REPORT: THE 5TH INTERNATIONAL CONFERENCE OF INDONESIAN SOCIETY FOR LACTIC ACID BACTERIA AND GUT MICROBIOTA (5TH IC-ISLAB-GM)

Introduction

Indonesia as a mega-diversity country has diverse microorganisms, including lactic acid bacteria. These bacteria which have varied physiological functions have been isolated and investigated associated with the benefit of human life. The utilizations of lactic acid bacteria expand into many areas of food, health, and industries. Lactic acid bacteria play many roles in traditional Indonesian fermented foods such as *tape, kecap,* and *asinan*. Many species and strains of lactic acid bacteria have been suggested to have many beneficial effects on the health of the digestive tract of humans. Many strains of lactic acid bacteria have been applied into probiotic products. Administration of specific strains of lactobacilli and/or *bifidobacteria* was found to be effective in the treatment/prevention of rotavirus antibiotic-associated, and pathogenic diarrhea. The ability of specific probiotics to enhance immune function in infant has also been reported.

Research has been carried related to the development of science and technology in microbiological area. Lactic acid bacteria could be explored for novel function, particularly to support the health benefit for human being and other life. To support the preservation of potential microorganisms, culture collection should be managed in a good management system. Therefore. it is necessary to disseminate these research findings and experiences as well as how to manage culture collection among researcher, pediatrician, students, industries, and other stakeholders.

Objective

The objectives of this conference are to disseminate the research achievement among the researchers, to explore novel functions of lactic acid bacteria, and to strengthen the network among the international and national researchers as well as industrial partner.

The 5th International Conference of Indonesian Society for Lactic Acid Bacteria-Gut Microbia
November 13-14th, 2015
Auditorium Kamarjani-Soenjoto, Faculty of Agricultural Technology
Universitas Gadjah Mada, Yogyakarta Indonesia

1st day (13 November 2015)	
07.00-07.45	Registration, welcome drink and breakfast
07.45-08.00	Welcome dance
08.00-08.30	Opening ceremony
	Preface 1. Chairperson of Organizing Comitee 2. Chairperson of Indonesian Society for Lactic Acid Bacteria
	Plenary Lectures I Moderator : Endang S. Rahayu and I Nengah Sujaya
08.30-09.10	Dennis Nielsen (Kobenhavns Universitet, Denmark) "The Role of Gut Microbia in Health and Disease"
09.10-09.40	M. Juffrie (Universitas Gadjah Mada) "The Effect of Probiotic, Prebiotic on Mucosal Immune Response and Stunting"
09.40-10.15	Jiro Nakayama (Kyushu University) "Asian Microbiome Project toward Phase III: Investigation on The Link between Diet and Gut Microbiota"
10.15-10.55	Seppo Salminen (University of Turku, Finland) "Probiotics and Microbiota Programming: What Is Known on Probiotic Effects?"
10.55-11.25	Koichi Watanabe (National Taiwan Unversity, Taiwan) "Enumeration of Viable Cells is a Required Procedure to Assess Beneficial Effects of Probiotics"
11.25-11.40	Yakult Presentation
11.40-11.50	Photo Session
11.50-14.00	Break Poster Session and Lunch
14.00-16.10	Parallel Session

	Room A : Technical Session	Room B: Technical Session

	Plenary Lectures II Moderator : Yantyati Widyastuti and Nanik Suhartatik
16.10-16.30	Puspita Lisdiyanti (LIPI, Indonesia)
16.30-17.00	Julie D. Tan (Visayas State University, Philippines) “ Recent Studies on the Association of Lactic Acid Bacteria in Fermentd Foods in the Philippines “
17.00-17.20	Tyas Utami (Universitas Gadjah Mada) “ Effects of Consumption of Probiotics Drinks Towards Gut Enterobacteriaceae “
17.20-17.40	Ken Ichiro Suzuki (NBRC, Japan) “ The Role of Culture Collections in The CBD Era “
17.40-18.00	Agus Wijaya (Univeritas Sriwijaya, Indonesia) “ Is *Lactobacillus* The Dominant Genus of Lactic Acid Bacteria in Indonesian Indigenous Fermented Foods? “
18.00-19.00	Break and Dinner
19.00-20.00	Cultural Night
20.00-21.00	The 1st ISLAB Congress
2nd Day (November 14th, 2015)	
08.00-till drop	Excursion (Borobudur Tour)

TECHNICAL SESSION PROGRAMME

Time	Note	Speaker	Title
Room A Moderator : Siswa Setyabudi			
14.00-14.16	A1	I Nengah Sujaya	Resistance of *Lactobacillus* sp F213 in Human Gastrointestinal Tract and Its Health Promoting Effects
14.16-14. 29	A2	Afriza Yelnetty	Characteristics and Sensory Quality of Goat Milk Yogurt Using Sucrose Wit Different

			Levels and Starch from Red Kidney Bean (*Phaseolus vulgaris, cv*) as Prebiotics Source

14.29.14.42	A3	Ahmad Nimatullah Al-Baarri	Lactic Acid Recovery by Fortification of Mangoes Fruit Extract Into Manufacture of Yogurt Drink and The Profile of Dried Yogurt During Storage
14.42-14.55	A4	Amelia Juwana	Probiotic and Antimicrobial Potential of Lactic Acid Bacteria Which Screened *mandai* (Fermented *Dami* of *Cempedak* (*Artocarpus champeden Spreng*))
14.55-15.08	A5	Hasyrul Hamzah	Isolation and Characterization of Lactic Acid Bacteria as Probiotics in Dangke and Tape
15.08-15.21	A6	Hazel Alena Diamante Tan	Efficacy of Alginate-Taro (*Colocasia esculenta* (L.) Schott) Starch Encapsulation of Starter Culture for Yoghurt Processing
15.21-15.34	A7	Iskandar Azmy	The Development of Indigenous Strain on Fermented Milk Product: A New Strain Combination
15.34-15.47	A8	Shinta Maharani	Effects of Temperature and Inoculum Concentration on Chemical and Microbiological Changes of Black Soybean Milk Yogurt
15.47.16.00	A9	Widodo	The Quality of Fermented Milk Produced Using Human-Prigin Lactic Acid Bacteria as Starters
Room B Moderator : Achmad Dinoto and Lindayani			

14.10-14.25	B1	Achmad Dinoto	The Chicken Gut Microbiota : Lesson Learned from SATREPS Project
14.25-14.37	B2	Satriya Arbian	Isolation of Human OriginMethyl Mercury Resistant LAB from Sekotong, West Lombok, Indonesia

14.37-14.49	B3	Lindayani	Combination between Salt Concentration and Fermentation Temperature on probiotic Capability and Antimicrobial Activity of Lactic Acid Bacteria from Isolation of Yellow Betung Bamboo Shoot Pickle
14.49-15.00	B4	Lorentia Santoso	*In Vitro* Detection of Bacteriocin Inhibitory Activity of *Lactobacillus* sp. Isolated from *Betung* Bamboo Shoot (*Dendrocalamus asper*) Pickles Under Different Fermentation Conditions and Medium Compositions
15.00-15.09	B5	Muthia Cita Hapsari	Adhesiveness and Microstructure of Rehydrated Avocado-Fortified Yogurt
15.09-15.19	B6	Nanik Suhartatik	Biodegradation of Anthocyanin Using Beta Glukosidase from *Pediacoccus pentosaceus* N11.16
15.19-15.30	B7	Rio Jati Kusuma	A Novel Class Nutrient, MicroRNA, Content in Dairy Food Products

