THE 10TH ASIAN CONFERENCE ON LACTIC ACID BACTERIA

August, 28th - 31st 2019

LACTIC ACID BACTERIA - GUT MICROBIOTA - PROBIOTIC

Organized by:

AFSLAB
Asian Federation of Societies for Lactic Acid Bacteria

INSLABGM
Indonesian Society for Lactic Acid Bacteria and Gut Microbiota

Faculty of Agricultural Technology Universitas Gadjah Mada

PERMI
Indonesian Society for Microbiology

Patpi
Indonesian Association of Food Technologist

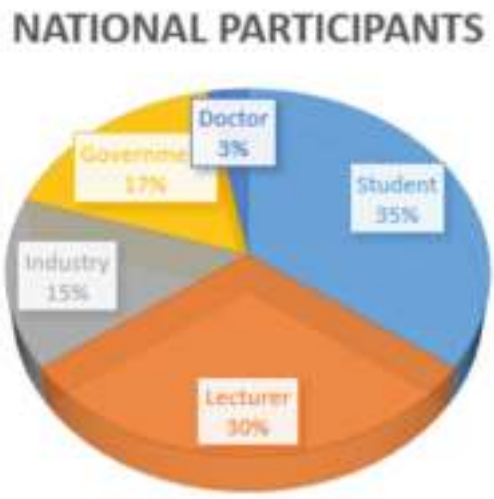
INTRODUCTION

THE 10TH ASIAN CONFERENCE OF LACTIC ACID BACTERIA (ACLAB-10)

The Asian Conference for Lactic Acid Bacteria (ACLAB) is a biennale event which is one of the activities facilitated by the Asian Federation of Societies for Lactic Acid Bacteria (AFSLAB). Each of the member countries of AFSLAB takes turn to host this event.

In 2019, it's a great pleasure for Indonesian Society for Lactid Acid Bacteria and Gut Microbiota (ISLAB-GM) to host the 10th Asian Conference on Lactic Acid Bacteria (ACLAB-10).

It is the aim of this conference to gather the advanced research information and application technologies of Lactic Acid Bacteria, Gut Microbiota, and Probiotic. The conference would serve as platform for researchers from academia and industry in Asia to obtain and exchange information on scientific progress and applications.



Participating Countries at ACLAB-10:
Bangladesh, Bulgaria, Cambodia, China, German, Philipines, India, Indonesia, Iran, Japan, Malaysia, Mexico, Mongolia, Singapore, South Korea, Taiwan, Thailand

International participants: 102
National Participants: 195
Total : 297
Number of Invited Speakers: 29

The 10TH Asian Conference of Lactic Acid Bacteria (ACLAB-10)

August 28-31th , 2019

Auditorium Grha Sbha Pramana, Universitas Gadjah Mada

Yogyakarta, Indonesia

1st Day (August 28th, 2019) Registration		
2nd Day (August 29th, 2019)		
07.30 - 08.00	Registration	
08.00 - 08.05	Opening	
08.05 - 08.15	Welcoming Dance "Tari Perjuangan"	
08.15 - 08.20	Welcome Remarks from Dr. Tyas Utami, M.Sc. as Chairman of ACLAB-10 Organizing Committee	
08.20- 08.30	Welcome Remarks from Prof. Dr. Ir. Endang S Rahayu, MS as President of AFSLAB	
08.30 - 08.35	Welcome Remarks from Prof. Dr. Ir. Eni Harmayani, M.Sc. as Dean Faculty of Agricultural Technology, Universitas Gadjah Mada	
Keynote Speakers		
08.35 – 09.05	Prof. Dr. Wilhelm Holzapfel	Are fermented foods still a promising source of beneficial LAB?
09.05 – 09.35	Prof. Dr. Min-Tze Liong	*Lactobacillus plantarum* DR7 & the Brain: From Fruit Flies To Human
09.35 – 10.05	Takuya Akiyama, Ph.D	Beneficial effects of *Lactobacillus casei* strain Shirota –from digestive health and beyond-
10.05 - 10.20	Coffee Break and Poster Session	
Plenary Lecture 1		
10.20 – 10.45	Prof. Ken Ichiro Suzuki	Cells of *Lactobacillus acetotolerans* Grown in Media Containing Acetic Acid and Tween 80
10.45 – 11.10	Prof. Koichi Watanabe	From Phylogenomics to Taxonomy: The expected taxonomic changes in the genus *Lactobacillus*
11.10 – 11.35	Prof. Sung Shik Yoon	Restoration of Gut Microbiota by Administering Female Rat with LAB Culture Supernatants
11.35 – 12.00	Prof. Dr. Kenji Sonomoto	Lactic acid bacteria as a micro-refiner for sustainable green society
12.00 – 13.15	Lunch Break	

