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**UPM**  
UNIVERSITI PUTRA MALAYSIA  
BERSILU BERSAMA

**Kampus  
Bintulu  
Sarawak**



# Programme Book



**THEME:**

**"ADVANCEMENT OF IR 4.0 FOR AGRICULTURE  
SUSTAINABILITY AND FOOD SECURITY"**

**8<sup>TH</sup> JULY - 10<sup>TH</sup> AUGUST 2021**

Sponsored by:



AGRICULTURE • INNOVATION • LIFE



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## ABOUT THE CONVENTION

Department of Science and Technology, Faculty of Humanities, Management and Science, Universiti Putra Malaysia Bintulu Campus (UPMKB) together with the Malaysian Society of Agricultural and Food Engineer (MSAE) proudly presents the 7th Agricultural Engineering Annual Regional Convention 2021 (7th ARC2021).

This program could build a network of institutions, industry and society at the national and international levels. The participants are undergraduate students, postgraduate students and academics from several countries such as Malaysia, Indonesia, Thailand, Philippines, Brunei and Nepal.

This annual convention provides a platform for students in ASIA countries namely from Malaysia, Indonesia, Thailand, Philippines and Brunei; particularly students in the field of agricultural engineering or technology to share learning outcomes in class to solve problems in agriculture and food engineering. It also aim to promote the name of Universiti Putra Malaysia (UPM) in general and UPMKB in particular to the local and international community. The convention can also create industry and community networks at the international level.

This year activity is a fully online competition with the following categories: Poster, Research Output Video and Model Construction Video.

**THEME**

*"Advancement of IR 4.0  
for Agriculture  
Sustainability and Food  
Security".*

**SUB-THEMES**

- AGRICULTURAL ENGINEERING
- FOOD ENGINEERING
- BIOTECHNOLOGY
- GREEN TECHNOLOGY
- AGRICULTURAL WASTE MANAGEMENT

## FOREWORD BY CAMPUS DIRECTOR

Welcome to Universiti Putra Malaysia Bintulu Sarawak Campus, and welcome to the 7th Agricultural Engineering Student Chapter Annual Regional Convention 2021 (ARC2021).

I would like to extend my warm congratulations for the closing of this Convention and best wishes to all attendants for a successful event.

This international convention serves as a good platform for undergraduates, postgraduates as well as young researchers in several countries namely from Malaysia, Indonesia, Thailand, Philippines, Brunei and Nepal to share and explore related research work and innovations particularly in the field of Agricultural Engineering or Technology. The main focus of this convention is on five sub-themes of Agricultural Engineering, Food Engineering, Biotechnology, Green Technology and Agricultural Waste Management. The well-diversified sub-themes show that the theme of the convention "Advancement of IR 4.0 for Agriculture Sustainability and Food Security" is very much reflected. The sharing session by keynote speakers renowned in their respective fields, Prof. Dr. Abdul Rashid b. Mohamed Shariff, Prof. Sibudjing Kawi and Dr. Yudha Prambudia, is yet another hallmark of this Convention.

To summarise, we hope that we have managed to deliver a very successful Convention. It would be more effective if all of us engage – not just in presenting posters and video – but also by actively participating in the discussion and by taking advantage of the networking opportunities.

I would like to take this opportunity to congratulate the Organizing Committee of ARC2021, especially to the Department of Science and Technology, Faculty of Humanities, Management and Science, Universiti Putra Malaysia Bintulu Campus (UPMKB) together with the Malaysian Society of Agricultural and Food Engineer (MSAE) for their tremendous efforts in bringing this international event to new heights. The fruitful engagement and collaboration among the Universities, Research Institutes, Government and other Institutions during the entire Convention will undoubtedly build the network and promote networking in AE (Agricultural Engineering) both in Malaysia as well as in the international arena.

I sincerely hope you will enjoy today and wish you a very successful Convention.

Thank you.

**Assoc. Prof. Dr. Shahrul Razid Sarbini**  
**Campus Director**  
**Universiti Putra Malaysia Bintulu Sarawak Campus**



## FOREWORD BY CHAIR

Bismillahirrahmanirrahim. Assalamualaikum warahmatullahi wabarakatuh and good day.

A warm welcome to the 7th Agricultural Engineering Student Chapter Annual Regional Convention 2021 (ARC2021). On behalf of the organizing committee of ARC2021, I am very grateful to everyone for their great enthusiasm and cooperation that has made this event a grand success.

This event is proudly organized by the Department of Science and Technology, Faculty of Humanities, Management and Science, Universiti Putra Malaysia Bintulu Campus (UPMKB) in collaboration with the Malaysian Society of Agricultural and Food Engineers (MSAE) from the 8th July 2021 to 10th August 2021. This year's program carries the theme of "Advancement of IR 4.0 for Agriculture Sustainability and Food Security" and it is being conducted virtually due to the current pandemic issue.

This programme had achieved its primary objective in expanding the network of institutions, industry and society at the national and international levels in the field of agricultural and food engineering or technology. Participants range from undergraduate and postgraduate students as well as academicians from several countries; namely Malaysia, Indonesia, Thailand, Philippines, Brunei and Nepal with a total number of 171 registered teams. ARC2021's team was also truly overwhelmed with the total number of 213 competition outputs received which are from 149 posters, 33 research output videos and 31 model construction videos. The outcomes of this convention are significantly suit five sub-themes designated for ARC2021; Agricultural Engineering, Food Engineering, Bio-Technology, Green Technology and Agricultural Waste Management. Furthermore, this program also had received 41 extended abstracts which will be considered for publication in ARC2021 e-proceeding with e-ISBN provided by the National Library of Malaysia. These outputs had been evaluated by the local and international judges from diverse countries such as Malaysia, Indonesia, Philippines, Australia, Iraq (list will be finalised soon).

In addition, we would like to extend my heartfelt congratulations to all the winners who deserved to receive a medal or medals from your participation. You are the champions!! As the saying goes, "We need to act and embrace uncertainty as a pool of opportunity". Furthermore, the sharing session by 3 keynote speakers prominent in their respective fields; Prof. Sr. Gs. Dr. Abdul Rashid b. Mohamed Shariff from Malaysia, Prof. Sibudjing Kawi from Singapore and Associate Prof. Dr. Yudha Prambudia from Indonesia, is also another great highlight of this convention. Hopefully, their sharing could help us in nurturing our interest in agriculture sustainability and food security in the ever-evolving IR. 4.0 era.

In addition, we are also indebted to Proville Tech Sdn. Bhd and Business Event Sarawak (BES) for being the main sponsors of this event. As sponsorship is the key to ensuring the success of an event, you made our event a huge success.

In conclusion, we are hoping that we have managed to organize a very successful convention. Hope to see you again and continue to enhance the networking opportunities in the future. With knowledge, We Serve!  
Thank you.

**Gs. Dr. Wan Nor Zanariah Zainol @ Abdullah**  
**Chair**  
**7th Agricultural Engineering Student Chapter Annual**  
**Regional Convention 2021 (ARC2021).**



## ORGANIZING COMMITTEE (1 of 2)

### Patron

Assoc. Prof. Dr. Shahrul Razid Sarbini  
(Campus Director, Universiti Putra Malaysia Bintulu Campus)

### Advisor

Assoc. Prof. Dr. Mohamad Maulana Bin Magiman  
(Dean, Faculty of Humanities, Management and Science)  
Prof. Ts. Dr. Rosnah Shamsudin  
(President of MSAE)

### Chairman

Dr. Wan Nor Zanariah Zainol @ Abdullah  
(Club Advisor, MSAE-SC Universiti Putra Malaysia Bintulu Campus)

### Co-Chairman

Ir. Mohd Fazly bin Mail (MSAE)

### Student Committee

Mr. Mohammad Solehin b. Rozaini  
Mr. Wazif Akmal b. Hassdi

### Deputy Chairman

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(Head of Department, Department of Science and Engineering)  
Dr. Mohd Nazren b. Radzuan (MSAE)

### Secretary

Dr. Nurul Nadwa bt. Zulkifli  
Dr. Zainun bt. Mohd Shafie (MSAE)

### Student Committee

Barbara Heather Anak Mefiau  
Nur Khairunnisa bt. Mohd Kamaruzaman

### Treasurer

Dr. Nor Hanifawati bt. Inai  
Mr. Zamzuri Zabidin (MSAE)

### Student Committee

Jamie Lazaroo  
Sarah bt. Ja'afar

### Secretariat

Dr. Omar Faruqi b. Marzuki  
Dr. Azizul Hakim b. Lahuri  
Dr. Muhammad Hazwan b. Hamzah (MSAE)

### Student Committee

Engku Muhammad Adil b. Engku Omar  
Amiruddin Nabilla Wasfa bt. Saifuddin  
Logeswary A/P Muniandy  
Farisha Athirah bt. Rosman

## ORGANIZING COMMITTEE (2 of 2)

### Activity & Competition

Dr. Nozieana bt. Khairuddin  
Dr. Ellie Teo Yi Lih  
Dr. Suziana bt. Hassan  
Dr. Mohd Hamim Abdul Aziz

### Student Committee

Muhammad Sobri b. Merais  
Nurul Husna bt. Che Hamzah  
Nor Shafinaz bt. Azman  
Nur Afiqah bt. Ali  
Siti Zul Lailee bt. Kamsan  
Siti Khadijah bt. Mohd Amin  
Nur Nadia Najwa bt. Mat Nazer  
Muhammad Aidil b. Anuar  
Muhammad Iqbal Nul Hakim b. Mohamad Sazali

### Publicity & Sponsorship

Mdm. Azira bt. Sanusi  
Mr. Mohamad Zulkipli b. Saali  
Mdm. Dayang Ratnawati bt. Tamam  
Mdm. Asiah bt. Kawi  
Mr. Mohd. Shahrul Nizam b. Ab. Jafar  
Mr. Zulfikaruddin b. Saali

### Student Committee

Muhammad Syahmi Asyraaf b. Musa  
Baerazo Degocubusier Anak Rahynold Rehengia  
Hafiz b. Azhar

### Publication

Dr. Juniza bt. Md Saad  
Mr. Nathaniel Woon Wai Cheong  
(UPMKB)

### Student Committee

Muhammad Nur Hakimi b. Azim Shah  
Jaccob Jimmy  
Priscilla Surie Anak Satap

### Certificate & Souvenirs

Dr. Azizul Hakim b. Lahuri  
Dr. Tengku Sharifah Marliza bt. Tg Azmi  
Mrs. Amalina bt. Amel  
Mrs. Fatin Khairunisa bt. Mohamad Safri  
(UPMKB)

### Student Committee

Yari Estadaniel b. Sokyen  
Stephanie Punyang Tommy  
Muhammad Othman b. Zakaria

### ICT & Multimedia

Dr. Rosli b. Ismail  
Mr. Abdul Mohammad b. Omar  
Mr. Fazlizan b. Yakop  
Mr. Roslan b. Ismail  
Mdm. Dawiyah binti Abri  
Mr. Benedict Anak Miden  
Mr. Muhammad Iqbal Hidayat Bin Brawi  
Mdm. Siti Syazwina Mohd Yusof

### Student Committee

Aus Mohammad Danish bin Mohd Ahya



## KEYNOTE SPEAKERS (1 of 3)



### **PROFESSOR SR. GS. DR. ABDUL RASHID BIN MOHAMED SHARIFF**

Faculty of Engineering, UPM

**Topic:**

**Precision Agriculture as a Growth Catalyst in Rebuilding a Pandemic Hit Nation.**

Abdul Rashid Bin Mohamed Shariff is a professor in precision farming with expertise in spatial information science and engineering. He holds a PhD in Spatial Information Science and Engineering from the University of Maine, USA, a Masters in Cadastre and Land Information Management from the University of East London, UK and a Bachelors in Land Surveying from the University of Technology Malaysia (UTM). He helped catalyze the precision farming research and teaching at UPM and was one of the national consultants in Malaysia's first national paddy precision farming project in 2001.