15.30-15.41	B8	Tri Ardiyati, Mafruhatun Ni'mah	Diversity of Lactic Acid Bacteria and Nutrition Content of "Yoguku" During Storage
15.41-15.50	B9	Yenaly Wuena Pinaria	Exopolysaccharide Producing Lactic Acid Bacteria Isolated from Palm Sap (*Arenga pinnata*)

LIST OF POSTER

POSTER PRESENTER			
1	Agus M. Afidin, Rahmaniar Mulyani and Iis Herawati	Effect Addition of Noni Fruit Extract (*Morinda citrifolia*) on The Growth of *Lactobacillus acidophilus* as Synbiotic to Inhibit Growth of *Salmonella typhi*	PP-1
2	Agustine Susilowati, Hakiki Melanie and Aspiyanto	Recovery of Fermented Inulin Fiber by Lactic Acid Bacteria (LAB) from Inulin Hydrolysate Using Inulinase Enzymes of *Scopulariopsis s*p.-CBS 1 and *Deuteromycetes s*p.-CBS4 as Cholesterol Binder	PP-2
3	Agustine Susilowati and Aspiyanto	Drying Process of Fermented Inulin Fiber Concentrate by *Bifidobacterium bifidum* as A Result of Concentration Process Using Ultrafiltration System as Dietary Fiber Source for Cholesterol Binder Instant Drink	PP-3
4	Andri Frediansyah and Panida Navasumrit	Protective Effect of Milk Fermented by *Lactobacillus acidophilus* Against AFB_1 Exposed-Human Hepatoma Cells	PP-4
5	Anies Chamidah, Y. Marsono and Eni Harmayani	Prebiotics Activity of Laminaran	PP-5
6	Antonia Nani Cahyanti	The Characteristics of Yogurt with Different Commercial Starter Cultures	PP-6
7	Armita Athennia, Tyas Utami, Y. Marsono, Endang S. Rahayu	Safety Assesment of Probiotic Candidate: The Effect of High Doses of *Lactobacillus plantarum* Dad13 to Rats Performance (Using Sprague Dawley Rats)	PP-7

8	Aspiyanto and Agustine Susilowati	Potential Use of Stirred Microfiltration Cell (SMFC) Mode in Separating Fermented Inulin Fiber by *Lactobacillus acidophilus* for Cholesterol Binder	PP-8
9	Aspiyanto, Agustine Susilowati, Puspa D. Lotulung and Hakiki Melanie	Characteristic of Fermented Bayam (*Amaranthus s*p.) Polyphenol by *Kambucha* Culture as Antioxidant Compound as A Result of Stirred Microfiltration Cell (SMFC)	PP-9
10	Asri Nursiwi, Ardhea Mustika Sari, Aditya Indra Pratama	Characteristics of Sweet Corn (*Zea mays L. saccharata*) and Purple Sweet Potato(*Ipomea batatas*) Frozen Yogurt Added with Stabilizer	PP-10
11	Baiq Rani Wulandari, Yustinus Marsono, Tyas Utami, Endang S. Rahayu	Potential of Yogurt as Angiotensin Converting Enzyme Inhibitor with Addition of *Ficus glomerata*	PP-11
12	Devita Ariesti, Tyas Utami, Endang S. Rahayu	The Potential of Lactic Acid Bacteria Isolated from *Dadih* as Antibacterial	PP-12
13	Edhi Nurhartadi, Asri Nursiwi, Erina Widayani	Effect of Incubation Time and Sucrose Concentration on Probiotic Drink Characteristics from Whey A Cheese By-Product	PP-13
14	Eka Rahayu, Nikmatul Hidayah, dan Resa Setia Adiandri	Profile of Sorghum Flour Modified Using *Lactobacillus brevis*	PP-14
15	Fatimah, Tyas Utami, Endang S. Rahayu	Isolation and Identification of Lactic Acid Bacteria from Fermentation Products and Its Potency as Antibacterial Agent	PP-15

16	Hakiki Melanie and Agustine Susilowati	Fermented Inulin Hydrolysate by *Bifidobacterium breve* as Cholesterol Binder in Functional Food Application	PP-16
17	Ilzamha Hadijah Rusdan, Armita Athennia, Jaka Widada, Endang S. Rahayu	Safety Assessment of Probiotic Candicate: Study of Bacteria Translocation on *Sprague Dawley* Rat's Organs and Blood Consuming *Lactobacillus plantarum* Dad 13 in High Dose	PP-17
18	Isti Handayani, Tyas Utami, Chusnul Hidayat, Endang S. Rahayu	Screening of Uricase Producing Lactic Acid Bacteria and Evaluation of The Enzyme Stability in Gastrointestinal System	PP-18
19	Katharina Ardanareswari, Endang S. Rahayu and Tyas Utami	Effect of Heat Adaptation and pH Adjustment Pretreatments on Survival of *Lactobacillus paracasei* ssp. *paracasei* SNP2 in Spray-Drying	PP-19
20	Komang Ayu Nocianitri, Nyoman Semadi Antara, I Made Sugitha, I Dewa Made Sukrama, I Nengah Sujaya, Yan Ramona	Resistance of Two *Lactobacillus rhamnosus* in Gastrointestinal Tract of Rats Determined Using Species Specific Primers	PP-20
21	Merlizza Roosynda, Tyas Utami and M. Nur Cahyanto	Effects of Sucrose Concentration on The Viability of *Lactobacillus plantarum Dad 13* during Freezing, Freeze-Drying and Storage	PP-21
22	Muhamad Amin, Olumide A. Odeyemi, Fera Roswita Dewi, Chris Bolch and Chris Burke	Screening for Anti-*Listeria* Activity of Lactic Acid Bacteria Isolated from Seabream, *Sparusaurata*	PP-22
23	Nazarni Rahmi, Eni Harmayani,	Lactic Acid Bacteria on Fermented Tigarun Flower (*Crateva nurvala*	PP-23

	Umar Santoso, Purnama Darmadji	Buch. Ham) and Its Influence on Antibacterial and Antioxidant Activity	