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12.00 – 13.15	Lunch Break	

Plenary Lecture 2		
13.15 – 13.35	Prof. Jyoti Prakash Tamang	Microbial Diversity in Some Naturally Fermented Foods of India revealed by High-throughput Sequence Approaches
13.35 – 13.55	Prof. Dr. Hooi-Ling Foo	Lactic Acid Bacteria and The Way Forward
13.55 – 14.15	Prof. Francisco B. Elegado	Optimization Studies for Pediocin Production and Recovery from *Pediococcus acidilactici* 3G3
14.15 – 14.30	Coffee Break and Poster Session	
Plenary Lecture 3		
14.30 - 14.50	Dr. Jiro Nakayama	Features and signatures in Asian microbiome: Crisis or Adaptation?
14.50 - 15.10	Prof. Dr. Endang S Rahayu, MS	Gut Microbiota and Probiotics: Indonesian Perspective
15.10 - 15.30	Dr. G. Balakrish Nair	The Human Gut Microbiome in Healthy Indians
15.30 - 15.50	Dr. Jin-zhong Xiao	New Findings For The Reason of Being of *Bifidobacterium* in Human Gut
15.50 - 16.10	Prof. Yuan Kun Lee	Asian Microbiome Project Phase III: Infant microbiome
16.10 – 16.20	Closing	
16.30 - 21.30	Dinner and Ramayana Ballet Show at Prambanan Temple	

3rd Day (August 30th, 2019)		
07.30 - 08.00	Registration	
Room 1		
08.00 – 08.20	Dr. Yantyati Widyastuti	Role of lactic Acid Bacteria as Probiotics in the Rumen Fermentation
08.20 – 08.45	Prof. Seyed Shojaosadati	Intestinal adsorption of glucose, cholesterol and bile salt by simultaneous incorporation of edible microbiosorbent and intestinal bacteria
08.45 – 09.10	Dr. Massalin Nakphaichit	Alterations of gut microbiota associated with distinct allergic phenotypes: A longitudinal cohort

		study of Thai infants
09.10 – 09.35	Dr. Prakaash M Halami	Potentiality *Lactobacillus plantarum* group for probiotic functionality
Room 2		
08.00 – 08.20	Dr. Nanik Suhartatik	Microbial contamination of fresh juice sold in Surakarta
08.20 – 08.40	Prof. Dr. Teck Chwen Loh	Effect of Postbiotic and Inulin Supplements on Broiler Chickens
Room 3		
08.00 – 08.20	Prof. Dr. Lilis Nuraida	Cholesterol Lowering Effect of *Lactobacillus* Potential as Probiotic Isolated from Fermented Mustard
08.20 – 08.45	Prof. Dr. Demberel SH	The Composition LAB from Fermented Milk Products by Mongolian Herdsmen's and Their Application for Probiotic Development
08.45 – 09.10	Dr. Rina Agustina. Ph.D	Maternal gut microbiota and Probiotic Supplementation as The Potential Interface of Gut-brain-axis in Promoting Fetal Brain Development and Child Cognition
09.10 – 09.35	I Nengah Sujaya. Ph.D.	Characterization Of *Weissella confusa* F213 As Probiotic
09.35 – 09.55	Jaka Widada. Ph.D.	Draft genome sequence of *Lactobacillus plantarum Mut-7* FNCC 250, a native Indonesian strain isolated from fermented dried cassava (gatot)
Room 4		
08.00 - 08.20	Dr. rer.nat. Agus Wijaya	Bile Salt Hydrolase Activities of Probiotic Lactic Acid Bacteria: Desireable or Undesireable?
08.20 – 08.45	Dr. Julie D Tan	Hazards in Traditional Fermented Foods
08.45 – 09.05	Dr. Tyas Utami. M.Sc.	Preparation of Indigenous Lactic Acid Bacteria Starter Cultures for Large Scale Production of Fermented Milk
09.05 – 10.15	Technical Session Program	