He is a fellow and life member of Malaysian Society of Agricultural and Food Engineers (MSAE), a chartered agricultural engineer with the Institution of Agricultural Engineers, UK (IAgrE), a member of the American Society of Agricultural and Biological Engineers (ASABE), a member of the Royal Institution of Surveyors Malaysia (RISM), current president and fellow of the Institution of Geospatial and Remote Sensing Malaysia (IGRSM) and a member of the international Asia-Rice crop estimation and monitoring team. Prof Rashid was an Erasmus Mundus recipient which sponsored his research/teaching in Germany, and Endeavour Award recipient which sponsored his research in Australia and received invitational awards for attachments in Japan, Hong Kong, and Denmark. He has a Scopus H-index of 20 and was awarded the Top Research Scientist Malaysia Award in 2018.

**KEYNOTE SPEAKERS** (2 of 3)**PROF. SIBUDJING KAWI**

National University of Singapore

**Topic:****Catalyst Development for Agricultural Biomass Waste Conversion to Syngas/ Hydrogen**

Professor Sibudjing Kawi joined the Department of Chemical and Biomolecular Engineering, National University of Singapore (NUS) in 1994. Publishing more than >300 international peer-reviewed journal articles with H index = 66, 5 patents, 1 book, 3 book chapters, edited 10 special issues (as a Guest Editor of ChemCatChem, Catalysis Today, Industrial & Engineering Chemistry Research, Journal of CO<sub>2</sub> Utilization, Reaction Chemistry & Engineering, Environmental Science & Pollution Research, Topics in Catalysis, Catalysts) and presented several Plenary / Keynote Lectures at international conferences.

For the past decade, Prof. Kawi has focused his research on the design and synthesis of nano-catalysts for green and sustainable applications such as biomass conversion, CO<sub>2</sub> mitigation and utilisation, light hydrocarbon conversions, water gas shift reactions and integrated catalytic membrane reactors. He received the Long Service Medal award during Singapore National Day Awards 2020 for his longstanding service to NUS and the Department of Chemical & Biomolecular Engineering.

**KEYNOTE SPEAKERS** (3 of 3)**DR. YUDHA PRAMBUDIA**

Telkom University, Indonesia

**Topic:****Adoption of Agricultural Service Platform for Sustainable Village Development**

Dr. Yudha Prambudia is a senior lecturer in Industrial and System Engineering Faculty, Telkom University. His research speciality is in Sustainable Supply Chain. He holds a PhD in Systems Engineering from Keio University, Japan, a Master degree in Geo-Information Science for Urban Infrastructure from Twente University, the Netherlands, and Bachelor from National Institute of Technology, Indonesia. He is an engineer by training. He applies his engineering proficiency to address not only technical issues, but also socio-technical issues in industrial and business contexts. In 2002, he was part of the national initiative on digital mapping of rural economic potential. Also, he was part of the National Sumba Iconic Island program which helped to improve adoption of renewable energy technology for economic livelihood of rural areas in East Nusa Tenggara Province.

He was awarded grants from the Global Center of Excellence (GCOE) Program Japan, Atsumi Foundation Japan, and active as country partners of researches sponsored by Engineering and Physical Science Research Council (EPSRC) and Global Challenges Research Fund (GCRF) UK, on energy technology for rural communities. He is a senior fellow of Resilience and Development Initiatives (RDI), an international research institute focusing on sustainable and resilient development, especially in rural areas. His current research is within the theme of improving agricultural products supply chain sustainability through ICT adoption with a grant from Ministry of Education, Indonesia.

# PROGRAMME

**10<sup>th</sup> August 2021 (Tuesday), Venue: Webex Platform (Meeting number: 158 164 0235, Password: ARC2021)**

Time	Tentative												
9.00- 9.40 a.m	Recite prayer MSAE speech by MSAE President: Prof. Ts. Dr. Rosnah Shamsudin VVIP speech by Campus Director, UPMKB, Assoc. Prof. Dr. Shahrul Razid Sarbini												
9.40-10.40 a.m	<b>Keynote Session 1</b> Chairperson: Prof. Ts. Dr. Rosnah Shamsudin <ol style="list-style-type: none"> <li><b>Prof. Gs. Sr. Dr. Abdul Rashid Mohamed Shariff (Universiti Putra Malaysia)</b> Keynote Lecture: Precision agriculture as a growth catalyst in rebuilding a pandemic hit nation</li> <li><b>Prof. Sibudjing Kawi (National University of Singapore)</b> Keynote Lecture: Catalyst development for agricultural biomass waste conversion to syngas/ hydrogen</li> </ol>												
10.40-11.00 a.m	<b>Poster Award Award Announcement (Gold, Silver, Bronze, Favorite (Most Likes and Share)) for categories:</b> <table border="0"> <tr> <td>a) Agricultural Engineering</td> <td>d) Green Technology</td> </tr> <tr> <td>b) Food Engineering</td> <td>e) Agricultural Waste Management</td> </tr> <tr> <td>c) Biotechnology</td> <td></td> </tr> </table> Announcer: Dr. Muhammad Hazwan Hamzah	a) Agricultural Engineering	d) Green Technology	b) Food Engineering	e) Agricultural Waste Management	c) Biotechnology							
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c) Biotechnology													
11.00 a.m-12.00 p.m	<b>Keynote Session 2</b> Chairperson : Dr. Wong Sie Chuong <ol style="list-style-type: none"> <li><b>Assoc. Prof. Dr. Yudha Prambudia (Telkom University, Indonesia)</b> Keynote Lecture: Adoption of Agricultural Service Platform for Sustainable Village Development</li> <li><b>Dr. Mohd Nazren Radzuan (MSAE/ Universiti Putra Malaysia)</b> Keynote Lecture: The future for agricultural and food profession: Trends and challenges</li> </ol>												
12.00-12.20 p.m	<b>Research Output Video Award Announcement (Gold, Silver, Bronze, Favorite (Most Likes and Share)) for categories:</b> <table border="0"> <tr> <td>a) Agricultural Engineering</td> <td>d) Green Technology</td> </tr> <tr> <td>b) Food Engineering</td> <td>e) Agricultural Waste Management</td> </tr> <tr> <td>c) Biotechnology</td> <td></td> </tr> </table> Announcer: Dr. Zainun Mohd. Shafie	a) Agricultural Engineering	d) Green Technology	b) Food Engineering	e) Agricultural Waste Management	c) Biotechnology							
a) Agricultural Engineering	d) Green Technology												
b) Food Engineering	e) Agricultural Waste Management												
c) Biotechnology													
12.20-12.50 p.m	<b>Invited Speaker</b> Chairperson: Dr. Suziana Hassan <ol style="list-style-type: none"> <li><b>Proville Tech. Sdn. Bhd.</b></li> <li><b>Business Event Sarawak (BESarawak)</b></li> </ol>												
12.50-1.10 p.m	<b>Model Construction Video Award Announcement (Gold, Silver, Bronze, Favorite (Most Likes and Share)) for categories:</b> <table border="0"> <tr> <td>a) Agricultural Engineering</td> <td>d) Green Technology</td> </tr> <tr> <td>b) Food Engineering</td> <td>e) Agricultural Waste Management</td> </tr> <tr> <td>c) Biotechnology</td> <td></td> </tr> </table> Announcer: Dr. Nor Hanifawati Inai <b>Best Paper Award (Gold, Silver, Bronze) for categories:</b> <table border="0"> <tr> <td>a) Agricultural Engineering</td> <td>d) Green Technology</td> </tr> <tr> <td>b) Food Engineering</td> <td>e) Agricultural Waste Management</td> </tr> <tr> <td>c) Biotechnology</td> <td></td> </tr> </table> Announcer: Dr. Juniza Md Saad	a) Agricultural Engineering	d) Green Technology	b) Food Engineering	e) Agricultural Waste Management	c) Biotechnology		a) Agricultural Engineering	d) Green Technology	b) Food Engineering	e) Agricultural Waste Management	c) Biotechnology	
a) Agricultural Engineering	d) Green Technology												
b) Food Engineering	e) Agricultural Waste Management												
c) Biotechnology													
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b) Food Engineering	e) Agricultural Waste Management												
c) Biotechnology													
1.10-1.25 p.m	<b>Closing ceremony by Chairman for announcing next ARC host</b>												
1.25-1.30 p.m	Reminder E-Certificate distribution Publication dateline												