24	Nenny Harijani	The Effect of Bacteriocin from Lactic Acid Bacteria Against from Lactic Acid Bacteria Against *Streptococccus agalactiae* Because of Dairy Cattle Sub Clinic Mastitis	PP-24
25	Ni Nyoman Puspawati and Ni Made Indri Hapsari Arihantana	Viability of Lactic Acid Bacteria from Kombucha Tea Against Low pH and Bile Salt	PP-25
26	Ni Wayan Nursini and I. B. A. Yogeswara	Resistance Test on Low pH and Deoxycholate Acid of Lactic Acid Bacteria Isolated from Goat Milk to Developed A Local Probiotic Candidate	PP-26
27	Niko Listiyo, Kapti Rahayu Kuswanto, Nanik Suhartatik	Isolation and Identification of Halophilic Lactic Acid Bacteria Produce Proteolytic Enzyme in Catfish Sauce (*Clarias* species) Processing	PP-27
28	Nurhayati, Nurud Diniyah, Astriani	Morphological and Physiological Identification of Lactic Acid Bacteria Isolated from Submerged Fermentation of Fermented Cassava (*Gatot*)	PP-28
29	Nurwulan Purnasari, Betty Sri Laksmi Jenie, Lilis Nuraida	Survival, Heat Resistance and Antimicrobial Activity of *Lactobacillus* Strains Microencapsulated by Emulsion Method	PP-29
30	Prima Retno Wikandari, Amrul Wahyu Hermawan, Mar'atul Huda	Potency of *Lactobacillus plantarum* B1765 as The Starter Culture of Soyghurt Fermentation	PP-30

31	Puji Rahmawati Nurcahyani, Shinta Maharani and Susi Susanti	The Effect of Agitation in Mung Bean Cheese Production	PP-31

32	Raka Ahsanul Huda, Tyas Utami, and M. Nur Cahyanto	Milk Fermentation Using Freeze Dried Culture *Lactobacillus plantarum* Dad 13	PP-32
33	Nikmatul Hidayah and Resa Setia Adiandri	Effect of Fermentation with *Lactobacillus casei* on the Physicochemical, Functional, Organoleptic and Microstructure Properties of Sorghum Flour	PP-33
34	Siti Helmyati, Mohammad Juffrie, Endang S. Rahayu, Bernadette Josephine Istiti Kandarina	The Effectiveness of Synbiotic Fermented Milk Addition on Iron Supplementation in Iron Deficiency Children towards Gut Microbiota Balance	PP-34
35	Siti Nur Purwandhani, Tyas Utami, Ria Milati, and Endang S. Rahayu	Phenotypic and Molecular Identification of Folate-Producing Lactic Acid Bacteria	PP-35
36	Ulyatu Fitrotin, Umar Santoso, Pudji Hastuti, Tyas Utami	Degradation of Sesaminol Triglucoside in Sesame Milk Fermentation by β-glucosidase Producing *Lactobacillus plantarum* Dad 13	PP-36
37	Veronica Clarizza, Tyas Utami and M. Nur Cahyanto	The Effect of Skim Milk Concentration as Cryoprotectant on Viability of *Lactobacillus plantarum* Dad 13 During Freezing, Freeze-Drying and Storage	PP-37
38	Wahyu Dwi Saputra, Tyas	Effect of Combination Skim and Sucrose Cryoprotectant on Viability	PP-38

	Utami and M. Nur Cahyanto	of Freeze Dried *Lactobacillus plantarum* Dad 13	
39	Anis Dwi Ramadhani, M. Nur Cahyanto, Tyas Utami	Halal Medium Development of Whey Based Material for *Lactobacillus plantarum* Dad13 Growth	PP-39

40	Kurniawan Eka Saputra, Tyas Utami, Endang S. Rahayu	Isolation, Selection and Characterization of Lactic Acid Bacteria Producing Antibacterial Compound from Salted Egg	PP-40
41	Ika Fitriani, Dyah Fitri Kusharyati, dan P. Maria Hendrati	The Effect of Length Incubation Soygurt Added by *Bifidobacterium* sp. to *Bacillus cereus* Inhibition	PP-41
42	Sri Hastuti, Tyas Utami, Jaka Widada, Endang S. Rahayu	Recovery and Molecular Detection of *Lactobacillus plantarum* Dad13 from The Intestine of Healty Indonesian Volunteers after Intake of Fermented Milk	PP-42

First day Conference Friday, November 13th 2015

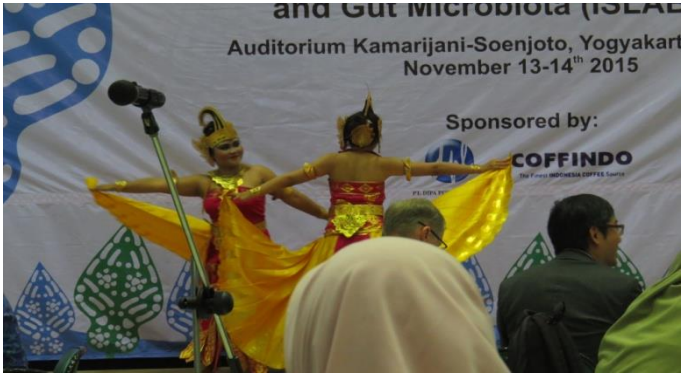
MC : Ryan Haryo Setyawan
Nalaputi Basoeki

Greeting : Chairperson of Organizing Committee, Tyas Utami
Chairperson of Indonesian Society for Lactic Acid Bacteria, Endang S. Rahayu

Opening : Cendrawasih Dance

Tyas Utami

Endang S. Rahayu



Cendrawasih Dance

PLENARY LECTURE I

Moderator : Endang S. Rahayu and I Nengah Sujaya
Speakers :

1. **Dennis Nielsen (08.30 – 09.10)**
   The role of gut microbiota in health and disease

   Synopsis :

   The human gastro-intestinal (GI) tract is inhabited by a complex and dynamic consortium of trillions of microorganisms. During recent years it has become well established, that diseases like obesity and diabetes are interrelated to imbalances in gut microbiota (GM) composition. This has led to an increasing scientific, societal and commercial interest in understanding how a healthy GM can be maintained and possibly guided in a desired direction through external stimuli.

   Many ways to manipulate gut microbiota composition are diet, antibiotics (oral vs. Systemic), germ free conditions followed by inoculation (gnotobiotic animals), birth-mode and early exposure. Gut microbial markers are associated with diabetes onset, regulatory imbalance, and IFN-ɣ level in NOD mice. Children who had developed obesity at the age of 7 had significantly lower levels of bifidobacteria and higher levels of *Staphylococcus aureus* in faecal samples obtained at the age of 6 and 12 months compared to lean controls. Single strain probiotics do not influence gut microbiota composition (to any larger extent). But they might have an effect anyway.

   Discussion:

   No discussion.

2. **M. Juffrie (09.10 – 09.40)**
   The Effect of Probiotic, Prebiotic, on Mucosal Immune Response and Stunting

   Synopsis :

   Probiotic and prebiotic are famous with name synbiotic have been recognized have multiple benefit. Probiotics is directly active to end us some cell like phagositosis cell. Prebiotics is carbohydrate or polysaccharide to adaptive immune response. In Yogyakarta there are many kind local food that proofed has effect to healthy status. In the two studies below author present the remarkable results using a local food

that almost every time as a daily food. *Lactobacillus plantarum* Mut7 FNCC 250 from gatot (fermented traditional food from cassava) have those healthy benefits such as resistance low pH in billed and stand as an antagonist to pathogen. *Lactobacillus plantarum* DAD 13 has same effect as well. *Lactobacillus plantarum* DAD 13 and FOS enhance the absorption of Calsium then that induce borne line growth

There some results of the effect of *L. plantarum* Mut7, sweet potato flour rich in fiber and combined both of the microbiota digesta profile. First, the activation of phagositosis, production NO (Nitrite Oxide), immune response, potential induce allergen, B-cell, in 5 weeks increased significantly. Second, bifidobacterium population in digesta and E. coli in 5 weeks decreased significantly.