10.15 – 10.35	Coffee Break and Poster Session	
10.35 – 11. 20	Technical Session Program	
11.20 - 12.20	AFSLAB MEETING	
11.20 – 13.00	Break and Lunch	
13.00 – 15.00	Technical Session Program	
Plenary Lecture 4		
15.00 -15.25	Prof. Guo-Qing He	Lactic acid bacteria in Huangjiu and Its roles
15.25 – 15.50	Prof. Tadao Saito	Recent Strategy of Development of New Functional Yogurts Using Probiotics in Japan
15.50 – 16.15	Prof. Ming-Ju Chen	Subspecies Identification and Medium Optimization of Probiotic Strain *Lactobacillus kefiranofaciens* HL1 and its Co-culture Strategy from Manufacturing Fermented Milk
16.15 – 16.30	Coffee Break and Poster Session	
Plenary Lecture 5		
16.30 – 16.55	Prof. Yong-Ha Park	The Skin Probiotic *Lactobacillus sakei* proBio-65: A Probiotic Paradigm with Therapeutic Implications of Psoriasis and Atopic Dermatitis
16.55 – 17.20	Prof. Tsai Ying Chieh	Physchobiotics as Biotherapeutic Agents for Neurodegenerative Disorders
17.20 – 17.40	Dr. Neerja Hajela	The Growing Burden of Antibiotic Resistance – Can Probiotic Help in Reducing The Crisis
17.40 – 18.00	Closing Ceremony	
18.00 – 18.30	Break	
18.30 - 20.00	Dinner and Entertainment	

TECHNICAL SESSION PROGRAMME

Time	Note	Speaker	Title
Room 1			
09.35 - 09.55	A1	Saowanit	Prebiotic Effect of Plant Extracts on Growth of Probiotic Lactic Acid Bacteria and Fish
09.55 - 10.15	A2	Rio Jati Kusuma	Divergent Effect Of Rice Bran And Fermented Rice Bran On Cecal Short Chain Fatty Acid And Lactic Acid Bacteria Of Colorectal Cancer Model Of Mice
10.35 - 10.55	A3	Chen, Ying-Chen	Investigation on The Responses of *Lactobacillus mali* APS1 to Environmental Stresses and Its Survival After Freeze-Drying
10.55 - 11.15	A4	Yu-Ting, Hsu	Evaluating The Correlation Between Microbiome And Metabolome Associated with The Mastitis in Holstein Dairy Cows
13.00 - 13.20	A5	Li, Kai-Yi	Development of Fermented Milk with *Lactobacillus paracasei* PS23 and Evaluation of Its Anti-colitis Function
13.20 - 13.40	A6	Nurulfiza Mat Isa	Isolation, Characterisation and Anti-Breast Cancer Effects of Potential Probiotic Bacteria from Human Breast Milk
13.40 - 14.00	A7	Marilen Parungao Balolong	Cytotoxic Activity of The Biofunctional Probiotic Strains *Lactobacillus plantarum* Bs25 and *Pediococcus acidilactici* S3 Against Colorectal Cancer Cells (Hct 116)
14.00 - 14.20	A8	Yoyok Budi Pramono	Utilization of Lesser Yam (*Dioscorea esculenta L.*) Flour as Prebiotic in Yogurt to Total Lactic Acid Bacteria (LAB), Sugar Reduction, and Organoleptic Properties
Room 2			
09.05 - 09.25	B1	Adelene Song Al Lian	*Lactococcus lactis* Producing Phage Lysins as Potential Enzybiotics Against Methicilin Resistant *Staphylococcus aureus*
09.25 - 09.45	B2	Karseno	The Effect of Dates Addition and Fermentation Time on Quality Characteristic of Coconut Water – Dates Probiotic Drink
09.45 - 10.05	B3	Gerry Michael Donad Harindah	Isolation And Identification Lactic Acid Bacteria From Gedi Leaves (*Albemoschus manihot L.*)
10.05 - 10.25	B5	Usman Pato	Antimicrobial activity of lactic acid bacteria strains isolated from dadih against *Listeria monocytogenes*
10.40 - 11.00	B6	Artitaya Buatong	Investigation of Antioxidant Activity and Cholesterol Reducing Ability from Lactic Acid Bacteria and *Bacillus spp.* Isolated from Foods and Fish Samples
11.00 - 11.20	B7	Ryan Haryo Setyawan	Edible mushroom potency to alleviate stunting through gut microbiota modulation : a review
13.00 - 13.20	B8	Leslie Michelle M. Dalmacio	Prebiotic Effects Of Philippine Medicinal Plants On Mice Gut Microbiome Provide Support For Their Health Benefits