# LIST OF PARTICIPANTS

## ARC2021 COMPETITION

### Poster competition

#### Sub-themes:

a. Agricultural Engineering

<p><b>The Vertical Farming Model: A Sustainable Putra Green Community Outreach Project</b> Dr. Diyana binti Jamaludin, Dr. Muhammad Hazwan bin Hamzah, Tenny Kubu, Nur Khairunhazwani Zamri, Jeremiah Balang Sang <i>MSAE-SC UPM Serdang</i></p>	<p><b>CHANGES IN TURBIDITY AND pH OF WHITE PEPPER RETTING WASTEWATER INDUCED BY THE ELECTRO-COAGULATION PROCESS</b> Rosnah Shamsudin, Hasfalina Che Man, Puteri Nurain binti Megat Ahmad Azman, <i>MSAE-SC UPM Serdang</i></p>
<p><b>Effect of Different Drying Temperature and Powder Size on Flowability Characteristics of <i>Azolla pinnata</i></b> Rosnah Shamsudin, Susilawati Kassim, Nor Aziatul Azidah Binti Azhari <i>MSAE-SC UPM Serdang</i></p>	<p><b>Identify the Shape of the Avocado (<i>Persea americana</i> mill) with the Processing of Digital Image</b> Ifmalinda, Dinah Cherie, Lii Shaufana, Reza Juni, Artika, Rizka Putri Indramora Nasution <i>ANDALAS</i></p>
<p><b>Image Processing Algorithm Development in Tractor Obstacle Detection using Green Laser Pointer</b> Renny Eka Putri, S. TP, MP, Ph. D, Irriwad Putri, S. TP, M. Si, Vindo Rahman, Chindy Mayori A <i>ANDALAS</i></p>	<p><b>Utilization of Landsat 8 Imagery for Vegetation Index Analysis in the Context of Determining Green Open Space in Padang City</b> Eri Gas Ekaputra, Ayendra Asmuti, Bayu, Pamungkas <i>ANDALAS</i></p>
<p><b>Automatic Plant Watering System Using IoT and Android</b> Ts. Dr. Zainah Binti Md. Zain, Dr. Norhafizah Binti Md. Zain, Nur Hidayatul Ain Binti Che Azman, Ma Xian Xi, Ling Kuok Fong <i>UMP</i></p>	<p><b>RICE CROP MONITORING USING NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI)</b> Dr Nik Norasma Che' Ya, Dr Wan Fazilah Fazlil Ilahi, Nursyazyla Binti Sulaiman, Rhushalshafira Rosle, Rowena Binti Mat Halip <i>UPM</i></p>
<p><b>Innovation of Sago (<i>Metroxylon</i> sp.) Starch Maltodextrin as a Coating Material In Microencapsulation of Red Fruit (<i>Pandanus conoideus</i> L.) Oil</b> Dr. Zita L. Sarungallo, S.TP., M.Si., Rahel Levina, Winda Sari Sirait, Monica Jupiter Arung Padang, <i>PAPUA U</i></p>	<p><b>PHYTOCHEMICAL AND ANTIOXIDANT ACTIVITY OF KEBAR GRASS (<i>Biophytum petersianum</i>) LEAF WATER EXTRACT FROM INFUSION AND DECOCTION METHODS</b> Dr. Meike Meilan. Lisangan, S.P., M.Si, Ir. Gino N. Cepeda, M.Si, Novelia Hendrina Rumansara, Gabriela W Rumadas. Barahama, <i>PAPUA U</i></p>
<p><b>Ipomoea Aquatica Floating Bed for Water Eutrophication Control</b> Ts Dr Roslaili Binti Abdul Aziz, Chong Siew Hong, Kong Ming Jun, Lee Yi Jie, <i>MSAE-SC UNIMAP</i></p>	<p><b>Characteristics of Corn Starch Edible Film with Variation of Zinc Okside (ZnO) Nanoparticle</b> Ifmalinda, Dinah Cherie, Siti Azzahra Kurnia, Sri Wahyuni, Khoirunnisa S. <i>ANDALAS</i></p>
<p><b>Evaluation of Operational Performance and Maintenance of Mount Nago Irrigation (Tertier Plot Highway) Badenah II, Padang City</b> Dinah Cherie, Ifmalinda, Refita Mayasari <i>ANDALAS</i></p>	<p><b>VEGIBLE Vegetable Vending Machine Equipped by Modified Atmosphere Packaging (MAP) for Longer Shelf Life and Ease of Accessibility for BSD Modern Market, Tangerang</b> Zaqlul Iqbal, M.Si, Agustania Sabtagiza Wardhani, Afizha Nursabila, Arahmadiana Estuwilujeng <i>BRAWI U</i></p>
<p><b>Convolutional Neural Network for Classifying Tempe Quality</b> Yusuf Hendrawan, STP., M.App.Life.Sc., Ph.D, Riris Waladatun Nafi'ah, Bram Yos Agustinus, Verianti Liana <i>BRAWI U</i></p>	<p><b>Farm Security System Against Invasive Animals</b> Dr Muhammad Firdaus bin Abdul Muttalib, Dang Suria Binti Osman, Azwatul Huda Binti Mahdi, Samuel Lai Kai Peng <i>UNIMAP</i></p>

<p><b>Paddy Straw Fire Controlling System</b> Dr Muhammad Firdaus bin Abdul Muttalib, Muhamad Aiman Bin Khairul, Haida Shahira Bt Hariri Rizal, Sriviyasnee A/P Kandasamy <i>UNIMAP</i></p>	<p><b>Development of the Automated Fertigation Control System using Mobile Apps</b> Nik Norasma Che'Ya, Wan Fazilah Fazlil Ilahi, Nur Adibah Binti Mohidem, Fakhru Azran Bin Naw <i>UPM</i></p>
<p><b>CHILI GROWTH PERFORMANCE USING SMART SENSING TECHNIQUE IN GREENHOUSE ENVIRONMENT FOR URBAN FARMING</b> Dr Wan Fazilah Fazlil Ilahi, Dr Nik Norasma Che'Ya, Nur Adibah Binti Mohidem, Mohd Amir Sabrin Bin Zamri, Muhammad Irfan Bin Ab Rahman <i>UPM</i></p>	<p><b>Bacterial Blight, Septorial Blight, and Healthy Soybean Classification Based On Convolutional Neural Networks (CNN) Rapid Detection</b> Yusuf Hendrawan STP., MApp.Life.Sc Ph.D, Rabiah Musfira Al Atiffa, Bagas Rohmatulloh, Roy Ardy Colas Napitupulu <i>BRAWI U</i></p>
<p><b>THE DEVELOPMENT OF RECORDING SYSTEM ON THE COLLECTION OF FRESH FRUIT BUNCH FOR UPSTREAM PURPOSES</b> Samihah Mustaffha, Mohamad Syahrizan Ahmad Gaman <i>UITM</i></p>	<p><b>"THE SEMIC VESHER" Semi-Mechanical Vegetable Washer (Solution for your Hygenic Vegetables)</b> Ir. I Wayan Tika, M.P., I Putu Gede Budisanjaya, S.TP., MT., Kevin Osda Sianipar, Luh Wiwin Pradnya Dewi, I Made Maha Wira Pendit <i>UDAYANA U</i></p>
<p><b>Horticultural Post Harvest Product Sterilization Using UV-C Lamp</b> Ni Nyoman Sulastrri, S.TP., M.Agr., Ph.D, I Putu Arya Patrama Khrisna Putra, I Kadek Agus Widhiartana, Arya Maulana <i>UDAYANA U</i></p>	<p><b>Study of baby carrots planting by using Aeroponic system</b> Assistant Professor Dr.Tawarat Treeamuk, Mr.Keeratinan Khemthong, Mr.Chanayut Chuayphoklang, Mr.Jeerawat Sookdee <i>SURANAREE U</i></p>
<p><b>GROUND BASED HYPERPSCETRAL REMOTE SENSING FOR SPECTRAL SIGNATURE IDENTIFICATION OF WEEDS SPECIES IN RICE CROP</b> Dr. Nik Norasma Che Ya, Dr. Muhammad Huzaifah Mohd Roslim, Nursyazyla Binti Sulaiman, Syarifah Noor Irma Suryani Binti Syd Ahmad, Zaid Bin Ramli <i>UPM</i></p>	<p><b>Urban Agriculture: Fish Farming Business Prototype</b> Dr. Wong Sie Chuong, Nurmuhhammad Aqil Bin Hanafiah, Muhammad Ilham Bin Jaidin, Am Asfarina Binti Raes <i>MSAE-SC UPM Bintulu</i></p>
<p><b>SENSOR TO DETERMINE HOW RIPE THE FRUITS AND THE RIGHT TIME TO HARVERST</b> Dr. Wong Tze Jin, Dr. Ellie Teo Yi Lih, Loh Yi Shen, Muhammad Aqil Bin Mohd Yazid, Am Absarina Binti Azni Raes <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Potential of Artificial Neural Network as Non Destructive Prediction of Piperin in Cabya (Piper retrofractum vahl.) Based on Color and Texture Analysis</b> Yusuf Hendrawan, STP, M.App.Life.Sc., Ph.D, Maureen Natalia Lee, Rafii Priadji Megatama, <i>BRAWI U</i></p>
<p><b>Analysis of Robusta Coffee Beans Inventory Control as Raw Material for Ground Coffee Using Genetic Algorithm (Case Study in UKM Kopi Bubuk Sido Luhur)</b> Wike Agustin Prima Dania, Danang Triagus Setiawan, Hannah Nur Azzahrah <i>BRAWI U</i></p>	<p><b>Processing Unit Design of Handycraft Paper from Areca Nut (Areca catechu L.) Waste and Used HVS Paper on Small Industry Scale</b> Ika Atsari Dewi, STP., MP, Hendrix Yulis Setyawan, STP., M.Si., P.hD, Erina Permata Puteri Yuscandra, Sholahuddin Al Ayyubi <i>BRAWI U</i></p>
<p><b>Development of Weed Detetction using Hyperspectral Data</b> Dr. Nurashikin Kemat, Dr. Nik Norasma Binti Che'Ya, Syaz Wana Suid <i>UPM</i></p>	<p><b>Portable Poultry Automatic Feeder</b> Mahirah Binti Jahari, Muhammad Hakimi Bin Razali, Syahir Shahibullah, Nurul Najihah Binti Yusof <i>MSAE-SC UPM Serdang</i></p>
<p><b>Monitoring and Controlling of Vertical Farming System using Internet of Things (IoT)</b> Renny eka putri, Andasuryani, Jimmy Aprilio, Moh. Jalik Ardli Wibowo <i>ANDALAS</i></p>	<p><b>Development of Smart Hydroponic System with IoT and Big Data Approach</b> Andri Prima Nugroho, Ph.D., Muhammad Affan Fajar Falah, Ph.D. Ardan Jaenuri, Damar Abhinawa <i>UGM</i></p>
<p><b>Application of 3D Reconstruction System based on Close-Range Photogrammetry Method for Growth Estimation of Chinese Cabbage (Brassica pekinensis L.)</b> Andri Prima Nugroho, Ph.D., Prof. Lilik Sutiarmo, Ardyan Widyanto Putro, Rievaldy Albyan, Pradnya Umaradani, <i>UGM</i></p>	<p><b>Water Saving Technology for Supporting the System of Rice Intensification</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum, Rido Saputra S2, Muhammad Salman Ibnu Chaer S2, Guyup Mahardian DP, <i>UGM</i></p>
<p><b>Development of Canal Gauge Monitoring System Based on Computer Vision Technology</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum, Lukas Wiku Kuswidiyanto, Galih Wisnu, <i>UGM</i></p>	<p><b>Prototype Model of Omni-wheeled Tractor to Reduce Unnecessary Movement</b> Makbul Hajad, S.T.P., M.Eng., Ph.D., Dr. Radi, S.TP., M.Eng., Evita Nugroho, Eka Riskawati, RR. Yohana Wintan Pangesti, <i>UGM</i></p>

