Sc.
	- Opening Speech from Rector of UGM	Prof. Dwikorita Karnawati, M.Sc., Ph.D
09.00 – 09.30	Keynote speech from the Ministry of Environment and Forestry - Directorate General of Conservation of Natural Resources and Ecosystem.	Dr. Bambang Dahono Adji
09.30 – 10.00	Morning Coffee	
Session 1		
Moderator : Prof. Dr. Sri Raharjo		
10.00 – 10.30	Traditional Medicine & Medicinal Plant Biodiversity	Prof. Dr. Gerard Bodeker
10.30 – 11.00	Agrobiodiversity Concept, Its Relevance in Farmers Family Welfare (video presentation)	Prof. Dr. Murdijati Gardjito
11.00 – 11.30	Traditional Food to Support Biodiversity and Sustainable Food and Nutrition Security	Prof. Dr. Eni Harmayani, M.Sc.
11.30 – 12.00	Ethno-botany for health	Dr. Unnikrishnan Payyappallimana
12.00 – 13.00	Lunch break	
Session 2		
Moderator: Prof. Dr. Lilik Sutarso		
13.00 – 13.30	Rehabilitation of Degraded Forest to Support Food and Wood Security Program in Indonesia	Prof. Dr. Mohammad Na'iem
Technical Paper Presentation Session I		
Moderator : Dr. rer. silv. Muhammad Ali Imron, S.Hut, M.Sc.		
13.30 – 13.45	[OAA-01] River Corridor Cultural Ecosystem Services and Urban Well-being in George Town, Pulau Pinang and Kangar, Perlis	Asyirah, A.R. and Mohammad Izzami, M.N.
13.45 – 14.00	[OAA-02] Food Insecurity and Ramifications of Desertification in the Sahel: The Case with Nigeria	Usman Muhammad
14.00 – 14.15	[OAA-03] Screening wood-rot fungi for antimicrobial property	Tan T. Thai, Ngoc. V.K. Pham, Hoa T. Pham
14.15 – 14.30	[OAA-10] Conflicting or Combinative – Human and Natural Values at Kathotiya, Central India	Saurabh Popli

14.30 – 14.45	[OAA-20] Agressiveness of <i>Tabermontanae macrocarpa</i> upon Sustainability of Two Protected Communities of <i>Acacia auriculiformis</i> and <i>Pinus merkusii</i> at Mangunan Conservation Forest, Bantul Regency, Yogyakarta	Retno Peni Sancayaningsih, Anindiyasari Kumalasari, Abi Giusti Wohing Atie
Technical Paper Presentation Session II Moderator: Dr. Umi Purwandani		
14.45 – 15.00	[OAA-13] Negritos de Cebu : Gender, Livelihood, Resource Management and Social Change	N. Sabuero , R. Villaverde and H Zanoria
15.00 – 15.15	[OFS-03] Community Mobilization and Utilization of Information Technology in Scaling-up, Resource Management and Disaster Preparedness	Huberto C. Zanoria
15.15 – 15.30	[OTF-01] The Jackfruit Festival - Reviving Jackfruit based Food cultures to fight Climate Change and Assuring Food Security	Sachin Sathyarajan
15.30 – 15.45	[OAA-06] Exploring Diversity and Potency of Endophytic Actinobacteria from Medicinal Plants	Y. Lestari M. Rahmini, R. Heryanto, M. Ernawati, and W.P. Sari
15.45 – 16.00	<i>Adjournment</i>	

Day 2, November 23rd, 2016**UC Hotel - UGM Meeting Room**

Time	Activity/ Topic	Speaker/ PIC	Moderator
07.30 – 08.00	Registration	<i>Committee</i>	
08.15 – 08.30	Opening remarks		
08.30 – 09.00	Integrated Estate Plantation of Tea and Tubers to support Agro-biodiversity	Dr Rachmad Gunadi	Prof Ali Agus
09.00 – 09.30	Searching Bioactive Compounds From Indonesian Medicinal Plants	Prof Subagus Wahyuono	
09.30 – 10.00	Discussion		
10.00 – 10.15	Coffee Break		
10.15 – 12.00	Technical Session I		
12.00 – 13.00	Lunch break		
13.00 – 14.45	Technical Session II		
14.45 - 16.15	Technical Session III		
16.15 – 16.30	Closing	Prof. Dr. Suratman (Vice Rector for Research and Community Service)	

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Physicochemical and Functional Properties of Tubers Starches

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ABSTRACT

This research was aimed to determine the physicochemical and functional properties of Tubers starches and find out a suitable application in food products. Starch from tubers that analyzed were sweet cassava, bitter cassava, white sweet potato, red sweet potato, yellow sweet potato, purple sweet potato, taro, yellow potato, red potato and yam bean. The results of the physical analysis of Tubers starches were yield (6,90-17,57%), fineness (89,05-92,28%), whiteness (90,05-97,26), the shape of granules starch (oval, round, truncated and polygonal). The results of chemical analysis of Tubers starches were water content (6,36-8,70%), ash content (0,20- 0,48%), fat content (0,16-0,37%), protein content (0,14-0,16%), starch content (85,7-89,05 %), amylose content (13,28-20,30%), degree of acid (0,97-1,50 ml NaOH 1N/100g) and residual sulphite (31,44-45,61 ppm). The results of the functional properties analysis of tubers starches were water absorption capacity (0.870-1.231), oil absorption capacity (0,820-1,185), Freeze-Thaw Stability (18,85-47,45%), swelling power at 95°C (12,18-24,01 g/g), solubility at 95°C (8,40 to 23,10%), the beginning temperature of gelatinization (32.7-74°C), maximum viscosity (340-3884 BU), setback (30-810 BU) breakdown (70-2420 BU), the stability of pasta (-60- (-635) BU).

Keywords : Tubers starches, physicochemical properties, functional properties