Room 3			
09.55 - 10.15	C1	Laksmi Hartajanie	Effect of Administration Fermented Bitter Melon Juice on Lipid Profile of Diabetic Sprague Dawley Rats
10.35 - 10.55	C2	Lindayani	Potential Of Ampel Bamboo Shoots (*Bambusa vulgaris*) Pickle "*Lactobacillus fermentum LLB3*" and "*Lactobacillus pentosus LLA18*" As a Starter For Mozzarella Cheese And Beverage
10.55 - 11.15	C3	Ratchanu Meidong	Screening and Partial Characterization of Bacteriocin Produced by Lactic Acid Bacteria from Traditional Thai Fermented Food
13.00 - 13.20	C4	Priyanka Parhi	Effect of Fructooligosaccharides On The Growth and Survival of *Lactobacillus plantarum* in Model Sugar Systems
13.20 - 13.40	C5	Vita Meylani	Microbial Diversity in Traditional Kefir using culture-independent methods
13.40 - 14.00	C6	MD Rakhimuzzaman	Establishment of an Efficient Method of Ornithine and Citrulline High-production by a Plant-derived Lactic Acid Bacterium, *Weissella confusa* K-28
14.00 - 14.20	C7	Vaibhao Kisanrao Lule	Zinc Enrichment of *Lactobacillus spp.* and Assessment of its Bioavailability in Albino Wistar Rats: A Novel Biological Approach with Improved Bioavailability
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09.45 - 10.05	D2	Phatthanaphong Therdatatha	Difference of Gut Microbial Community in Indonesian Obese, Type 2 Diabetic, and Healthy Groups
10.05 - 10.25	D3	Yuri Lee	Development And Validation Of A Novel In Vitro Probiotic Screening System
10.40 - 11.00	D4	Arellano Ayala Karina	Rehydration improves probiotic properties of lyophilized *Lactobacillus plantarum*
11.00 - 11.20	D5	Dyah Fitri Kusharyati	Isolation of Bifidobacterium from Infant's Feces on Its Antimicrobial Activity
13.00 - 13.20	D6	Anang Mohamad Legowo	Effect Of D-Tagatose As Substrate On The *Lactobacillus bulgaricus* Existed Medium
13.20 - 13.40	D7	Hanies Ambarsari	Influence of Lactic Acid Bacteria in Commercial Probiotic on the Nitrification Process by Bacteria from Catfish Pond Sediment
13.40 - 14.00	D8	Ngatirah	Effect Of Iles-Iles (Amorphopallus Oncophyllus) Sinbiotic Effervescent Tablet To Decrease In Blood Sugar Levels In Hyperglicemic White Mice (Rattus Norvegicus)
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75	Hisakazu Iino	Prebiotic Effect of 2 g of Lactulose: A Randomized, Double Blind, Placebo-Controlled Crossover Study	**PP-75**
76	Delima Citra Dewi	Organoleptic Assessment, Cholesterol Level and Total Colony of Lactobacillus Acidophilus In Piskebal (Pisang Kepok Bakteri Asam Laktat)	**PP-76**
77	Rita Khairina	Fermented Food Diversity in South Kalimantan	**PP-77**
78	Pierangeli G. Vital	Assessment of Microorganisms Isolated from Commercially-Available Probiotic Products Suitable for Children Being Marketed In The Philippines	**PP-78**
79	Gaku Harata	*Lactobacillus rhamnosus* GG Might Influences Gut Microbiota of Healthy Japanese Subjects with a Possible Sex-Dependent Way	**PP-79**
80	Agustina Intan	Viability Local Probiotics on Yogurt with Supplementation of Purple Sweet Potatoes to Prevention of Diarrhea in Experimental Rats	**PP-80**
81	Nita Maria Rosiana	Development of Kefir with Adding of Dragon Fruit Peel Extract as a High Antioxidant Drink	**PP-81**