<p><b>Sonic Bloom Method for Cocoa Growth (Theobroma Cacao L.)</b> Siti Mariyam , S.T.P., M.Sc, Bayu Dwi Apri Nugroho, S.T.P., M.Agr., Ph.D., Vincentius Ferry, Izzatun Nisa Asyahidah, Riski Sri Mahanani UGM</p>	<p><b>GIS Based Vegetation Landscape Modelling for Conservative Agriculture Under Tropical Environment</b> Chandra Setyawan, STP., M.Eng., Ph.D, Dr. Radi, S.TP., M.Eng., Jaromansen Damanik, Patrick Gani, Brigitta Ery Septiyanti UGM</p>
<p><b>Automatic Leaf Spot Disease Examiner using Computer Vision Technology</b> Andri Prima Nugroho, Ph.D., Muhammad Affan Fajar Falah, Ph.D., Muhammad Arif Ihsanudin, Nizar Maulana Malik, Vadiya Ricqy Viardana UGM</p>	<p><b>Classification of Cocoa Beans Based on Fermentation Level using Partial Least-Squares Discriminant Analysis (PLS-DA) Combined with Visible Near-infrared (VIS-NIR) Spectroscopy</b> Rudiati Evi Masithoh, Arifin Dwi Saputro, Deny Saputro, Dede Cahyo Priambodo UGM</p>
<p><b>Development of Portable Low-priced Visible/near-infrared Reflectance Spectrometer to Distinguish Cacao Beans from Different Regions</b> Rudiati Evi Masithoh, Arifin Dwi Saputro, Tio Farros Atalla, Tiana Nur Annisa UGM</p>	<p><b>Three-Dimensional (3D) Reconstruction of Plant using Close Range Photogrammetry for Leaf Type Variations</b> Andri Prima Nugroho, Ph.D., Prof. Lilik Sutiarso, Diaz Habib Dananta, Wilda Monicha Mukti, Diah Nur Rahmi UGM</p>
<p><b>Development of Quantitative Assessment Model for Critical Watershed Detection</b> Chandra Setyawan, STP., M.Eng., Ph.D., Dr. Ngadisih, Raden Ferian Leo Mahendrasta, Abdur Rahman Khidzir, Hania Intan Saputri UGM</p>	<p><b>Development of an Intelligence Traceability System for Sustainable of Indonesian Cocoa Industry</b> Aryanis Mutia Zahra, S.TP., M.Si, Siti Mariyam , S.T.P., M.Sc, Rizky Dian Ramadhan, Diza Rizky, Naufal Helmi Yumnanda, UGM</p>
<p><b>Tamanu Oil Production using Screw-processed Method</b> Dr. Joko Nugroho Wahyu Karyadi, Makbul Hajad, S.T.P., M.Eng., Ph.D., Linggar Setianingrum, Dhyas Tanjung Prabowo Putri, Haryo Prasetyo Adi Andoyo, UGM</p>	<p><b>Evaluation of Rice Transplanter for "Tapak Macan" Cropping Pattern</b> Dr. Radi, S.TP., M.Eng., Prof. Bambang Purwantana, Alfitra Widya Yubastama, Gigieh Henggar Jaya, Rafli Syaiful Fatah UGM</p>
<p><b>Application of Machine Learning for Land-use Change Identification to Determine Regional Self-sufficiency</b> Ansita Gupitakingkin Pradipta, S.T., M.Eng., Dr. Ngadisih, Bangkit Fatwa Pratama, Liana Ni'mathus Sholikah, Zulfa Khoirun Nisa UGM</p>	<p><b>Development of Laser-based Infiltrometer for Estimating the Percolation Phenomena in Irrigation Modernization</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum, Gabriel Dida, Rega Arya, Ulfa Dwi Oktasari UGM</p>
<p><b>Development of Precise Measurement of Water Percolation Inside the Infiltrometer for Supporting Plant Water Requirement Analysis</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum, Gabriel Dida, Rega Arya, Ulfa Dwi Oktasari UGM</p>	<p><b>Early Warning System using Change Point Analysis to Detect Climate Anomalies in Growth Chamber</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum, Rido Saputra, Muhammad Salman Ibnu Chaer, Guyup Mahardian DP UGM</p>

## b. Food Engineering

<p><b>Biodegradable Food Packaging</b> Dr. Tengku Sharifah Marliza Binti Tengku Azmi, Dr. Omar Faruqi Bin Marzuki, Barbara Heather Anak Metiau, Priscilla Surie Anak Satap, Baerazo Degocubusier Anak Rahynold Rehengia MSAE-SC UPM Bintulu</p>	<p><b>APPLICATION OF EDIBLE GINGER COATING ON POSTHARVEST PAPAYA</b> Murni Binti Rahim, Thanas A/L Manimaran, Kumeresen A/L Rajendran, Sulochana A/P Edward Martin PJK</p>
<p><b>Effect of Different Iodized Salt Concentration on Rheological Properties of Euthynnus affinis Surimi</b> Dr. Rozzamri Ashari, Asnawi Bin Shahr, MSAE-SC UPM Serdang</p>	<p><b>The Effect of Centella asiatica (L.) towards Pineapple Powder Antioxidant</b> Norazah Abd Rahman, Syafiza Abd Hashib, Izyani Azman, UITM</p>
<p><b>Drying Kinetics of Laksam and Yellow Noodles</b> Ts. Dr. Muhammad Heikal Ismail, Dr Irwan Syah Md Yusoff, Muhamad Wazif Zakwan Bin Mubarak, Siti Norfatiha Binti Mohammad Ehsan MSAE-SC UPM Serdang</p>	<p><b>An Overview on Vitamin C Content in Dried Pineapple Skin from Infrared Dryer</b> Ts. Habsah Alwi, Hanafiah bin Zainal Abidin, Muhammad Syafiq Bin Ismail UITM</p>

<p><b>Process Development of Food Beads from Grass Jelly</b> Nukrub Narkprasom, Kanjana Narprasom, Artit dujeto, Sippakorn Sawadsukho, Werawat Wongpakdee <i>MAEJO U</i></p>	<p><b>Smart Plant Microbial Fuel Cell (S-PMFC) for Non-Destructive Bioenergy</b> Ts Dr Roslaili Binti Abdul Aziz, Siti Nur Najwa Binti Rosli, Nurul Fatin Nabila Binti Ghazali, Nurhazimah Binti Md Hasmartuah <i>MSAE-SC UniMAP</i></p>
<p><b>Process Development of Balsamic Vinegar from Coffee Pulp with New Method</b> Kanjana Narkprasom, Nukrob Narkprasom, Naruemon Boonmee, Varunya fuangchoom, Atchara Laoprasert <i>MAEJO U</i></p>	<p><b>Investigation on Drying Process of Pineapple Flesh Fibre from Far-infrared Dryer and Review the Effect of Drying to Vitamin C content in Pineapple Flesh</b> Hanafiah Zainal Abidin, Ts. Habsah Alwi, Khairuni Asrini Bt Mohd Karno <i>UiTM</i></p>
<p><b>SOURSOP SNACK</b> Marini Bt Nafi, Muhammad Shahriezman Bin Muhammad Fauzi, Muhammad Izzan Bin Aziz, Nur Alina Binti Rozali <i>PJK</i></p>	<p><b>Total Phenol and Antioxidant Activity of Kebar Grass (<i>Biophytum petersianum</i>) Stem Water Extract from Infusion and Decoction Methods</b> Dr. Meike Meilan Lisangan, SP., M.Si, Ir. Gino Nemesio Cepeda, M.Si, Monica Irma Gurning, Soleman Karayopi <i>PAPUA U</i></p>
<p><b>Recent Analysis In The Use Of Edible Coating Incorporated with Essential Oils For Fruits Preservation</b> Noorsuhana Mohd Yusof, Nurul Asyikin Md Zaki, Noor Azian Binti Azizan, Nur Amalia Binti Ahmad Yazid <i>UiTM</i></p>	<p><b>Electrocoagulation Based Separation Technology for Microplastics in Sea Salt to Attain The Food Safety and SDG No.3</b> Joko Prasetyo, STP, M.Si, Arrahmadiana Estuwilujeng, Melenio Eko Haryono, Citra Divinaura Hadi <i>BRAWI U</i></p>
<p><b>Study on the effects of oil centrifugation of puffed rice product of physicochemical properties</b> Dr.Wanvisa Taweechuensakul, Mr.Phatcharaphong Padthaisong, Miss Thitaporn Duangmanee, Miss Phatthaphon Khatpeang <i>SURANAREE U</i></p>	<p><b>Synthesis of Natural-Based Immunomodulatory Compounds in Lozenges using Wet Granulation Method as an Effort to Realize a Healthy Life</b> Dego Yusa Ali, STP., M.Sc., Adilla 'Aisyah Hana Mu'alim, Wardatul Maulidah <i>BRAWI U</i></p>
<p><b>Optimization of Drying Time and Foam Thickness on the Production of Microwave-Dried Egg White Powder</b> Dr. Ir. Sukardi, MS, Claudia Gadizza Perdani, STP, M.Si, Desy Putri Utami <i>BRAWI U</i></p>	<p><b>Study of the Potential of Clove Essential Oil as Natural Food Preservatives Incorporated With Sodium Alginate Edible Coating on Fresh-cut Pineapple</b> Habsah Binti Alwi, Surianajihha Binti Kamarudin <i>UiTM</i></p>
<p><b>Microwave Encapsulation of Active Compounds from <i>Clitoria ternatea</i> Flower Extract</b> Nurul Asyikin Md Zaki, Nur Qistina Binti Mohamad Kamarul Azman <i>UiTM SHAH ALAM</i></p>	<p><b>Effect of Solvent Concentration on The Physicochemical Properties of Blue Pea Flower Extract</b> Nurul Asyikin Md Zaki, PM Dr. Junaidah Jai, Azrul Hanif Shafie <i>UiTM SHAH ALAM</i></p>
<p><b>Kinetics of Deterioration and Shelf-life Prediction of Ozonated Longan During Cold Storage</b> Dr.Jaturapatr Varith, Dr.Somkiat Jaturonglumert, Saranyapak Chamnan, Narathip Sujinda, Suthathip Wongphansuea <i>MAEJO U</i></p>	<p><b>EXTRACTION OF ANTHOCYANINS FROM THE BLUE PEA FLOWER VIA MICROWAVE TECHNOLOGY</b> Nurul Asyikin Md Zaki, Pm Dr Junaidah Jai, Nurul Atikah Binti Sohibun <i>UiTM SHAH ALAM</i></p>
<p><b>Evaluation of Physicomechanical Properties of Chocolate made from Coconut Oil and Date Syrups</b> Siti Fatimah Ibrahim, Intan Nadhirah Muhammad Shafiq Ong, Tengku Khalis Nur Alia Tengku Rozali, Siti Nabihah Mohd Desa <i>UNIKL</i></p>	<p><b>The Potential in Integration of Detector Technology and Non-Thermal Preservation Based on Fuzzy Logic in Optimizing Home Industry Kombucha Tea Production Process</b> Prof Ir Dr Elok Zubaidah, MP, Jaya Mahar Maligan, STP. MP, Rafii Priadji Megatama, Dimas Maulana Yusuf, Magita Endelita Musdian <i>BRAWI U</i></p>
<p><b>CROP WATER REQUIREMENT OF DURIAN</b> Nik Norasma Che'Ya, Wan Fazilah Fazlil Ilahi, Nur Adibah Binti Mohidem, Fakhrul Azran Bin Nawi <i>UPM</i></p>	<p><b>AWD : Water Conservation using Alternate Wetting and Drying (AWD) in Rice Cultivation</b> Dr Wan Fazilah Fazlil Ilahi, Dr Nik Norasma Che'Ya, Nur Hidayu Abu Hassan, Owen Niexrickzon Anak Thomas Annie <i>UPM</i></p>



