



“Research and Innovation towards Sustainable Food System”

THE 4th POSTGRADUATE SYMPOSIUM

9 December 2021

**Faculty of Agro-Based Industry,
Universiti Malaysia Kelantan,
Jeli Campus, Kelantan,
Malaysia**



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The 4th Postgraduate Symposium

“Research and Innovation towards Sustainable Food System”

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THE 4th POSTGRADUATE SYMPOSIUM

“Research and Innovation towards Sustainable Food System”

Organized by
Faculty of Agro-based Industry (FIAT)
Universiti Malaysia Kelantan

in collaboration with
Guru Ghasidas University, University Gadjah Mada, Vikrama Simhapuri University, Princess of
Naradhiwas University & Yogi Vemana University



Editors

Nik Nur Azwanida Zakaria
Zulhisyam Abdul Kari
Nurhanan Abdul Rahman
Shahirah Ahamad



Preface

The Postgraduate Symposium is organized by Faculty of Agro-based Industry, Universiti Malaysia Kelantan to provide a platform for research postgraduate students to present and share their exciting ideas, and progress in research. The year 2021 marks the 4th Postgraduate Symposium rendering the theme “Research and Innovation towards Sustainable Food System”, aims to promote academic interaction and intellectual advancements among the participants. It is hoped that the postgraduate students will benefit from the sharing sessions among presenters, invited speakers, supervisors and fellow students. The faculty welcomes anyone that shares the same interest to participate in this symposium either from the local or international universities. The organizing committee sincerely hopes that this symposium provides interesting and multidimensional perspectives and relevant information which is useful for participants' professional and personal use.



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Message from

DEAN OF FACULTY OF AGRO-BASED INDUSTRY

**Associate Professor Dr. Seri Intan Binti
Mokhtar**



Assalamualaikum Wr Wb.,

Salam Sejahtera, and very good morning. In the name of Allah, the Most Gracious and the Most Merciful.

On behalf of the Faculty of Agro-based Industry, Universiti Malaysia Kelantan, I welcome you to the 4th Postgraduate Symposium 2021. This year, our central theme is “Research and Innovation towards Sustainable Food System”. I would like to extend our greetings to all distinguished speakers, participants and guests from Malaysia, India, Indonesia, and Thailand who are here with us today. High appreciation is also extended to the committee members of this symposium for organizing it and ensuring that it proceeds smoothly.

Research and innovation are crucial in ensuring a sustainable food system for our ever-expanding global population, reaching 10 billion people in 2050. At the same time, the agriculture sector faces the critical challenge of producing and distributing sufficient food in climate change conditions and scarce natural resources. Because of that, we must share knowledge in the face of such challenges; a challenge shared is a challenge divided, but knowledge shared is knowledge multiplied.

Building sustainable food systems requires work in all three dimensions of sustainable development – social, economic, and environmental. More efficient food systems are critical for alleviating poverty, meeting the world’s food needs, and shrinking agriculture’s ecological impact.

Today we will be witnessing, discussing and listening to progress made in the area of sustainable food systems from distinguished speakers and excellent participants. I wish the participants a very fruitful and productive symposium. I am looking forward to hearing the outcome and constructive conclusions of this meeting.

Herewith I officially open this symposium.

Thank you very much.

SERI INTAN MOKHTAR

Message from



CHAIRMAN OF THE 4TH POSTGRADUATE SYMPOSIUM

Ts. Dr. Nor Dini Binti Rusli

Dear Participants,

It is my great pleasure to welcome you to the 4th Postgraduate Symposium, organised by the Faculty of Agro-based Industry, Universiti Malaysia Kelantan. We are honoured to host this symposium virtually in the midst of the pandemic Covid-19. The postgraduate symposium has become an innovative platform for participants, particularly the postgraduate students to contribute and exchange ideas with like-minded peers at international level in order to improve their oral, writing, and presentation skills.

We, at the Faculty of Agro-based Industry are committed to taking a leadership role in addressing global sustainability challenges, which is food system sustainability through inter-disciplinary research and engagement, as well as through its campus operations. Hence, “Research and Innovation towards Sustainable Food System” as the theme of our symposium is much justified. The symposium covers five scopes which include agro-technology, animal science, food security, agribusiness and product development.