Discussion :

No discussion.

3. Jiro Nakayama (09.40 – 10.15)

Asian Microbiome Project toward Phase III: Investigation on the link between diet and gut microbiota

Synopsis :

Japanese and Indonesian have opposite type of gut microbiota. He would like to remind ours a little bit about human gi-tract microbiota. The number of bacteria is increasing from upper to lower digestive tract and finally reaches 10 powered by 11 to 12 in the colon. In total, we have a hundred trillion bacteria in intestine which corresponds to 1 kilogram of biomass. And so far, a thousands species of bacteria are listed up as a member of human gut microbes.

Their functions are also diversified. As for beneficial aspect, some gut bacteria provide us good nutritional effect by producing vitamin, digestive enzyme. And also some bacteria activate or regulate our immune system. However, if the balance of gut microbiota is something wrong, the status so-called "dysbiosis", some bacteria cause infection and some cause inflammation, and if inflammation is chronic, it cause immune disorder, insulin resistance, barrier defect, lipidemia, and finally leads to inflammatory bowel disease, obesity, diabetes, hyper-cholesterol.

Their non beneficial metabolites should be careful. Amines, reactive oxigens, hydrogen sulfate, secondary bile acid could accumulate in intestine and eventually cause cancer or some other diseases. And recent studies have revealed that gi tract microbiota have a significant

role in gut brain axis, and of course, well-balanced gi tract microbiota are involved in regularity of defecation.

Asian Microbiome Project: phase 1 focusing on the gut microbiota of children. This age children are colonized by adult type stable gut microbiota which should be well-established under the intake of country foods. Their gut microbiota were profiled by meta 16S rRNA sequencing. Phase II study covering whole ages of Asian people

The result of phase 1 study showing species-level gut bacterial composition of 303 children from ten cities of five countries, in which yellowish color represents high abundance and blueish color represents low abundance. Phascolarctobacterium faecium is specifically abundant in Chinese and Taiwanees Dialister invisus are common in Japanese children but very seldom in the other countries.

PCA and clustering of fecal microbiota of 303 Asian children (at family level):

- Several strong loading bacteria group were obtained, especially Prevotella for the positive in PC1, and *Bacteroides, Bifidobacterium*, and *Lachnospiraceae*, *Ruminococcaceae* for the negative in PC1, and in PC2, bifido positive and lachno, and rumino are negative. And in this PCA, we did cluster analysis, and two obvious clusters are obtained, and we define this cluster is Prevotella-type, the so-called P-enterotype, and the other one is *Bifidobacterium-and-Bacteroides* type called BB-enterotype (children in China, Japan, Taiwan are classified in BB-type and children living in Indonesia and Khon Kean in Thaildand are classified in P-type).

  Children in the P-type country strongly depend on rice for the carbohydrate source, while children in BB-type countries less depend on rice. But not only the difference in the frequency, cultivar of rice whose resistant starch content differs much between also strongly correlates with enterotypes. The impact of high resistant start diet was seen in a shotgun metagenomics sequencing data, overrepresentation amylase and pectinase in P-enterotype, suggesting the presence of dietary fibers in P-enterotype intestine.

Discussion :

No discussion.

Dennis Nielsen

M. Juffrie

Jiro Nakayama

4. **Seppo Salminen (10.15—10.55)**
Probiotics and microbiota programming: what is known on probiotic effects ?

Synopsis :

Pregnancy and early infancy comprise the most critical stage for microbiota programming for later health. The key elements here include the mother's genetic background, environment and nutritional state as well as microbiome in the mother's gut and mucosal surfaces. Breast milk is the first recommended food for humans. Breastfeeding reported to be protective of Diarrheal disease, allergic diseases, and obesity development. Following delivery, human milk contains microbes, which can be mimicked by specific probiotics (Cabrera - Rubio, et al. 2012).

Evidence-based recommendations demonstrate the benefits of specific strains of probiotics on infant health, including treatment and risk reduction of acute gastroenteritis and antibiotic associated disturbances. Several other areas appear promising for future applications. However, it is important to focus on probiotic strains, which have been proven effective. As each strain is different, results in infant studies cannot be extrapolated even to closely related strains.

Probiotic effects have been attributed to restoration to normal of increased intestinal permeability, improvement of the intestinal barrier functions, alleviation of the intestinal inflammation, and reduced generation of pro-inflammatory cytokines. Recent evidence from experimental and clinical studies indicates modifying gut microbiota is also associated with the control of body weight and energy metabolism and specific probiotics may assist in creating such control. Specific probiotics may also directly influence energy

extraction from different dietary components and energy storage in the human body. Both functions can contribute to insulin resistance and the inflammatory state characterizing obesity.

Discussion :

No discussion.

5. **Koichi Watanabe (10.55 – 11.25)**

Enumeration of Viable Cells is a Required Procedure to Assess Beneficial Effects of Probiotics

Synopsis :

Probiotics are live microorganisms which, when administered in adequate amounts, confer a health benefit on the host. It is critical to enumerate accurately the population of viable probiotics not only in the preparation but also in our gut. In response to the stresses of processing and formulation, some fraction of the live probiotic cells may enter a viable but non-culturable state (VBNC) in which they are dormant but metabolically active, or dead.

Probiotic has different effects depend on origin (genetics, diet, microbial health, colonization process, compliance) and strain specific features (strain, performance). To evaluate their probiotic effects, it is the essential to establish the strain-specific methods for identification and quantification of the probiotic strains. There are various enumeration techniques to access viability of probiotic strains

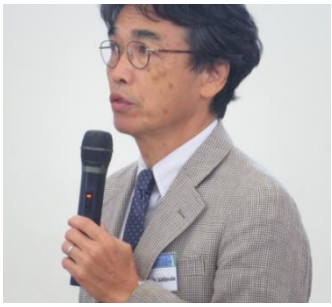
a. Replication bacterial cell using culture method
b. Metabolic Activity using flow cytometry
c. Presence of Nucleic Acids using RT-PCR
d. Cellular Integrity using Flow cytometry, FISH, v-PCR

They have developed the strain-specific selective media based on the combination of their nutritional requirements and antibiotics susceptibilities. The strain-specific PMA-qPCR can separately enumerate probiotics' cells into two state, "viable" and "dead" which may have some probiotic effects. The strain-specific PMA-qPCR helps us to understand about the probiotics deeply and to verify the impact of probiotics for our health.

Discussion :

No discussion.