<p><b>Development of Geo-tagging system and crop monitoring using aerial imagery</b> Dr Wan Fazilah Fazil Ilahi, Dr Nik Norasma Che'Ya, Nur Adibah Binti Mohidem, Mohd Amir Sabrin Bin Zamri, Muhammad Irfan Bin Ab Rahman <i>UPM</i></p>	<p><b>Nutritious Gummy with High Protein Pigeon Pea and Natural Cola Flavour from Wood Apple as a Functional Food Product to Prevent Double Burden of Malnutrition in Children</b> Wenny Bekti Sunarharum, STP., M.Food.St., Ph.D, Indira Prakoso, Intan Salsabila Putri <i>BRAWI U</i></p>
<p><b>The Power of Eco-Aerogel from Cocoa Shell as Ethylene Gas Insulator in the Fruit Storage</b> Dr. Sri Rahayoe, S.T.P., M.P., Yudha Dwi Prasetyatama, S.T., M.Eng., Firdaffa Riefqi Ariawan, Fela Sefiana Dewanti, Izzatun Nisa Asyahidah, <i>UGM</i></p>	<p><b>Efficient Methods for Polyphenol Extraction from Cocoa Bean Shell</b> Aryanis Mutia Zahra, S.T.P., M.Si, Siti Mariyam, S.T.P., M.Sc, Riska Amalia Abrianti, Anggraeni Intan Maharani, Novita Dyah Pitaloka <i>UGM</i></p>
<p><b>Smart Biodegradable Food Package Innovation Based on Sugar Palm Starch Waste</b> Dr. Joko Nugroho Wahyu Karyadi, Siti Mariyam, S.T.P., M.Sc, Miko Fernando, Dyah Repati Maharani, Alfian Hanafi <i>UGM</i></p>	<p><b>Cocoa Drink Formulated with Nutritious Coffee Flour Processed using Batch Steam Agglomerator</b> Dr. Sri Rahayoe, S.T.P., M.P., Siti Mariyam, S.T.P., M.Sc, Ahmad Yumroni, Yolanda Florecita Maharani, Muhammad Haris Yulianto <i>UGM</i></p>
<p><b>Aloe vera Enriched Chocolate Drink as a Healthy Drink in the Pandemic Covid 19</b> Siti Mariyam, S.T.P., M.Sc, Arifin Dwi Saputro, Aulia Anindita, Muhammad Arif Syakban, Syahwal Zulkarnain <i>UGM</i></p>	<p><b>Utilization Thorny Palm Seeds and Bulbs Porang as Edible Coating to Prolong the Shelf Life of Chili (Capsicum annum L.)</b> Arifin Dwi Saputro, S.T.P., M.Sc., Ph.D., Dr. Joko Nugroho Wahyu Karyadi, Tiara Dinda Faizza, Hasti Ihsani Ayu, Faisal Fathin Haidar, <i>UGM</i></p>

## c. Biotechnology

<p><b>CRISPR: THE FUTURE OF AGRICULTURE</b> Dr. Sivasangar Seenivasagam, Mohd Saufi Mohd Ramli, Irfan Izzuddin Bin Yahya, Muhammad Othman Bin Zakaria, Mardeelan Anak Roland, <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Yeast as Biofertilizer?</b> Dr. Tan Toh Hii, Dr. Hanisah Kamilah Binti Abd Razak, Chong Cheng Ye, Wong Hui Jhing, Sabrina Rancang Binti Khairul <i>MSAE-SC UPM Bintulu</i></p>
<p><b>New Records of Wild Passion Fruit (Passiflora suberosa L.) in Malaysia: Evidence from Morphology and ITS Analysis</b> Shiamala Devi Ramaiya, Noramirah Hazirah Binti Md Zarita, Mohamad Zaki Mohamad Saad <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Genetic Diversity of Underutilized Fruit of Crystal Longan (Pometica pinnata J.R. Forst &amp; G. Forst) Genotypes</b> Shiamala Devi Ramaiya, Owen Yeo Thian Seng, A.Vignisvary Arumugam, Gerevieve Bangi Anak Sujang, <i>MSAE-SC UPM Bintulu</i></p>
<p><b>Nano-Immobilization of Cutinase Enzyme from Fusarium solani as PET Waste Plastic Degradative Enzyme</b> Yusuf Hendrawan STP., M.App. Life. Sc, PhD, Ahmad Zaki Mubarak STP., M.Si., PhD, Isbakhul Lailatil Fibriyah, Nadyah Eka Nurizza, Quinnike Aisy Maskurin <i>BRAWI U</i></p>	<p><b>Decreasing Oxalate Levels in Porang Flour (Amorphophallus muelleri blume) using Mechanical Grinding Process and Enzymatic Process by Response Surface Methodology</b> Angky Wahyu Putranto, STP, MP, Ir Aji Sutrisno MSc, Phd, Wardatul Maulidah, Adilla 'Aisyah Hana Mu'alim <i>BRAWI U</i></p>
<p><b>Hyperhydricity in Plant Tissue Culture</b> Dr. Nurashikin Kemat, Dr. Nik Norasma Binti Che'Ya, Syaz Wana Suid, <i>UPM</i></p>	<p><b>Manggot BSF (Black Soldier Fly) Solution Biowaste and Accelerates The Composting Proses For Sustainable Agriculture</b> Dr.I Putu Surya Wirawan, S.T.P., M.Si. Karolus Fernando Hasugian, Made Agus Toni Saputra, Ignasius Aleandre Tito Pranowo, <i>UDAYANA U</i></p>
<p><b>Eco-Plant Tissue Culture Media (e-PTCM)</b> Prof Madya Ts. Dr. Asmah binti Awal, Prof Madya Ts. Dr. Nor Azma binti Yusuf, Nur Atiqah binti Khirul Anuar, Nurul Ain Nadirah binti Mahmud, <i>UITM</i></p>	<p><b>The Use of Yeast and Bioreactors to Speed Up Fermentation and Wine Coffee</b> Siti Mariyam, S.T.P., M.Sc, Aryanis Mutia Zahra, S.T.P., M.Si, Anisa Kistanti, Rani Juni Widiyastuti, Edi <i>UGM</i></p>
<p><b>LACTAID "Fast Act Lactose Intolerance Relief" Dairy Substitution from Mung Bean Tempeh with Chocolate Flavor</b> Siti Mariyam, S.T.P., M.Sc, Dr. Joko Nugroho, Wahyu Karyadi, Yesica Meiliana Widiastuti, Haida Setyani, Noveria Anggi Nurrahmah <i>UGM</i></p>	