I would like to take this golden opportunity to thank our international collaborators; Guru Ghasidas University, India, Vikrama Simhampuri University, India, Yogi Vemana University, India, Universitas Gadjah Mada, Indonesia and Princess of Naradhiwas University, Thailand for your commitments and contributions. My sincere thanks also for all keynote speakers, plenary speakers and all participants for their contribution to make this symposium a great success and fruitfulness.

As a chairperson of the conference, I wish to express my sincere thanks to committee members for their devotion and efforts to make this postgraduate symposium a resounding success.

Thank you and I look forward to having you again in other conference and symposium, organised by the Faculty of Agro-based Industry.

Yours sincerely;

A handwritten signature in black ink, appearing to read 'Nor Dini Rusli'.

NOR DINI RUSLI



Symposium Committee

Patron	Associate Professor Dr. Seri Intan Mokhtar
Advisor	Ts. Dr. Khairiyah Mat
Chairman	Ts. Dr. Nor Dini Rusli
Secretary	Mrs. Hazreen Nita Mohd Khalid
Secretariat	Dr. Suniza Anis Mohamad Sukri Mr. Faiz Nur Hakim Azmi Mrs. Amirah Abdullah Mrs. Syamsurianey Samsudin
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Editorial/Abstract Book	Ts. Dr. Nik Nur Azwanida Zakaria (Head) Ts. Dr. Zulhisyam Abdul Kari @ Abdullah Dr. Nurhanan Binti Abdul Rahman Miss Shahirah Ahamad (PG)



Tentative Programme

The 4th Postgraduate Symposium Faculty of Agro-Based Industry (FIAT)

Date: 9 December 2021 (Thursday)

Time: 9.00 am - 5.30 pm

Time	Programme
9.00 a.m	Opening ceremony Welcoming remarks by: Ts. Dr Nor Dini Rusli , Chairperson for the 4th Postgraduate Symposium, Faculty of Agro-based Industry, UMK Officiating speech by: Assc. Prof. Dr. Seri Intan Mokhtar , the Dean, Faculty of Agro-based Industry, UMK
9.15 a.m	Keynote speech Speaker: Prof. Dr Abdul Rashid bin Mohamed Shariff , Faculty of Engineering, UPM Title: Opening New Frontiers with Smart Agriculture
10.00 a.m	Invited speaker 1: Assc. Prof. Dr Nitty Hirawaty Kamarulzaman , (Department of Agribusiness and Bioresource Economics, Fac. of Agriculture, UPM) Title: Rethinking Supply Chain for Sustainable Food System
10.20 a.m	Invited speaker 2: Dr Chan Chian Wen (Prebio-Tech/Pan-Gaea TripleVs Venture Sdn. Bhd.) Title: What does it take to become a Top-3 innovator in UN FAO?
10.40 a.m	Invited speaker 3: Ir. Cuk Tri Noviandi , (S. Pt., M. Anim. St., PhD, IPM., ASEAN Eng. Faculty of Animal Science Universitas Gadjah Mada) Title: Achieving balanced ruminant ration by utilizing local feedstuffs in Indonesia.
11.00 a.m	Invited speaker 4: Assoc. Prof. Dr Ashwini Kumar Dixit (Department of Botany, Guru Ghasidas Vishwavidyalaya, Koni India) Title: Immunomodulatory herbal medicine and nutraceuticals.
11.20 a.m	Tea break
11.30 a.m	Parallel sessions (breakout rooms)
12.30 p.m	Lunch break
2.30 p.m	Parallel sessions (breakout rooms)
4.30 p.m	Closing ceremony Closing speech by: Prof. Dr Mohd Rosli Mohamad , the Dean, Center for Postgraduate Studies, UMK Award giving ceremony for Best Presenters
5.00 p.m	End of session