Seppo Salminen



Koichi Watanabe

Seminar and discussions

TECHNICAL SESSION (ROOM A)

Moderator : Siswa Setyahadi
Speaker :

1. **I Nengah Sujaya (14.00-14.16)**
   Resistance of Lactobacillus sp F213 in human gastrointestinal tract and its health promoting effects

   Synopsis :

   Non communicable diseases (NCD) is associated with unhealthy life style. Probiotic offers opportunities in managing NCD. This research was aimed to determine the resistance of *Lactobacillus* sp F213 (LbF213) in human gastrointestinal tractand its health promoting effects. In this research, fecal and blood samples were collected before,

during, and after 28 days administration. The results showed that administration for 4 weeks increased LAB population. *Lactobacillus sp* F213 was detected in fecal samples demonstrated that *Lactobacillus sp* F213 survived in the human GI and play role in modulation of human intestinal microbiota

Discussion :

i. Question : What do the control diet in this study?
   Answer : No, just monitoring from food recall

2. Afriza Yelnetty (14.16-14.29)

Characteristics and sensory quality of goat milk yogurt using sucrose with different levels and starch from red kidney bean as prebiotic

Synopsis :

This research aimed to determine the effect of different levels of sucroe against chemical, microbiological, and sensory characteristicof goat's milk yogurt tat used starch from Red Kidney beans as a source of prebiotics. Lactic acid bacteria used are S*treptococcus thermophillus*, Lactobacillus bulgaricus, and Lactobacillus acidophillus as probiotic bacteria. At sucrose level of 0, 2, 4, 6, and 8% there is no significant defference on the results of analysis on ash, protein, and fat content but significant difference on LAB, pH, water content, crude fiber, and sugar reduction. The most preferred sensory test is goat's milk yogurt with 6% sucrose.

Discussion :

No discussion.

3. Ahmad Ni'matullah Al Baari (14.29-14.42)

Lactic Acid Recovery by Fortification of Mangoes Fruit Extract into Manufacture of Yogurt Drink and The Profile of Drink Yogurt during Storage

Synopsis :

Drying process for yogurt exhibited the reduction on the population of lactic acid bacteria. This research aimed at the utilization of mangoes fruit extract in order to prevent the reduction of lactic acid bacteria population in dried yogurt. Manggo fruit extract can exhibited the reduction of Lactic Acid Bacteria production. Population of lactic acid bacteria in mangoes-fortified yogurt (MF-Yo) and non-mangoes-

fortified yogurt (NMF-Yo) were counted using total plate count. The final product was also tested at Lab color testing instrument using digital color meter software by Macintosh® to measure L* value. The results indicated that the number of total lactic acid bacteria in mangoes-fortified yogurt (MF-Yo) and non-mangoes-fortified yogurt (NMF-Yo) were 3.89±0.28 and 3.19±0.62 log CFU/ml, respectively, indicating the hindrance of lactic acid bacteria's depletion by mangoes extract after drying process.

Discussion :

No discussion.

4. **Amelia Juwana (14.42-14.55)**

Probiotic and Antimicrobial Potential of Lactic Acid Bacteria Isolated From Mandai (Fermented Dami of Cempedak (Artocarpus Champeden Spreng)

Synopsis :

LAB is the most beneficial microorganism due to their probiotic potential. In Indonesia fermented traditional foods such as tempoyak, bekasam and sayur asin has found to be the habitat of LAB. LAB isolated from Mandai resulted 41 isolates as Lactobacillus genera that were able to survive under low pH and 17 from 41 isolates were able to survive under bile condition. The aim of this study was to evaluate probiotic and antimicrobe potential of lactic acid bacteria (LAB) isolated from *mandai*. Antimicrobial analysis show that 15 isolates were able to produce antimicrobial substance against three pathogenic bacteria.

Discussion :

No discussion.

5. **Hasyrul Hamzah (14.55-15.08)**

Isolation and Characterization of Lactic Acid Bacteria as Probiotics in Dangke and Tape

Synopsis :

A research on isolation and characterization of lactic acid bacteria as probiotic in *Dangke* and *Tape* has been conducted with the aim to obtain and characterize lactic acid bacteria isolated from fermented foods of *Tape* and *Dangk*e (processed product from glutinous rice and cow or buffalo's milk fermentation, respectively). All isolates are Gram

positive bacteria with rod-shaped, able to grow in the medium with pH of 2.5, and three of them were able to grow in the medium containing synthetic bile salt of 1% and 5%. During the fermentation, gelatin test showed a positive result, while on the citrate and H_2S test, all isolates were found negative. The research results can be concluded that all isolates showed characteristics of lactic acid bacteria.

Discussion :

No discussion.

6. Hazel Alena Diamante Tan (15.08-15.21)

Efficacy of Alginate-Taro (Colocasia esculenta (L.) schott) Starch Encapsulation of Starter Culture for Yogurt Processing

Synopsis :

The study determined the viability of the lactic acid bacteria, *L. bulgaricus,* and *S. thermophilus*, in yogurt which were encapsulated in different levels of alginate-taro starch matrix. The physico-chemical properties of the reconstituted skim milk medium and the sensory qualities of resulting yogurt were also determined. The developed alginate-taro starch encapsulated, non-encapsulated and pure alginate encapsulated starter cultures were compared in terms of their activity in yogurt processing. The highest percentage of taro starch (1.5%) was found to retain a high viable cell count of 3.4×10^{10} colony forming unit (CFU/ml) after 12-day storage at 4°C. No significant effect of encapsulated starter cultures was observed on the physico-chemical properties (i.e. pH, TSS, and % lactic acid) of reconstituted skim milk. Incubation and storage periods significantly affected the physico-chemical properties of the reconstituted skim milk ($p<0.05$). No significant differences among the treatments were found for sensory qualities. The yogurt produced from 4% alginate-1.5% taro starch-encapsulated LAB, which was stored for 2 weeks, was found to be acceptable due to its right degree of sweetness and acidity and similarity with the control treatment. In this study, taro starch was proven to be a potential wall material that can be used with alginate to encapsulate yogurt starter cultures and can retain or increase the lactic acid bacteria cell viability without affecting the activity of the culture.

Viability of encapsulated LAB yogurt determined with different levels of Alginate-Taro starch matrix. The highest percentage of taro starch (1,5%) was found to retain a high viable cell count ($3,4 \times 10^{10}$ cfu/ml) after 12 days of storage at 4˚C. There is no significant effect of

encapsulated starter culture. Incubation and storage period significantly effected the physic-chemical properties of the reconstituted skim milk**.** No significant differences among the treatments were found for sensory qualities**.** Yogurt produced from 4% alginate-1,5% Taro starch encapsulated LAB was acceptable.

Discussion :

No discussion.

7. Iskandar Azmy (15.21-15.34)

The development of indigenous strain on fermented milk product : A new strain combination

Synopsis :

Rahayu, *et al.* (2013) successfully isolate five strains from Indonesian fermented foods, namely Dad-13, T-3, Mut-7, and Mut-13 which were identified as *Lactobacillus plantarum* and *Lactobacillus paracasei* SNP-2 which originated from infant intestine. The strains were indicated as probiotic candidates based on their resistance toward bile salt, simulated gastric juice, and antagonism ability.*L. plantarum* MUT7 together with *Streptococcus thermophyllus* DAD-11 were used to produce fermented milk. The acceptability tested using sensory test. The fermented milk from M7D11 was preferred than the commercial fermented milk and will be developed in industry.