## d. Green Technology

<p><b>SMART HOME 'PUYUH'</b> Siti D'zaleha Binti Sahiron, Ammar Farhan Bin Othman, Muhammad Afiq Izzuddin Iskandar Bin Muhammad Anuar, Zamani Al Hakim Bin Abidin <i>PERDATECH</i></p>	<p><b>Effect of Gibberellic Acid and Chitosan Foliar Application on the Growth and Yield of Spinach (<i>Spinacia oleracea</i>) using Nutrient Film Technique (NFT) Hydroponic System</b> Dr. Norhafizah Binti Md Zain, Nadzirah Binti Adnan, <i>UMK</i></p>
<p><b>DEOXYGENATION OF PALM KERNEL OIL TO BIO-JET FUEL OVER MAGNETICALLY SEPARABLE CARBON- SUPPORTED FeMo CATALYST</b> Dr Nurul Asikin Mijan, Megan Xin Yi Ravindran, <i>UKM</i></p>	<p><b>Nanoencapsulation of Polianthes tuberosa Essential Oil with the Addition of Eucalyptol</b> Wenny Bekti Sunarharum, STP., M.Food.St., Ph.D, Indira Prakos, Intan Salsabila Putri <i>BRAWI U</i></p>
<p><b>Hydrogen Harvester from Water Renewable Energy Harvesting Technology based on Water Conservation and Aluminium Waste Treatment to Support Sustainable Development Goals (SDGs)</b> Angky Wahyu Putranto, STP, MP, Wafa Nida Faida Azra, Clara Dwi Anggraini, Jihan Nada Salsabila Erha <i>BRAWI U</i></p>	<p><b>School-based Waste to Energy</b> Dr. Chayanon Sawatdeenarunat, Dr. Nuttiya Tantranont, Sasithorn Saipa, Tidarak Pooya, Prasert Thaweesapphithak <i>UNI RAJABHAT</i></p>
<p><b>MULCH YOUR GARDEN: USING ORGANIC MULCHING FROM SEaweEDS</b> Dr Faizah Haji Metali, Dk Nasriah Rabiatal Adawiyah Pg Abdul Karim, Nurul 'Aqilah As-Syahirah Haji Abd Aziz, Amanda Liew Wei Yi <i>UBD</i></p>	<p><b>Application of Newly Isolated Trichoderma sp. as Biocontrol Agent and Biofertilizer</b> Dr Pooja Shivanand, Dr Faizah Hj Metali, Ak Abdul Muizz Al Azim Bin Pg Hj Abdul Halim, Anis Nadiyah Abdillah, Muhamad Nur Abadi Bin Mohd. Nizam, <i>UBD</i></p>
<p><b>HUGI(BOX)CINE Eco-package Recipient utilize Solar Cells with UVC and Disinfectant</b> Dimas Firmanda, Joko Prasetyo, Yubi Vebiona Hartono, Ni Putu Eka Dwiyanti, Oki Trisna Sekar Arum, <i>BRAWI U</i></p>	<p><b>Growing Temperate Butterhead Lettuce by Root Zone Cooling</b> Dr Wan Fazilah Fazlil Ilahi, Dr Nik Norasma Che'Ya, Nur Hidayu Abu Hassan, Owen Niexrickzon Anak Thomas Annie, <i>UPM</i></p>
<p><b>Utilization of Turpentine Oil for Jet Fuel as Renewable Energy</b> Hendrix Yulis Setyawan, STP. MSi, Ph.D, Adninda Hindun Alfiah, Abdel Mulki Al Hafizh, Rutmauli Hutabarat, <i>BRAWI U</i></p>	<p><b>SYNTHESIS, CHARACTERISATION AND CORROSION INHIBITION SCREENING OF Co(II) DITHIOCARBAMATE COMPLEXES: WEIGHT LOSS METHOD</b> Dr. Nur Nadia Dzulkifli, Nur Zalin Khaleda Binti Razali, Wan Nur Shakirah Binti Wan Hassan, Siti Nur Amirah Binti Shuhaimi, <i>UITM</i></p>
<p><b>Crop Waste Hydrogel Factory Management Utilizing IoT System for Sustainable Water Scarcity Solution</b> Aryanis Mutia Zahra, S.TP., M.Si, Dr. Radi, S.TP., M.Eng., Meutia Cahya Kusuma, Nadya Hafidzatun Nisa, Esti Krisjulianingrum <i>UGM</i></p>	<p><b>M-Biomac: Microalga Biodiesel Converter Based on Ultrasound Machine to Support Sustainable Development Goals 7</b> Joko Prasetyo, STP., M.Si, Vimala Tirta Putri Thedja, Ratih Dewi, Roy Ardy Colas Napitupulu <i>BRAWI U</i></p>
<p><b>ZeoFill: Development of Hexagonal Zeolite Filter for Improving Water Quality in Tertiary Irrigation Channel</b> Chandra Setyawan, STP., M.Eng., Ph.D, Dr. Ngadisih, Yosia Sinthabella, Hilyatanta Fiddaril Izza, Bondan Satria Pamungkas <i>UGM</i></p>	<p><b>CHLICO GELS: Development of Eco-Aerogel Derived Form Cocoa Waste for Sustainability of Green Industry Standard of Batik</b> Aryanis Mutia Zahra, S.TP., M.Si, Siti Mariyam , S.T.P., M.Sc, Dalifa Laila Fauziah Zahra, Dwiki Nugraha, Fahri Al Muhajirin, <i>UGM</i></p>
<p><b>Potato Hole Cutter from Scrap</b> Dr. Wan Nor Zanariah, Dr. Nozieana Khairuddin, Wazif Akmal Bin Hassdi, Carey Lu Kiing You, Intan Wahida Binti Abdullah <i>MSAE-SC UPM Bintulu</i></p>	<p><b>An Integrated Manufacturing System of Functionalized Plastic Aerogel for Combating Spill Oil Issues in Coastal Tourism Areas</b> Aryanis Mutia Zahra, S.TP., M.Si, Siti Mariyam , S.T.P., M.Sc, Rafli Arsyad, Hilbram Yanuarfa, Muhammad Syafiq Ersa Mahendra, <i>UGM</i></p>
<p><b>Pulsed Electric Field Technology for Soy Protein Extraction</b> Yardfon Tanongkankit, Kanyawee Kanthamoon, Poonyaporn Sanpang, Teerachai Poramapijitwat <i>MAEJO U</i></p>	<p><b>Integrated Farming Systems (Crops-Livestock-Fish) with BCG Economy Approach for Supporting Sustainable Agriculture</b> Andri Prima Nugroho, Ph.D., Prof. Lilik Sutiarso, M. Athala Fawwaz D., Leonardus Dwi K. B. P., Ignatius Jovantheo, <i>UGM</i></p>

<p><b>Coating Urea with Rejected Sago Starch to Minimize Ammonia Volatilization</b> Dr. Latifah binti Omar, Prof. Dr. Ahmed Osumanu Haruna, Kavitha A/P Rajan, Deborah Renting Jimmy, Cassandra David <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Smart Irrigation</b> Dr. Nurul Nadwa Binti Zulkifli, Adeline Lendy anak Kennedy, Yari Estadania Bin Sokyen, Zahrin Syazwan Bin Che Rohim <i>MSAE-SC UPM Bintulu</i></p>
<p><b>Synthesis, Characterisation and Corrosion Inhibition Screening of Benzohydroxamic Acid Derivatives in H2SO4: A Langmuir Isotherm</b> Dr. Nur Nadia Binti Dzulkifli, Norsanida Iswa Binti Sahani, Aqilah Binti Muhammad Saleh, Nur Zulaika Athirah Binti Dzulkifly <i>UITM</i></p>	<p><b>HYDRA: Heavy-Duty Hydrogen Fuel Cell Tractors to Sustain Regenerative Agricultural</b> Dr.nat. tech. Andriati Ningrum, S.T.P., M.Agr., Dr. Manikharda, S.T.P., M.Agr., I Nyoman Anggie Pratistha, I Putu Fadya Rachmawan, Gusti Putu Surya Govinda Atmaja <i>UGM</i></p>

## e. Agricultural Waste Management

<p><b>Isolation and Characterization of Banana Pseudostem Cellulose Nanofiber from Musa acuminata</b> Dr. Nozieana Binti Khairuddin, Mohammad Sobri Bin Merai, Nurul Husna Binti Che Hamzah, Dayangku Nurshahirah Binti Awang Wahab <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Make The World A Better Place and Compost Your Waste!</b> Juniza binti Md Saad, Syarifah Kamariah binti Wan Mohammad, Sarah binti Ja'afar, Nur Adidah Najwa binti Rammizon, Norsyahirah binti Jamaluddin <i>MSAE-SC UPM Bintulu</i></p>
<p><b>Agricultural Waste Management: Rice Straw</b> Dr Walter Charles Primus, Puan Azira binti Sanusi, Alia Zulaikha binti Mohamad Ashar, Dayana Batrisya binti Johan, Patricia Pawa Anak Dlem <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Smart Used Cooking Oil (UCO) Collection System for Sustainable Production</b> Dr. Nozieana Binti Khairuddin, Nur Afiqah Binti Ali, Nor Shafinaz Binti Azman <i>MSAE-SC UPM Bintulu</i></p>
<p><b>FARM TO FORK</b> Ts. Dr. Muhammad Heikal Ismail, Dr. Muhammad Hazwan Hamzah, Veknesh A/L Arumugam, Khalida Aziz, Miiraa A/P Muruga <i>MSAE-SC UPM Serdang</i></p>	<p><b>Purification of Protease Enzymes on Waste of Papaya Leaves to Increase the Effectiveness of Animal Food</b> Freini Dessi Effendi, S.T.P., M.P., M.Sc., Siti Miftachul Jannah, Lilis Nur Fitriani, Dharma Abiyyu Allam <i>BRAWI U</i></p>
<p><b>FARMERS ACCEPTANCE TOWARDS HAY BALER IN IMPROVING ECONOMY AND REDUCING TEMPERATURE IN SUNGAI LIMAU, YAN.</b> Siti Mariam Shamsi, Nur Zulaika Amani Bt Badarol Hisham, <i>UITM</i></p>	<p><b>CORBTIZER - Multi-Purpose Food Grade Sanitizer from Corn Cobs Waste</b> Tanalyna Hasna, S.TP, M.Sc, Shinta Clarita Angel, Gabriella Rosa, Archangela Zevanya Venenzia Widodo, <i>BRAWI U</i></p>
<p><b>Performance of Coffee Wasted Activated Carbon Enriched with Phytochelation - Water Hyacinth Root Extract as a Heavy Metal Adsorbent - A Review</b> Dego Yusa Ali, STP, M.Sc, Sarah Febrian Perdaningtyas, Roisatur Rahma Ahadiyah, Aminatuz Zuhriyah, <i>BRAWI U</i></p>	<p><b>NanoWaste : Exploration of the Potential Role and Economic Value of Agricultural Waste for Biogenic Nanosilica Production</b> Tunjung Mahatmanto, STP., M.Si., PhD, Rafiq Usdiqa Maulana, Riyanti Zhafirah Makrudi, Sania Isma Yanti <i>BRAWI U</i></p>
<p><b>Bio-Re Vending Machine</b> Puan Rashidah binti Ruslan, Shaktisswary a/p Subarmaniam, Nur Adiba Binti Ahmad Isa, Siti Zulaikha Binti Ismail <i>UNIMAP</i></p>	<p><b>Proximate Characteristics and Calorifics Value of Briquette Formulation from Biomass (Dairy Sludge and Coconut Shell) and Coal as An Alternative Fuel (Study Case at PT XYZ)</b> Dr. Dodyk Pranowo, STP, M.Si, Claudia Gadizza Perdani, STP, M.Si, Tsamara Dhany Savira, <i>BRAWI U</i></p>
<p><b>Re.Spice: Functional Value Improvement of Organic Waste from Indonesian Herbal Drinks</b> Bayu Meindrawan, S.Si, M.Si, Diana Lo, S.Tp, M.Sc, Ph.D, Almira Khalishah, Atikah Sari Khairunnisa, Samantha Ardhelia, <i>BINUS</i></p>	<p><b>Victory Garden : Reduce, Reuse, Recycle, Recovery</b> Nur Bahiah Mohamed Haris, Jasmin Arif Shah, Munifah Siti Amira Yusuf, Tasnim Ismail, Khairisyahmie Khairisham <i>MSAE-SC UPM Serdang</i></p>
<p><b>ESTIMATING MAIZE RESIDUE POTENTIAL ALONG WITH ITS VALORIZATION POSSIBILITIES IN NEPAL</b> Sagar Kafle, Bibek Poudel, Aadarsha Khatiwada, Birendra Das <i>TRIBUVAN U</i></p>	<p><b>Real Time Smart Storage to Reduce Household Food Waste Based on Wireless Sensor Network</b> Prof. Ir. I Made Supartha Utama, M.S.,Ph.D., I Putu Gede Budisanjaya, S.TP., MT., Zulfa Hana Maulida, Luh Made Putri Apriliani, Hyacintha Dinda Septiana Putri, <i>UDAYANA U</i></p>
<p><b>Sustainability of DIY Cocoa Pod Husk Compost As An Alternative Waste Management</b> Jasmin Arif Shah, Nur Bahiah Mohamed Haris, Winoryantie Sulaiman, Muhammad Hafidz Bin Abdul Raman, <i>UPM</i></p>	<p><b>Size Risk Syntetic Zeolite of Rice Husk</b> Dr. Ir. Pande Ketut Diah Kencana, MS., Ida Ayu Rina Pratiwi Pudja, S.TP., MP.,Ni Made Thari Setiadi, Muhammad Dwi Prayoga Yunus, Fajar Khun Faqih <i>UDAYANA U</i></p>