Breakout Rooms

Code	Name	Category	Room	Presentation
MORNING-AFTERNOON				
AB01	Robi Agustiar	(AB) Agribusiness	1	11.30 am - 11.45 am
AB02	Endah Satiti	(AB) Agribusiness	1	11.45 am - 12.00 pm
AB03	Erlina Astuti	(AB) Agribusiness	1	12.00 pm - 12.15 pm
AB04	Muhamad Hanis Bin Abd Razak	(AB) Agribusiness	1	12.15 pm - 12.30 pm
FS01	Romalee Chedoloh	(FS) Food Security	2	11.30 am - 11.45 am
FS02	Syeda Anjum Mobeen	(FS) Food Security	2	11.45 am - 12.00 pm
FS04	Nurul Athirah Binti Mohd Zuki @ Rosli	(FS) Food Security	2	12.00 pm - 12.15 pm
FS10	Muhammad Hanif Bin Rosdi	(FS) Food Security	2	12.15 pm - 12.30 pm
AG01	Nifareesa Chealoh	(AG) Agrotechnology	3	11.30 am - 11.45 am
AG02	Muhammad Akmal Bin Mohd Zawawi	(AG) Agrotechnology	3	11.45 am - 12.00 pm
AG03	Muhammad Khairulanam Zakaria1	(AG) Agrotechnology	3	12.00 pm - 12.15 pm
*AG05	Basiri Bristone	(AG) Agrotechnology	3	12.15 pm - 12.30 pm
*AS01	Muhammad Amiruddin Bin Wahab	(AS) Animal Science	4	11.30 am - 11.45 am
*AS02	Nor Syairah Atiqah Binti Mohamad Hanafiah	(AS) Animal Science	4	11.45 am - 12.00 pm
*AS03	Muhammad Aiman Bin Adam	(AS) Animal Science	4	12.00 pm - 12.15 pm
AS04	Nur Nazhiifah Amiiarah Binti Mohd Suhaimi	(AS) Animal Science	4	12.15 pm - 12.30 pm
PD01	Chan Ke Xin	(PD) Product Development	5	11.30 am - 11.45 am
*PD02	Nurul Fadzlin Binti Ab Llah	(PD) Product Development	5	11.45 am - 12.00 pm

PD03	Shahirah Binti Ahamad	(PD) Product Development	5	12.00 pm - 12.15 pm
PD04	Nur Solehin Bin Sulaiman	(PD) Product Development	5	12.15 pm - 12.30 pm

EVENING

AG06	Ferid Abdulhafiz Kemal	(AG) Agrotechnology	1	2.30 pm - 2.45 pm
AG07	Rivitra A/P Vintisen	(AG) Agrotechnology	1	2.45 pm - 3.00 pm
AG09	Gunavathy Selvarajh	(AG) Agrotechnology	1	3.00 pm - 3.15 pm
AG12	Siti Maryam Salamah Binti Ab Rhaman	(AG) Agrotechnology	1	3.15 pm - 3.30 pm
AG13	Nurihan Chehwaesulong	(AG) Agrotechnology	1	3.30 pm - 3.45 pm
AG14	Miss Nusanisa Chedao	(AG) Agrotechnology	1	3.45 pm - 4.00 pm
AG15	Fadzlin Qistina Binti Fauzan	(AG) Agrotechnology	2	2.30 pm - 2.45 pm
AG16	Suzie Haryanti Bt Husain	(AG) Agrotechnology	2	2.45 pm - 3.00 pm
AG18	Munirah Binti Mokhtar	(AG) Agrotechnology	2	3.00 pm - 3.15 pm
AG19	Arigela Chandrasekhar	(AG) Agrotechnology	2	3.15 pm - 3.30 pm
AG20	Yusniza Binti Muhamad Che Ya	(AG) Agrotechnology	2	3.30 pm - 3.45 pm
AG21	Harika Katepogu	(AG) Agrotechnology	2	3.45 pm - 4.00 pm
AS05	Zaenab Nurul Jannah	(AS) Animal Science	3	2.30 pm - 2.45 pm
AS06	Diana Rahmawati	(AS) Animal Science	3	2.45 pm - 3.00 pm
AS07	Sareena Semaee	(AS) Animal Science	3	3.00 pm - 3.15 pm
*AS08	Ismah Ulfiyah Azis	(AS) Animal Science	3	3.15 pm - 3.30 pm
*AS09	Kholifatus Sholiha	(AS) Animal Science	3	3.30 pm - 3.45 pm
	Hafis Datumada, Muhammad-			
AS10	Charif Ma and Thanaset Thongsaiklaing	(AS) Animal Science	3	3.45 pm - 4.00 pm
AS13	Jennielyn Anak Jendy	(AS) Animal Science	4	2.30 pm - 2.45 pm
AS14	Moh Ihsan Zain	(AS) Animal Science	4	2.45 pm - 3.00 pm
PD05	Nurul Amira Binti Zainurin	(PD) Product Development	4	3.00 pm - 3.15 pm
*PD06	Nagarjuna Reddy Vendidandala	(PD) Product Development	4	3.15 pm - 3.30 pm
PD07	Huda Binti Awang	(PD) Product Development	4	3.30 pm - 3.45 pm
PD08	Nor Asfaliza Abdullah	(PD) Product Development	4	3.45 pm - 4.00 pm