Discussion:

i. Question : Why you choose MUT7?
   Answer : Because the study before this is using DAD13, now we want to know about MUT7 aplication in fermented milk

ii. Question: This fermented milk just plain or any other flavour?
   Answer : Yes, we have 3 flavour. Plain, strawberry, and blueberry

8. Shinta Maharani (15.34-15.47)

Effects of Temperature and Inoculum Concentration on Chemical and Microbiological Changes of Black Soybean Milk Yoghurt

Synopsis :

This research's objective was ti study the effects of temperature and inoculum concentration on pH, titrable acidity and the growth of lactic acid and acetic acid bacteria during the fermentation of black soybean milk using *Caspian Sea Yogurt* as starter culture. The lactic acid and acetic acid main microorganisms in black soybean milk yoghurt are *Lactobacillus lactis* subsp. *cremoris* and *Acetobacter orientalis*. Unpeeled black soybean milk added with sucrose 8% were inoculated with *Caspian Sea Yogurt* (1, 2, 3, 4, 5, and 10%) for 18 hours at various temperature (24, 26, 28, 30, 32). The fastest pH decrease and acid production were obtained at 30^{O}C with 5% inoculum.

Discussion:

No discussion.

9. Widodo (15.47-16.00)

The Quality of Fermented Milk Produced Using Human-Origin Lactic Acid Bacteria as Starters

Synopsis :

Fermentation was performed on pasteurized cows milk added with skin milk, containing total solid 18% using *Lactobacillus casei* strain AP, strain AG, and *Pediococcus* strain BE. Different strain of LAB did not affect pH, acidity, fat, lactose content, product viscosity, and total lactic acid bacteria, but affected the viscosity of the fermented products. The highest viscosity were fermented by *Lactobacillus casei* strain AP, *Pediococcus* strain BE, and *Lactobacillus casei* strain AG. As conclusion, the use of three strains of human-origin lactic acid bacteria as starter for dairy fermentation affected physical quality but not nutritional and microbiological qualities of the products.

Discussion:

No discussion.



I Nengah Sujaya **Discussions**

ROOM PRESENTATION B

Moderator : Achmad Dinoto and Lindayani
Speaker :

1. **Ahmad Dinoto (14.10-14.25)**
   The Chicken Gut Microbiota : Lesson Learned from SATREPS Project

   Synopsis:
   Studies on microbiology of chicken gut were conducted within Indonesian researcher and Japanese researcher through SATREPS (Science and Technology Research Partnership for Sustainable Development). One of research subjects was focussed on describing new taxa of chicken gut microbiota and screening of lactic acid bacteria for probiotic candidates. The aim of this collaboration was to find out potential isolate to be used as a probiotic in chicken poultry. The collaboration consists of several part of main research. The first main part is to know where the chicken gut microbiota was placed in the taxa. Second part is selection of potential isolate to be used as a probiotic in chicken poultry. In this study both culture-dependent and –independent techniques were applied for the analysis of Indonesian chicken microbiota. In the culture-dependent study, several novel taxa of anaerobic *Bacteroides* derived from Indonesian chicken were succesfully described.

   Discussions:
   No discussions

2. **Satriya Abrian (14.25-14.37)**

Isolation of Human Origin Methyl Mercury Resistant LAB from Sekotong, West Lombok, Indonesia

Synopsis:

Residences of Sekotong, West Lombok, had lived in mercury contaminated environment. This condition probably affects the condition of microflorae living inside residences' digestive tracts, i.e. occurrence of mercury-resistant Lactic Acid Bacteria (LAB). This study was aimed to isolate mercury-resistant LAB from faeces and breast milk of the residences of Sekotong. The result showed that mercury resistant LABs were successfully isolated from human digestive tract in Sekotong. At least 53 LAB isolate have ability growth in medium containing methyl mercury. After probiotic investigation, there are 15 passed in acid tolerance test, bile salt tolerance test and pathogenic test. This present study implied that mercury contamination due to ASGM (Artisanal Small Gold Mining) activities in Sekotong had impacted the human health, especially the diversity and characteristics of digestive tract and breast milk microflorae.

Discussions:

No discussions

3. **Lindayani (14.37-14.49)**

Combination between Salt Concentration and Fermentation Temperature on Probiotic Capability and Antimicrobial Activity of Lactic Acid Bacteria from Isolation of Yellow Betung Bamboo Shoot Pickle

Synopsis:

Yellow betung bamboo shoot is the most popular fermented food for traditional snack *Lumpia* in Semarang. Bamboo shoot can be processed as a pickle through fermentation in salt solution. The sour flavour was predicted came from the activity of LAB. The aim of this study was to isolate LAB from yellow bamboo root and investigate them for probiotic characteristic. The result of this study was the isolate such as Lactobacilli and Streptococcus from different salt concentration and temperature were recognized have probiotic capability and antimicrobial activity. The isolates need to optimize its environment to induce bacteriocin production and characterization. Therefore, isolates can be used as a probiotic candidate.

Discussions:

No discussions

4. **Lorentia santoso (14.49-15.00)**
In Vitro Detection of Bacteriocin Inhibitory Activity of Lactobacillus sp. Isolated from Betung Bamboo Shoot (Dendrocalamus asper) Pickles

Synopsis:

Bamboo shoot is one of the edible materials which abundantly available in Indonesia. To date, pickled bamboo shoot is likely to have potency to be lactic acid bacteria (LAB) source especially bacteriocin-producing LAB. The aim of this study was to determine the bacteriocin inhibitory activity of *Lactobacillus sp.* isolated from fermented *Betung* bamboo shoot under different fermentation conditions and medium compositions. Most LAB have special antagonistic activity when they response to environment. One of response was LAB produced bacteriocin. The result was the isolate could produce bacteriocin in a diferent salt consentration and different temperature. They also have ability growth againts pathogenic bacteria.

Discussions:

No discussions

5. **Muthia Cita Hapsari (15.00-15.09)**
Adhesiveness and Microstructure of Rehydrated Avocado-Fortified-Yogurt

Synopsis:

Yogurt was fermented food that only have a short shelf life. to make a longer shelf life yogurt could be dried. The aim of the study was to investigate adhesiveness and microstructure after rehydrates the dried yogurt mixed with avocado. The result showed that there was no effect of avocado in dried yogurt adhesiveness. The microstructure of dried yogurt mixed with avocado was separately compared with dried yogurt without avocado. Grain yogurt with fruit extracts of avocado was seen united among granules yogurt. While the yogurt without addition of fruit extracts had separate structure.

Discussions:

i. Questions: What will you do after this research? is there any planning of you to continue this result become a industry?