FIRST DAY CONFERENCE

Thursday, August 29th, 2019

Registration Day 1

Opening by Master of Ceremony

Welcoming Dance "Tari Perjuangan"

Welcome remarks from Dr. Tyas Utami, M.Sc. as Chairman of ACLAB-10 Organizing Committee

Welcome remarks from Prof. Dr. Ir. Endang S. Rahayu, MS as President of AFSLAB

Welcome remarks from Prof. Dr. Ir. Eni Harmayani, M.Sc. as Dean Faculty of Agricultural Technology, Universitas Gadjah Mada

KEYNOTE SPEAKERS

Prof. Dr. Wilhelm Holzapfel

Are fermented foods still a source of beneficial LAB?

Synopsis:
Fermented food dominated by LAB in many regions. Fermented food itself have many benefit and can be valuable resources for "strain prospecting" Beneficial mechanisms of fermented food to LAB itself such as: benefits of a mixed population, in conventional fermentation we ca find single/multiple strains. Because, of this microbiota inside the fermented food can be very diverse. Beside of that , it can valuable metabolites as substrate for colon microbiota, this is essential in the interactive cross-feeding chain. As we can see from US Probiotic market size, we can see that probiotic food and beverages demand will be high if we compare it to probiotics dietary supplementes, and animal feed probiotics. The area of probiotics represents a major field of recent and projected future development. The major focus when considering functional aspects of fermented foods are strain, safety, and numerous other factors that involved.

Prof. Dr. Min-Tze Liong

***Lactobacillus plantarum* DR7 & the Brain: From Fruit Flies To Human**

Synopsis:
Probiotic microorganisms have various health benefits. Recent evidences have illustrated the potentioal of LAB for brain health, ranging from neurodegenerative diseases to stress, memory and cognition. LAB Lactobacillus plantarum DR7 isolated from cow's milk Penang, Malaysia, this Lactobacillus plantarum DR7 shown a reversal of symptoms associated with Alzheimer's Diseases in a fruit fly model accompanied by distinct changes of gut microbiota profiles.

In rats, DR7 shown improved stress and anxiety symptoms and improved the memory of rats to go back to the start point. The administration of DR7 for 12 weeks in stressed adults has contributed to improve stress and anxiety scores, in addition to memory and cognitive abilities, primarily via enhancement along the serotonin pathway and maintenance of the dopamine pathway.