PD09	Erman Shah Jaios	(PD) Product Development	5	2.30 pm - 2.45 pm
*PD10	Muhammad Irfan Bin Jalalludin	(PD) Product Development	5	2.45 pm - 3.00 pm
PD11	Nursyafiqah Binti Shafi'E	(PD) Product Development	5	3.00 pm - 3.15 pm
PD12	Noramalina Binti Abdullah	(PD) Product Development	5	3.15 pm - 3.30 pm
PD13	Arni Binti Mansor	(PD) Product Development	5	3.30 pm - 3.45 pm

The extended abstract for each participant can be found and coded according to the theme, except those with an asterisk*.

List Of Participants

No.	Code	Name	Abstract Title	Institution
1.	AB01	Robi Agustiar	The Study of Import Cattle Supply Chain Processes through Feedlots from Traditional to Modern Markets	Universitas Gadjah Mada
2.	AB02	Endah Satiti	Income Analysis of Dairy Cattle in Berdaya and Aura Women's Livestock Farmer Groups (A Case of Samiran Village, Selo Subdistrict, Boyolali Regency)	Universitas Gadjah Mada
3.	AB03	Erlina Astuti	Motivation of Cattle Farmers in Collective Action through Farmer Group in Bantul District	Universitas Gadjah Mada
4.	AB04	Muhamad Hanis Bin Abd Razak	Pineapple Supply Chain during Covid-19 in Malaysia: A Preliminary Study	Malaysian Pineapple Industry Board
5.	AG01	Nifareesa Chealoh	Identification of AFLP Marker Related to Low Salinity Tolerance in Postlarval-15 Black Tiger Shrimp (<i>Penaeus monodon</i>)	Princess of Naradhiwas University
6.	AG02	Muhammad Akmal Bin Mohd Zawawi	Internet of Things (IoT) Approach to Detect and Modelling Fusarium Wilt Disease on Banana	Universiti Malaysia Kelantan
7.	AG03	Muhammad Khairulanam Zakaria	Optimisation of pH and Temperature for Protein Degradation by <i>Lactobacillus</i> sp.	Universiti Malaysia Kelantan
8.	*AG05	Basiri Bristone	Herbicidal Effect of Isolated Compounds from Parthenium (<i>Parthenium hysterophorus</i>) on Jungle Rice (<i>Echinochloa colona</i>) in Aerobic Rice Systems	Universiti Malaysia Kelantan
9.	AG06	Ferid Abdulhafiz Kemal	Tissue Culture Technique for Rapid Clonal Propagation of Keladi Candik (<i>Alocasia longiloba</i> Miq.)	Universiti Malaysia Kelantan
10.	AG07	Rivitra A/P Vintisen	Effects of Combined Fertilizer Sources on Pest Population and Plant Growth Performance of Chilli	Universiti Malaysia Kelantan
11.	AG09	Gunavathy Selvarajh	Rice Straw Biochar Application Enhances Soil Nitrogen Availability for Efficient Rice Plant Growth	Universiti Malaysia Kelantan
12.	AG12	Siti Maryam Salamah Binti Ab Rhaman	Evaluating the Suitability of Heavy Metal Content in Sawdust, Paddy Straw and Oil Palm frond For Mushroom Cultivation	Universiti Malaysia Kelantan
13.	AG13	Nurihan Chehwaesulong	Colchicine-Induced Variation in Xanadu (<i>Philodendron xanadu</i>) as Commercial Feature Aspects	Princess of Naradhiwas University