6. Nanik Suhartatik (15.09-15.19)

Biodegradation of Anthocyanin Using Beta Glukosidase from Pediococcus pentosaceus N11.16

Synopsis:

Glycoside is a major food compound which has important role in color formation, such as purple, blue, and dark red. From the previous research, we have isolated lactic acid bacteria from Indonesian fermented food. The aim of this research was to study the degradation of cyanidin-3-glucoside which broadly spread in the plant materials using β-glucosidase enzyme from *Pediococcus pentosaceus* N11.16. LAB Isolated from fermented food have ability to degrade anthocyanin because LAB could produce glucosidase enzyme to degrade the glycoside bond in anthocyanin.

Discussions:

No discussions

7. Rio Jati Kusuma (15.19-15.30)

A Novel Class Nutrient, MicroRNA, Content in Dairy Food Products

Synopsis:

The novel nutrient called micro RNA found in diary product. The aim of this study was to investigate miRNAs in several dairy products such as cheese, commercial yogurt, whip cream, half and half, and dip. The result was the miRNA have found in milk and yogurt. The concentration of miRNA in yogurt was higher than milk. Based from this result, the researcher had hypothesized that the microbiota in yogurt have important role in miRNA production.

Discussion:

i. Questions: About conclusion, are you sure that lab responsible to number?

ii. Questions: Why do you only choosed two different kind of micro rna? The mir 200c and mir 29b?

8. Tri Ardyati (15.30-15.41)

Diversity of Lactic Acid Bacteria and Nutrition Content of "Yoguku" During Storage

Synopsis:

Yoguku was a yogurt drink trademark from Malang City. The objectives of this research were to observe the diversity and the number of lactic acid bacteria also nutrition content of the product during storage ku. The research was performed using API test as a identification tools. The result showed that the LAB isolates belong to genus Lactobacillus. The nutrition content of *Yoguku* yogurt for lactic acid and fat content during storage still appropriate according to national standard of Indonesia. However, the protein content during storage did not appropriate with the standard.

Discussions:

No discussions

9. **Yeanly Wuena Pinaria (15.41-15.50)**
Exopolysaccharide Producing Lactic Acid Bacteria Isolated from Palm Sap (Arenga pinnata)

Synopsis:

Palm sap was a material for producing vinegar. The main microbiota in palm sap vinegar was LAB due to the low acidity of palm sap vinegar. In palm sap vinegar production could be found cloudy due to the content of exopolysaccharide (EPS). Since the EPS have important role in foodstuff industry, it was important to isolate LAB from palm sap vinegar and characterize their EPS production. The result showed all isolates belong to genus Lactobacillus and one of thus isolates called L. Casei AL 15 could produce EPS.

Discussions:

No discussions

Achmad Dinoto **Discussions**

PLENARY LECTURE II

Moderator : Yantyati Widyastuti and Nanik Suhartatik
Speaker :

6. Puspita Lisdiyanti (LIPI) (16.10-16.30)
Lactic Acid Bacteria for Functional Food Development

Synopsis:

The number of patent deposit microorganisms, especially to bacteria for potentially positive effect on health beyond basic nutrition (functional foods or nutraceuticals) such as lactic acid bacteria, is significantly increased. It is challenges for the research institutes, academics, industries to produce high quantities of cultures in a viable and stable form. Therefore, the isolation of strains such as lactic acid bacteria and other bacteria useful for functional foods or other health benefit properties is still conducted until now. Fermented foods are also as good sources for obtaining bacteria in functional food or nutraceutical production.

The purpose of diversity of Lactic Acid Bacteria and yeasts in Indonesian fermented foods such as enrich the collection of lactic acid bacteria and yeasts originated from Indonesian fermented foods, study the diversity of lactic acid bacteria and yeasts in Indonesian fermented foods, and find the lactic acid bacteria and yeasts with functional properties. The result showed that 219 isolates lactic acid bacteria from 4 province in Indonesia were classified into 48 species of 14 genera.

Study about cocoa bean fermentation determined the chemical analysis such as carbohydrates, organic acids, ethanol, amino acids and polyphenols was perform by High-performance liquid chromatography (HPLC). Aerobic fermentation (after 2 days microaerophilic fermentation) is characterized by higher organic acid and amino acid

concentrations, which are typical for fermented cocoa beans used for rich aroma chocolate. Anaerobic fermentation is characterized by lower organic acid and amino acid concentrations, but higher polyphenol concentrations, which are typical for fermented cocoa beans for healthy chocolate.

Discussion :

No discussion.

7. Julie D. Tan, Ph. D. (16.30-17.00)

Recent Studies on the Association of Lactic Acid Bacteria in Fermented Foods in the Philippines

Synopsis:

Nowadays, The Philippines is endowed with various types of raw materials which are ideal for the production of fermented foods. focuses of recent studies of LAB in the Philippines are (1) LAB isolation and testing for antimicrobial properties, (2) pharmacological/medicinal properties of LAB, (3) enhanced use and effective forms for use and (4) new products from LAB. Lactic acid bacteria (LAB) predominates in most of the fermented foods in the Philippines. This paper provides information on the types of LAB present in specific substrate ranging from plants, meat, fish and dairy products. Investigations on health-promoting effects and medicinal roles of LAB in the human body and important antimicrobial compounds elaborated by LAB are also discussed. This papers also includes some studies on methods of stabilizing the growth and activity of LAB for effective use as starter cultures in food fermentation.

The results from study about Alginate-Taro Starch Encapsulation of Starter culture for Yogurt Processing showed that alginate is most commonly used biopolymer, non-toxic, and form gentle matrices with calcium chloride to trap sensitive materials. Calcium alginate beads with yoghurt starter cultures such as *Lb. delbrueckii* subsp. *Bulgaricus* and *S. Thermophilus*. From the study, we knew that LAB viability of treatment T5 (4% alginate: 1,5% taro starch) for 12 days storage at 4˚C decreased from 6,3 x 10^{10} until 3,4 x 10^{10} cfu/ml.

Discussion :

No discussion.

8. Tyas Utami (17.00-17.20)

The Effect of Consumption of Probiotic drink on Gut Enterobacteriaceae

Synopsis:

Probiotics are defined as living microorganisms when administered in adequate amount as part of food confer a health benefit on the host (FAO/WHO, 2002). Probiotic efficacy relies on their ability to survive in the digestive system and able to proliferate in the gut. Factors such as type and composition of food consumed, life style, age, and race could influence in the survival of probiotic bacteria. Study in Recovery of *Lactobacillus casei* Shirota strain (LcS) from the intestine of healthy Indonesian volunteers after intake of fermented milk and its impact on the *Enterobacteriaceae* faecal microbiota has result there is not LcS detected in subject fecal before intake of fermented milk containing LcS. At the end of ingestion period, most of subjects feces contained LcS: 6-7 log CFU/g feces. After stop consuming LcS content decreased (18 of 26 subjects feces contained LcS 3.2 – 6.1 log CFU/g). LcS was recovered in all subjects after 10 days of ingestion period. LcS was found in feces of 69% subjects 10 days after the ingestion of fermented milk containing LcS was terminated. The number of *Enterocobacteriaeae, E. coli*, and coliform non *E,coli* decreased after ingestion of LcS for 10 days in almost half of the volunteers.