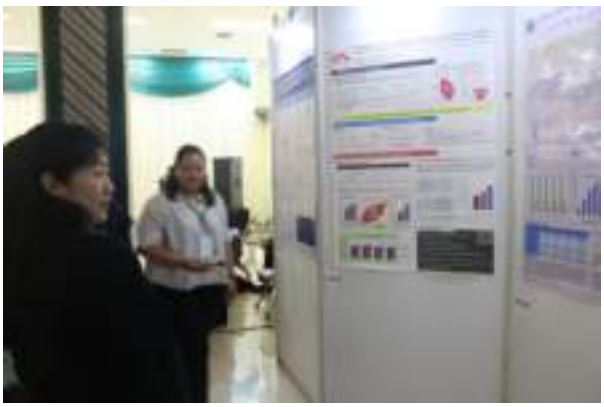
Takuya Akiyama, Ph.D

Beneficial effects of
***Lactobacillus casei* strain Shirota**
–from digestive health and beyond-

Synopsis:

Intestinal microbiome has been revealed to influence on human health. But this research will focus on Lactobacillus casei strain Shirota. There's a research to do study in elder people to see if L.casei can decreases the risk of constipation, diarrhea, and fever, and it is proven by this study. This study using Yakult Intestinal Flora-Scan, this machine allows high-sensitive enumeration of microbiome, not only intestinal but also bacteria living in part of our body. Lactobacillus casei strain Shirota have positive impact on intestinal environements and improve digestive disorders by improving intestinal microbiome of the elderly. LcS is checked in stress-people to see if there is the impact to physiological stress response. And the result from the physical symptoms, abdominal symptoms and cold-like symptoms was significantly repressed by Yakult intake when compared to placebo, indicating the LcS efficiency of reducing risks of stress symptoms.

Coffee break



Poster Session

PLENARY LECTURE 1

Prof. Ken Ichiro Suzuki

Cells of *Lactobacillus acetotolerans* Grown in Media Containing Acetic Acid and Tween 80

Synopsis:
Cellular fatty acid composition is known as one of the useful chemotaxonomic characteristics for bacteria. Cellular fatty composition itself is affected by the cultivation condition.
Lactobacillus acetotolerance isolated from spoiled vinegar broth that can live in acetic acid tolerance 9-11% in pH 5, which means high enough. This research is to examined the effect of acetic acid concentration in cultivation media to cellular fatty acid. Cellular fatty acid were liberated from freeze-dried cells in various concetration of acetic acid. Unknown peak A appeared in the cells grown on MRS medium containing 3% acetic acid and accounted for more than 50%. Peak A appeared again when medium containing 1% Tween 80 and acetic acid higher than 3%. Peak A identified as 10-hydroxy octadecanoid acid. This is an interesting phoneomenon and may be related to the acetic acid tolerance

Prof. Koichi Watanabe

From Phylogenomics to Taxonomy: the expected taxonomic changes in the genus *Lactobacillus*

Synopsis:
The genus Lactobacillus comprises over 220 formally recognized species that are extremely diverse both from a phenotypic and a genotypic point of view. The current genus Lactobacillus is therefore in risk of being renamed and split into at least 10 new genera. Since 2015 Lactobacillus and related (e,g., Fructobacillus, Leuconostoc, Pediococcus, Ocnococcus) species have been analyzed based on whole genome sequences. The combination of sequences based and distance based methods revealed the presence of 10 robust phylogroups. The genus Lactobacillus could be split into 24 phylogroups, depending on the cut-off values. Effort to keep initial L for genus name for several phylogroups will be made. There is always risks of confusion between old commercial name and correct scientific name, therefore we should communicate it to consumer, regulator, and the authorities.

Prof. Sung Shik Yoon

Restoration of Gut Microbiota by Administering Female Rat with LAB Culture Supernatants

Synopsis:

Sales of functional food for health is increasing about 15% every year. Traditionally, Korean people uses medical herbs extracts, but people are frequently experienced common symptoms like diarrhea, abdominal pain, and allegy. Medical herbs itself contains high level of antioxidant. Samples from 5 differents type medical herbs tested by invitro for their activity against common microorganisms by monitoring growth of the bacterial strain tested. To investigate the restoration of gut microbiota affected by treating medical herbs, feces samples have been examined for 4 weeks. Using PCR-DGGE shown diversity of gut bacterial flora was reduced. However, those were treated with culture supernatants of LAB, beneficial bacteria such as Lactobacillus sp. were selectively stimulated while potential harmful bacteria were decreased. The culture supernatant of LAB may be effective to control pathogens and to maintain the gut microbial balance in female SD rats.