14.	AG14	Miss Nusanisa Chedao	The Macronutrient Evaluation of the Recycling and the Modifying of Sajor-caju Mushroom Waste	Princess of Naradhiwas University
15.	AG15	Fadzlin Qistina Binti Fauzan	Dihaploidization of Anther and Ovary Cultures of Rock Melon (<i>Cucumis Melo</i> L.) as the Basis for Production of Hybrid Cultivars	Universiti Malaysia Kelantan
16.	AG16	Suzie Haryanti Binti Husain	Calcium Release Pattern of Calcium Amendments Applied to Strongly Acid Soils	Universiti Malaysia Kelantan
17.	AG18	Munirah Binti Mokhtar	The Effect of <i>Blaptica dubia</i> on <i>Oreochromis</i> spp. Growth	Universiti Malaysia Kelantan
18.	*AG19	Arigela Chandrasekhar	Antidiabetic Properties of Bitter Gourd Honey in Streptozotocin- Nicotinamide Induced Diabetic Rats	Universiti Malaysia Kelantan
19.	AG20	Yusniza Binti Muhamad Che Ya	Response on Vegetative Growth and Yield of Butternut Squash (<i>Cucurbita moschata</i>) Cultivar Waltham under Different Bokashi Dosage	Universiti Malaysia Kelantan
20.	AG21	Harika Katepogu	Isolation and Characterization of <i>Pediococcus pentosaceus</i> HLV1 from Idly Batter, a Fermented Food of South India	Yogi Vemana University
21.	*AS01	Muhammad Amiruddin Bin Wahab	Colour Evaluation and Physical Properties of Different Egg Custard Formulation using <i>Moringa oleifera</i> and <i>Curcuma longa</i> as a Feed for Giant Freshwater Prawn, <i>Macrobrachium rosenbergii</i> Larvae	Universiti Malaysia Kelantan
22.	*AS02	Nor Syairah Atiqah Binti Mohamad Hanafiah	Effect of Age and Parity in PSPB Concentration of Kedah Kelantan (KK) Cattle in Early Pregnancy	Universiti Malaysia Kelantan
23.	*AS03	Muhammad Aiman Bin Adam	Partial Purification and Molecular Weight Determination of Pregnancy-Specific Protein B (PSPB) from Kedah-Kelantan Cattle	Universiti Malaysia Kelantan
24.	AS04	Nur Nazhiifah Amiiarah Binti Mohd Suhaimi	High-Tech Herbal Medicine: Sustainable Ruminant Formula for the Future	Universiti Malaysia Kelantan
25.	AS05	Zaenab Nurul Jannah	Strategy Analysis on Small Ruminant Livestock Business in Pandemic Covid-19 (Case Study of HPDKI Farmers, Banyumas, Indonesia)	Universitas Gadjah Mada
26.	AS06	Diana Rahmawati	Effect of Guanidinoacetic Acid with Different Protein Levels on Growth Performance of Broiler Chicken	Universitas Gadjah Mada
27.	AS07	Sareena Semae	<i>In Vitro</i> Ruminal Fermentation of Ration Supplemented with Calcium Soap	Princess of Naradhiwas University