<p><b>APPLICATION OF FISH WASTE FERTILIZER ON THE GROWTH OF MAIZE (<i>Zea mays</i>)</b> Noraida Mohd Radzi, Joniston Jupin @ Jubin <i>UiTM</i></p>	<p><b>Electrical productivity analysis from banana peels and orange peels biomass wastes using microbial fuel cell (MFC) as agriculture solid waste management</b> Dr. Eng Evi Kurniati, STP, M, Dhanu Kusuma Farobby, Rizal Arifiandika, <i>BRAWI U</i></p>
<p><b>Mechanical and Physical Properties of Banana/Glass Fibre Reinforced Polyester Composites</b> Nor Hanifawati Binti Inai, Azizul Hakim Lahuri Jamie Lazaroo, Logeswary D/O Muniandy, Nur Khairunnisa Binti Mohd Kamaruzaman <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Salsyn: High-Fiber Synbiotic Biscuit made from Corncob Flour with Snake Fruit Jam and Microencapsulated <i>Lactobacillus plantarum</i> to Prevent Gut Dysbiosis</b> Dr. Dwi Larasatie Nur Fibri, S.T.P., M.Sc, Fira Silvany Ramadhania, Dyah Sekar Purnama Ratri, Gustav Sandy Nathanael, <i>UGM</i></p>
<p><b>Slurry Biogas Application for Soil Amendment as the Solution of Agricultural Waste Utilization to Create Future Green Agricultural System</b> Dr. Ngadisih, Dr. Joko Nugroho Wahyu Karyadi, Unggul Fajar Hidayat, Denis Tio Yudhistira, C. Candra Palupi, <i>UGM</i></p>	<p><b>The Phyllosilicates Hydrogel Sheet Developed using Paddy Husk for Alternative Planting</b> Aryanis Mutia Zahra, S.T.P., M.Si, Siti Mariyam, S.T.P., M.Sc, Amanda Ghifary, Faradiba Aulia, Hastungkoro Widi Astuti, <i>UGM</i></p>
<p><b>BIO-BRICO: Utilization of Cocoa Waste as a Potential Source of Bio-Briquettes in Various Carbonization Techniques</b> Aryanis Mutia Zahra, S.T.P., M.Si, Siti Mariyam, S.T.P., M.Sc, Ibnu Farras, Hedwigis Nasia Meirieta, Dian Kharisma Rahmawati, <i>UGM</i></p>	<p><b>Production of Bio Briquettes from Coffee Residue Waste Coconut Shell Charcoal, and Paper Adhesives for Community Use</b> Chandra Setyawan, STP., M.Eng., Ph.D, Dr. Radi, S.T.P., M.Eng., Jaromansen Damanik, Patrick Gani, Brigitta Ery Septiyanti, <i>UGM</i></p>
<p><b>Eco-friendly Nano-Approach to Subside Accumulation of Arsenic in Paddy Grains</b> Dr Subash C.B. Gopinath, Dr Nor Azizah Parmin, Muhammad Nur Aiman Bin Uda, Muhammad Nur Afnan Bin Uda, Uda Hashim, <i>UniMAP</i></p>	<p><b>The Potentials of Spent Mushroom Compost in Sustainable Agriculture</b> Dr. Tan Toh Hii, Dr. Hanisah Kamilah Binti Abd Razak, Chong Cheng Ye, Wong Hui Jhing, SABRINA RANCANG BINTI KHAIRUL, <i>MSAE-SC UPM Bintulu</i></p>

### Research output video

Sub-themes:

- a. Agricultural Engineering

<p><b>Mapping of Black Pepper using Landsat 8 OLI and Supervised Classification</b> Dr. Wan Nor Zanariah Binti Zainol @ Abdullah, Siti Zul Lailee Binti Kamsan, Nuriana Fatiha binti Nuzaisam, Aus Mohammad Danish bin Mohd Ahya, <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Developing Farmer Database in Sungai Mapai, Kanowit for Ensuring Best Planting Practice on Black Pepper (<i>Piper nigrum</i>) and Optimise Good Yield</b> Muhammad Aliuddin Bin Bakar, Klausner Lius Anak Apo, <i>UiTM</i></p>
<p><b>Soursop Snack</b> Marini Bt Nafi, Muhammad Shahriezman Bin Muhammad Fauzi, Muhammad Izzan Bin Aziz, Nur Alina Binti Rozali <i>Politeknik Jeli Kelantan</i></p>	<p><b>Application of Edible Ginger Coating on Postharvest Papaya</b> Murni Binti Rahim, Thanesh A/L Manimaran, Kumeresen A/L Rajendran, Sulochana A/P Edward Martin, <i>Politeknik Jeli Kelantan</i></p>
<p><b>An Overview on Vitamin C Content in Dried Pineapple Skin from Infrared Dryer</b> Ts. Habsah Alwi, Muhammad Syafiq Bin Ismail <i>UiTM</i></p>	<p><b>Investigation on Drying Process of Pineapple Flesh Fibre from Far-infrared Dryer and Review the Effect of Drying to Vitamin C Content in Pineapple Flesh</b> Hanafiah Zainal Abidin, Ts. Habsah Alwi, Khairuni Asrini Bt Mohd Karno <i>UiTM</i></p>
<p><b>Development of Oil Palm Precision Agriculture: Smart Management in Oil Palm Seedling Nursery</b> Nor Hanifawati Binti Inai, Jamie Lazaroo, Nur Khairunnisa Binti Mohd Kamaruzaman, Logeswary A/P Muniandy <i>MSAE-SC UPM Bintulu</i></p>	<p><b>Development of Mini Plant Factory System for Supporting the Urban Farming Cultivation</b> Andri Prima Nugroho, Ph.D., Prof. Lilik Sutiarso M. Athala Fawwaz D., Leonardus Dwi K. B. P. Ignatius Jovantheo <i>Gadjah Mada University</i></p>
<p><b>Seeder with Stick Rotation Mechanisms</b> Dr. Radi, S.T.P., M.Eng., Dr. Makbul Hajad, Adrian Anugerah Putra, Faiz Muhammed, Prita Dewi <i>Gadjah Mada University</i></p>	<p><b>Application of 3D Reconstruction System based on Close-range Photogrammetry Method for Growth Estimation of Chinese Cabbage (<i>Brassica pekinensis</i> L.)</b> Andri Prima Nugroho, Ph.D., Muhammad Affan Fajar Falah, Ph.D., Ardyan Widyanto Putro, Rievaldy Albyan, Pradnya Umaradani, <i>Gadjah Mada University</i></p>

<p><b>"Water Saving Technology for Supporting the System of Rice Intensification"</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum Rido Saputra S2, Muhammad Salman Ibnu Chaer S2, Guyup Mahardian DP <i>Gadjah Mada University</i></p>	<p><b>Development of Canal Gauge Monitoring System Based on Computer Vision Technology for Supporting the Irrigation Modernization</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum, Lukas Wiku Kuswidiyanto, Galih Wisnu <i>Gadjah Mada University</i></p>
<p><b>3D Reconstruction of Plant using Close Range Photogrammetry with Leaf Type Variations</b> Andri Prima Nugroho, Ph.D., Prof. Lilik Sutiarso, Diaz Habib Dananta , Wilda Monicha Mukti, Diah Nur Rahmi <i>Gadjah Mada University</i></p>	<p><b>Development of Laser-based Infiltrometer for Estimating the Percolation Phenomena in Irrigation Modernization</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum Gabriel Dida, Rega Arya, Ulfa Dwi Oktasari <i>Gadjah Mada University</i></p>
<p><b>Development of Precise Measurement of Water Percolation Inside the Infiltrometer for Supporting Plant Water Requirement Analysis</b> Andri Prima Nugroho, Ph.D., Dr. Murtiningrum, Gabriel Dida, Rega Arya, Ulfa Dwi Oktasari <i>Gadjah Mada University</i></p>	

## b. Food Engineering

<p><b>Effects of Pickling and Drying Times on Changing of Chemical and Physical Properties of Salted Yolk</b> Assistant Professor Dr. Tirapon Junyusen, Mr. Peerawat Taengsopha, Miss Rujiraporn Khomkham, Miss Priyaporn Poome <i>Suranee University</i></p>	<p><b>Harumanis Mangoes Storage System using IR Sensor</b> Miss Munirah Bt Mohamed Nazari, Thinesh Mahamuney, Muhamad Haffizul Haqim Bin Mazlan, Muhammad Izzuddin B Johari <i>University Malaysia Perlis</i></p>
<p><b>3D-Printed Meat Analogue with Broad Beans to Maintain ASEAN Food Security</b> Dr.nat. tech. Andriati Ningrum, S.T.P., M.Agr., Dr. Manikharda, S.T.P., M.Agr., I Nyoman Anggie Pratistha, I Putu Fadya Rachmawan, Gusti Putu Surya Govinda Atmaja, <i>Gadjah Mada University</i></p>	<p><b>Drying Kinetics of Laksam and Yellow Noodles</b> Ts. Dr. Muhammad Heikal Ismail, Dr Irwan Syah Md Yusoff, Muhamad Wazif Zakwan Bin Mubarak, Siti Norfatih Binti Mohammad Ehsan <i>MSAE-SC UPM Serdang</i></p>
<p><b>Cocoa Drink Formulated with Nutritious Coffee Flour Processed using Steam Batch Agglomerator</b> Siti Mariyam , S.T.P., M.Sc, Arifin Dwi Saputro Aulia Anindita, Muhammad Arif Syakban, Syahwal Zulkarnain <i>Gadjah Mada University</i></p>	<p><b>Smart Biodegradable Food Package Innovation Based on Sugar Palm Starch Waste</b> Dr. Joko Nugroho Wahyu Karyadi, Siti Mariyam , S.T.P., M.Sc, Miko Fernando, Dyah Repati Maharani, Alfian Hanafi <i>Gadjah Mada University</i></p>