Prof. Dr. Kenji Sonomoto

Lactic Acid Bacteria as A Micro-Refiner For Sustainable Green Society

Synopsis:

Design biomass study is , we use and apply existing excellent strain or established high efficient process. And we design biomass as optimal substrates by searching or modifying its characteristics in accordance with the targeted strain or process. Therefore, this research discover a promising lactic acid producers with broader substrate metabolic capacity for utilization of desgined biomass and development of bioprocess. The lactic acid was Enterococcus faecium QU 50. This strain has potential to homo ferment most lingocellulose derved sugar to L(+)LA at 50oC, efficiently co-ferment hexose and pentose, greatly enhance LA yield to enzyme loading for hydrolysis of rice straw as a starting biomass by using the semihydrolysate rather than the glucose-oriented one in the constructed open adaptive fermentation process

Plenary Lecture 2

Prof. Jyoti Prakash Tamang

Microbial Diversity in Some Naturally Fermented Foods of India revealed by High-throughput Sequence Approaches

Synopsis:

There are a lot Indian Fermented Milk Product that we can casually consumed in India such as Chhurpi, Dahi, Lassi, Shrikand and we also can find Dadih from Indonesia. In these product, there are two dominant bacteria: Firmicutes (Streptococcaceae, Lactobacillaceae) and Proteobacteria (Acetobacteraceae). Lactococcus lactis and Lactobacillus helveticus were the predominant lactic acid bacteria while Acetobacter spp. and Gluconobacter spp. were the predominant acetic acid bacteria present. There are many fermented soybean foods and meat in India too. Fermented food itself have so many dominant microbiome in the products, in Sikkim such as Citrobacter europaeus BSE17, Shigella sonnei BSE32, etc. The microbiome inside the fermented food itself, so many and various microbiome depend on the starter and the material.

Prof. Dr. Hooi-Ling Foo

Lactic Acid Bacteria and The Way Forward

Synopsis: -

As we now, lactic acid bacteria have an important role in human life and health. We can get LAB in normal ecosystem, and they're usually involved in food preparation along the civilisation of mankind. One of LAB product that is famous and we all know is probiotic. Probiotic contribute in health effect and can contribute in food preservation. Beside probiotic, there are also a postbiotic. Postbiotic is refer to the metabiolic byproducts of probiotic bacteria, and have many beneficial effects of probiotics. This research will examine a Malaysian foods to know the characteristic of the probiotic and the effect to health.

Prof. Fransisco B. Elegado

Optimization of Pediocin Production and Recovery from *Pediococcus acidilactiti* 3G3

Synopsis: Philippine have so many fermented food from many regions of the country. Pediococcus acidilactici found in various fermented dairy products, many are bacteriocin (pediocin) producers. Bacteriocin are peptidic toxins produced by bacteria to inhibit the growth of similar or closely related bacterial strain. Bacteriocin can be useful as "natural" biopreservatives against gram, bacterial food and feed pathogens and contaminats thus minimizing the use of antibiotics and chemical preservatives. The challenges of commercializing LAB bacteriocins are downstream processing is not easy, very small bacteriocin titer during fermentation. Sucrose was used instead of glucose to improve Pediocin production. Upon optimization, bacteriocin yield was still desirable even at low yeast extract, Tween 80 and ammonium citrate concentrations. The purification of bacteriocin using adsorption, desorption, RP, HPLC. The product development of bacteriocins LAB can against contaminant LAB in ethanol fermentation, bacteriocin as possible therapeutic agent.

LUNCH BREAK

COFFEE BREAK

POSTER SESSION