28.	*AS08	Ismah Ulfiyah Azis	Effects of Nutrition Improvement and Premix Mineral Supplementation to Blood Metabolite Profile of Repeat Breeder Cattle	Universitas Gadjah Mada
29.	*AS09	Kholifatus Sholiha	Effects of Coriandrum Essential Oil Nanoemulsion in Drinking Water on Growth Performance of Broiler Chickens	Universitas Gadjah Mada
30.	AS10	Hafis Datumada, Muhammad-Charif Ma and Thanaset Thongsaiklaing	Single Nucleotide Polymorphism (SNP) in 5' flanking region of Dopamine Receptor D2 (DRD2) Gene in Thai Native Chicken	Princess of Naradhiwas University
31.	AS13	Jennielyn Anak Jendy	Antibacterial Activity of Ivory Snail (<i>Babylonia areolate</i>) Extractions against <i>Aeromonas hydrophila</i> and <i>Streptococcus agalactiae</i>	Universiti Malaysia Kelantan
32.	AS14	Moh Ihsan Zain	Evaluation of Coconut Leaf Silage as an Alternative Feedstuff Forage for Ruminants	Universitas Gadjah Mada
33.	FS01	Romalee Chedoloh	Types and Source of Velvet Tamarind on Physical and Chemical Properties	Universiti Malaysia Kelantan
34.	FS02	Syeda Anjum Mobeen	The Challenges of Food Security: A Comprehensive Study on Safety, Sustainability, Transforming Food Systems and Machine Learning Based Approaches	Yogi Vemana University
35.	FS04	Nurul Athirah Binti Mohd Zuki @ Rosli	Effect of Salts, and Protease in Protein Hydrolysis of Black Soldier Fly Larvae (<i>Hermetia illucens</i>)	Universiti Malaysia Kelantan
36.	FS10	Muhammad Hanif Bin Rosdi	Texture of High-Pressure Cooking Toli Shad (<i>Tenuulosa toli</i>) Fish Marinated with Velvet Tamarind Paste	Universiti Malaysia Kelantan
37.	PD01	Chan Ke Xin	Total Phenolic Content of Stingless Bee Honey with Treated Cornsilk Extract	Universiti Malaysia Kelantan
38.	*PD02	Nurul Fadzlin Binti Ab Llah	Antimicrobial Activities and Total Yield of Potential Natural Preservatives Extracted using Different Solvents	Universiti Malaysia Kelantan
39.	PD03	Shahirah Binti Ahamad	Optimization of Watermelon Rind Extraction Conditions by Sonication Extraction	Universiti Malaysia Kelantan
40.	PD04	Nur Solehin Bin Sulaiman	Optimization of Extraction Conditions of Ultrasonic-Assisted Extraction (UAE) Technique for the Analysis of Antioxidant in <i>Solanum lycopersicum</i>	Universiti Malaysia Kelantan
41.	PD05	Nurul Amira Binti Zainurin	Total Phenolic and Flavonoid Content and Chemical Profiling using GCMS of <i>Cocos nucifera</i> Sap (CNS) and its Extract	Universiti Malaysia Kelantan

- | | | | | |
|-----|-------|----------------------------------|--|---|
| 42. | *PD06 | Nagarjuna Reddy
Vendidandala | Effect of Galliccatechin-Silver Nanoparticles Impregnated Cotton Gauze Dressing on Normal and Diabetic Wound Healing Rat Model | Universiti
Malaysia
Kelantan |
| 43. | PD07 | Huda Binti Awang | Optimization of Turbidity Removal from Groundwater using Nanomagnetic Adsorbent Composite | Universiti
Malaysia
Kelantan |
| 44. | PD08 | Nor Asfaliza Abdullah | The Efficiency of Dry Leaf-Based Biocarbon for Ammonia Removal in Aquaculture Wastewater | Universiti
Malaysia
Kelantan |
| 45. | PD09 | Erman Shah Jaios | Inhibition of Pro-Inflammatory Mediators by Methanolic Extract of <i>Opuntia monacantha</i> (Cactaceae) in Raw 264.7 Macrophages Cells | Universiti
Haw. Malaysia
Kelantan |
| 46. | *PD10 | Muhammad Irfan Bin
Jalalludin | Utilization of Spent Mushroom Blocks and Vegetables Waste as Fish Feed to Reduce Wastage in Kelantan Community | Universiti
Malaysia
Kelantan |
| 47. | PD11 | Nursyafiqah Binti Shafie | Production of Gelable Exopolysaccharides from <i>Agrobacteria</i> sp. | Universiti
Malaysia
Kelantan |
| 48. | PD12 | Noramalina Binti
Abdullah | Phytochemical Analysis of <i>Piper sarmentosum</i> Leaves Extract | Universiti
Malaysia
Kelantan |
| 49. | PD13 | Arni Binti Mansor | Isolation and Morphological Characteristics of Acetic Acid Bacteria (AAB) from Dokong (<i>Lansium domesticum</i>) and Rambutan (<i>Nephelium lappaceum</i>) Vinegars | Universiti
Malaysia
Kelantan |

The extended abstract for each participant can be found and coded according to the theme, except those with an asterisk*.