Lactic acid bacteria isolated from Indonesian Traditional Fermented Foods (Traditional, Spontaneous, Fruits and vegetables, Fish, shrimp, milk, Cassava, glutinuous rice, legumes). LAB selected and explored more to have functional properties, such as probiotics, bio-preservative and starter culture. *Lactobacillus plantarum* Dad 13 isolated from dadih. It is a traditional fermented buffalo milk from West Sumatera, Indonesia**.** Candidate probiotic: Resistance to bile salt and simulated gastric juice at differernt concentration. The results showed that β-glucosidase activity decreased 11,7 to 5,11 mg/100ml after 18 hours fermentation. Radical scavenging activity increased 17,95% - 45,72% after 18 hours fermentation. Total phenolic content increased 3,80 – 8,01 mg GAE/g after 18 hours fermentation. The effect of consumption of fermented milk containing *L. plantarum* Dad 13 on fecal microbiota of healthy Indonesian volunteers has showed that the population of *L. plantarum* increased in the subject's fecal after consumption of fermented milk containing *L. plantarum* Dad 13 for 20 days. The population of *L. plantarum* decreased after the consumption of fermented milk containing *L. plantarum* Dad 13 was discontinued. The population of *Enterobacteriaceae, E. coli* and coliform non *E. coli* in

the subject's fecal decreased in more than 50% subject after consumption of fermented milk containing Dad 13 for 20 days. Molecular Detection of *Lactobacillus plantarum* Dad 13 from Healthy Indonesian volunteers feces using RepPCR-BOX AIR primer. Based on BOX AIR- PCR analysis, *L. plantarum* Dad 13 was detected from volunteer's feces during consumption of fermented milk containing *L. plantarum* Dad 13. It indicated that *L. plantarum* Dad 13 could survive in the volunteer's digestive tract

Discussion :

No discussion.

9. Ken-ichiro Suzuki (17.20-17.40)

The Role of Culture Collections in the CBD Era

Synopsis :

The availability of microbial strains from public culture collections is an essential infrastructure for confirmation of the reproducibility of the results of publication as well as the further use of the microbial strains. Culture collection is a principal component for the prokaryote taxonomy. Essential Functions of Culture Collections including collection, preservation and supply of reference organisms, taxonomic type strains and materials for research and development. However, it is facing to important issues to be solved. (1) Availability of the type strains must be guaranteed by the culture collection. It also means the identity of the strain to that the depositor intends to deposit. The number of deposits with incorrect cultures is higher than that we imagine and accounted for 5% of the deposit in a culture collection. MALDO-TOF MS has been recently developed for identification of microorganisms with the database. Its usefulness for differentiation at the level lower than species is expected for the quality management of a culture collection. (2) The other issue is for the accessibility of the type strain in compliance with the national laws and regulations under the Convention on Biological Diversity (CBD) and the Nagoya Protocol (NP). I am involved in the project of establishment of Indonesian Culture Collection, InaCC at RCB-LIPI since 2011 to promote the microbial resources originated in Indonesia. InaCC (Indonesian Culture Collections) has established by funding of Indonesian Government. InaCC was certified with ISO9001:2008 in February 2014. InaCC is not only for taxonomy, but also for application aiming the commercialization. The microbial strains deposited to InaCC are

maintained in correct way and distributed based on the terms and conditions agreed with the depositors in compliance with Indonesian laws and regulations. InaCC is expected to be the infrastructure to facilitate microbiology of Indonesia and international cooperation.

Discussion :

No discussion.

Puspita Lisdiyanti

Julie D. Tan

Ken Ichiro Suzuki

10. Agus Wijaya (17.40-18.00)

Is Lactobacillus the dominant genus of lactic acid bacteria in Indonesian indigenous fermented foods?

Synopsis:

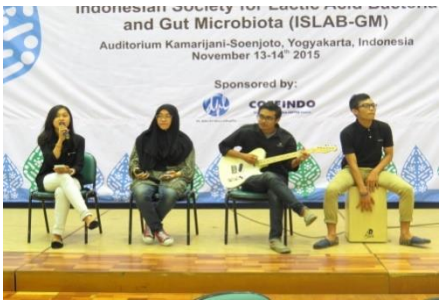
Lactic acid bacteria (LAB) are a group of bacteria having similarities in morphological, metabolic and physiological characteristics. Most of LAB have GRAS status based on long history of safe food use and are therefore determined as food-grade organisms. There were plenty sorts of fermented foods from Indonesia as products of lactic acid bacteria (LAB) activities. They were categorized into the following groups: fermented fruits, vegetables, fishes, cassava tubers, rice and soybeans. The results showed that the *Lactobacillus* was the dominant genus of lactic acid bacteria in Indonesian indigenous fermented foods with the dominant species *L. plantarum,* and followed by *Pediococcus* (with dominant species *P. pentosaceus*), *Streptococcus* (with dominant species *S. thermophilus*), *Leuconostoc* (with dominant species *L. mesenteroides*), *Enterococcus* (with dominant species *E. faecium*) and *Weissella* (with dominant species *W. confusa*).

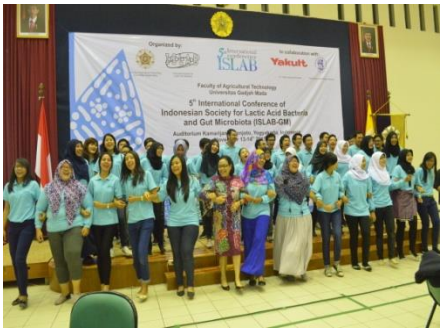
Discussion :

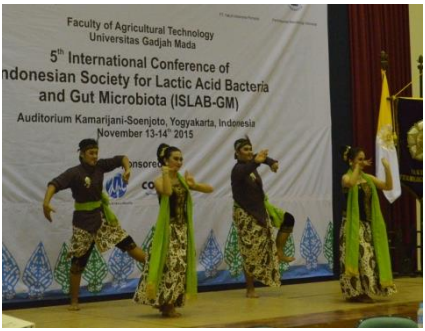
No discussion.

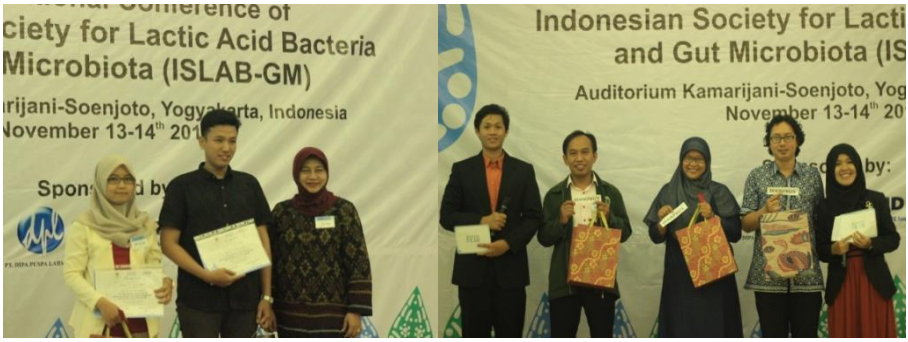
Agus Wijaya

Tyas Utami









Concessions of award for poster presenter (left) and dooprize(right)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