## c. Biotechnology

<p><b>CRISPR/CAS9 Technology (Cluster Regularly Interspaced Short Palindromic Repeat/Cluster Associated Protein-9) as Therapy of Type 1 Diabetes Mellitus Patients</b> Mochamad Nurcholis, S.T.P., M.P., Ph.D., Lilis Nur Fitriani, Siti Miftachul Jannah, Kresna Purwandaru, <i>Brawijaya University</i></p>	<p><b>Nanodevice for Arsenic Detection in Rice Grains - A Potential Screening Tool</b> Dr Subash C.B. Gopinath, Dr Nor Azizah Parmin, Muhammad Nur Aiman Bin Uda, Muhammad Nur Afnan Bin Uda, Uda Hashim <i>University Malaysia Perlis</i></p>
<p><b>Sophorolipid Application Supports Biotechnology</b> Mohd Nazren Radzuan, Hasanah binti Johari, Nur 'Aliah Hanani binti Mohd Baktiar, Siti Suhaila binti Mohd Akbar <i>MSAE-SC UPM Serdang</i></p>	<p><b>Bioprospecting of Bacterial Endophytes and Its Potential Agricultural Application</b> Dr Pooja Shivanand, Dr Faizah Hj Metali, Ak Abdul Muizz Al Azim Bin Pg Hj Abdul Halim, Anis Nadiyah Abdillah, Muhamad Nur Abadi Bin Mohd. Nizam <i>University Brunei Darussalam</i></p>
<p><b>ZelaTe "Zero Lactose Powder Milk from Tempeh" Innovative Solution for Lactose Intolerance People Made from Kidney Beans (<i>Phaseolus vulgaris L.</i>) Tempeh with Chocolate Flavour</b> Siti Mariyam , S.T.P., M.Sc, Dr. Joko Nugroho Wahyu Karyadi, Yesica Meiliana Widiastuti Haida Setyani, Noveria Anggi Nurrahmah <i>Gadjah Mada University</i></p>	<p><b>Funfional Nano-catalyst Impregnated with Transition Metal from Waste Eggshell for Biodiesel Production via Transesterification Reaction</b> Dr. Nozieana Binti Khairuddin, Nur Afiqah Binti Ali, Nor Shafinaz Binti Azman <i>MSAE-SC UPM Bintulu</i></p>

## d. Green Technology

<p><b>Solar Charge-based Technology Innovation of Smart Counter Toll as an Effort to Collect the Growth of Hyacinth (<i>Eichhornia crossipes</i>)</b> Dr. Abdul Azis S, S.Tp., M.Si, Husnul Mubarak, S.Tp., M.Si, Fadila, Dwi Mentari Thamsyul, Nur Azni, Hasanuddin University</p>	<p><b>Red Cabbage Bioplastic</b> Dr. Nozieana Binti Khairuddin, Mohammad Sobri Bin Merais, Nurul Husna Binti Che Hamzah MSAE-SC UPM Bintulu</p>
<p><b>ZeoFill: The Development of Hexagonal Zeolite Filter for Improving Water Quality in Tertiary irrigation Channel</b> Chandra Setyawan, STP., M.Eng., Ph.D, Dr. Ngadisih, Yosia Sinthabella, Hilyatanta Fiddaril Izza, Bondan Satria Pamungkas Gadjah Mada University</p>	

## e. Agricultural Waste Management

<p><b>Poultry Farm Waste Disposal</b> Dr Nurhadijah binti Zainalabidin, Najjah binti Abdul Jalil, Nurul Atikah Mohd Nasir, Fatin Hazirah binti Sabarudin University Malaysia Perlis</p>	<p><b>Managing Sago Hampas and Palm Oil Decanter Cake Through Stabilization using Black Soldier Fly (<i>Hermetia illucens</i>) Larvae</b> Dr. Latifah binti Omar, Prof. Dr. Ahmed Osumanu Haruna, Visvini A/P Lohanathan, Kurk Wei Jie, Mohd Hasyrin Bin Hassan, MSAE-SC UPM Bintulu</p>
<p><b>Implementing Zero Waste Concept by Food Waste Composting using <i>Eisenia fetina</i> sp.</b> Ts. Dr. Muhammad Heikal Ismail, Dr. Muhammad Hazwan Hamzah, Veknesh A/L Arumugam, Khalida Aziz, Miiraa A/P Muruga MSAE-SC UPM Serdang</p>	

**Model construction video/ pitching video**

Sub-themes:

## a. Agricultural Engineering

<p><b>Potato Holes Cutter</b> Dr. Wan Nor Zanariah, Dr. Nozieana Khairuddin, Carey Lu Kiing You, Intan Wahida Binti Abdullah, Wazif Akmal Bin Hassdi MSAE-SC UPM Bintulu</p>	<p><b>A Durian Peeler</b> Dr. Nurul Nadwa Binti Zulkifli, Yari Estadaniel Bin Sokyen, Zahrin Syazwan Bin Che Rohim, Adeline Lendy anak Kennedy MSAE-SC UPM Bintulu</p>
<p><b>IoT Based Monitoring System for Empurau Fish Farming (FISHIoT)</b> Abdul Rashid Mohamed Shariff, Muhammad Ghulam Ghouse, Ee Zu Er, Nurshahida Azreen Binti Mohd Jais, Mohd Norazsyyam bin Azman MSAE-SC UPM Serdang</p>	<p><b>Fixed Distance Pineapple Planter</b> Dr Anas Mohd Mustafah, Dr Wan Nor Zanariah Zainol, Kelvin Niyok, Nur Firdeanna Suhaik, Vikneswaran Jeya Kumaran MSAE-SC UPM Serdang</p>
<p><b>Hill Rice Seedling Tool</b> Sharence Nai Sowat, Wan Nor Zanariah Binti Zainol, Anathasia Bejut Anak Sandai, Melissa Chew Fui Yen, Harryjoy Lian Jack MSAE-SC UPM Serdang</p>	<p><b>Portable Poultry Automatic Feeder</b> Mahirah Binti Jahari, Muhammad Hakimi Bin Razali Syahir Shahibullah, Nurul Najjah Binti Yusof MSAE-SC UPM Serdang</p>
<p><b>Vertical Farming For <i>Azolla Pinnata</i></b> Norulhuda Mohamed Ramli, Muhammad Nur Syawal bin Maulan, Nurul 'Awatif binti Mohamad Bekari, Nurul Najjah binti Zulkifli MSAE-SC UPM Serdang</p>	<p><b>Smart Technology Of Vacuum Dryer For AMORPHOPHALLUS ONCOPHYLLUS BASED ON INTERNET OF THING AND ARTIFICIAL NEURAL NETWORK</b> Yusuf Hendrawan STP. M. Applied.Life.Sc.PhD, Clara Dwi Anggraini, Imam Prasetyo, Wafa Nida Faida Azra, Brawijaya University</p>
<p><b>Development of Manual Sprayer</b> Renny Eka Putri, Jimmy Aprilio, Andalas University</p>	<p><b>Solar Automatic Irrigation System in Paddy Field</b> Dr Nurhadijah binti Zainalabidin, Siti Hajar binti Haron, University Malaysia Perlis</p>

<p><b>Integrated Farming System (Ifs): A Sustainable Approach to Agriculture</b> Sagar Kafle, Suman Thapa, Roshan Pandey, Ramesh Regmi, Madan Prasad Banjara <i>Tribhuvan University</i></p>	<p><b>IoT-based Mistig System for Seed Germination</b> Hamdan bin Sulaiman, Siti Mariam Shamsi, Muhamad Faiz Hisham <i>UiTM</i></p>
<p><b>Smart Home 'Puyuh'</b> Siti D'zaleha Binti Sahiron, Ammar Farhan Bin Othman, Muhammad Afiq Izzuddin Iskandar Bin Muhammad Anuar, Zamani Al Hakim Bin Abidin <i>Perda-Tech</i></p>	<p><b>IoT-Based Aeroponic Technology For Controlling Water Humidity And Nutrient Content With Lighting Cultivation Treatment To Optimize Superfood Microgreens Nutrition</b> Yusuf Hendrawan STP., M.App. Life. Sc, PhD, Ahmad Zaki Mubarak STP., M.Si., PhD, Isbakhul Lailatil Fibriyah, Nadyah Eka Nurizza, Quinnike Aisy Maskurin, <i>Brawijaya University</i></p>
<p><b>Development Of Mini Plant Factory System For Supporting The Urban Farming Cultivation</b> Andri Prima Nugroho, Ph.D., Prof. Lilik Sufiarso, M. Athala Fawwaz D., Leonardus Dwi K. B. P. Ignatius Jovantheo <i>Gadjah Mada University</i></p>	<p><b>GIS Based Vegetation Landscape Modelling for Conservative Agriculture Under Tropical Environment</b> Chandra Setyawan, STP., M.Eng., Ph.D, Dr. Radi, S.TP., M.Eng., Jaromansen Damanik, Patrick Gani, Brigitta Ery Septiyanti, <i>Gadjah Mada University</i></p>
<p><b>Development Of An Intelligence Traceability System For Sustainability Of Indonesian Cocoa Industry</b> Aryanis Mutia Zahra, S.TP., M.Si, Siti Mariyam, S.T.P., M.Sc, Rizky Dian Ramadhan Diza Rizky, Naufal Helmi Yumnanda <i>Gadjah Mada University</i></p>	<p><b>Rice Transplanter By Using "Tapak Macan"</b> Dr. Radi, S.TP., M.Eng., Prof. Bambang Purwantana, Alfitra Widya Yubastama, Gigieh Henggar Jaya, Rafli Syaiful Fatah <i>Gadjah Mada University</i></p>

## b. Food Engineering

<p><b>Development Of Pressure Tank System For Agriproducts Processing</b> Assistant Professor Dr. Tiraporn Junyusen, Assistant Professor Dr. Payungsak Junyusen, Miss Natthaporn Chatchavanthatri, Mr. Suwijak Thongin, Mr. Chakkaphat Phadungkit <i>Suranaree University</i></p>	<p><b>Cold Storage Chain Ecosystem</b> Puan Siti Kamariah binti Md Sa'at, Syafiq Aiman Bin Shaiful Adli, Muhammad Arffa Safaraz Bin Sopian, Syahmi Aiman Bin Samsi <i>University Malaysia Perlis</i></p>
<p><b>CROD-IT: Circular Frying System with Rapid Oil Degradation Measurement based on Internet of Things</b> Bangun Prajanto Nusantoro, S.T.P., M.Sc, Muhammad Yusril Hana, Oryza Ramadhania, Adiba Tsalsabilla, <i>Gadjah Mada University</i></p>	<p><b>Aloevera Enriched Chocolate Drinks as a Healthy Drink in the Pandemic COVID 19</b> Arifin Dwi Saputro, S.T.P., M.Sc., Ph.D., Dr. Joko Nugroho Wahyu Karyadi, Tiara Dinda Faizza, Hasti Ihsani Ayu, Faisal Fathin Haidar <i>Gadjah Mada University</i></p>

## c. Biotechnology

<p><b>Complex Biopreparations For Optimizing The Increase Of Plants Yield</b> Dimas Firmanda, Joko Prasetyo, Ni Putu Eka Dwiyanti Oki Trisna Sekar Arum, Yubi Vebiona Hartono, <i>Brawijaya University</i></p>
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## d. Green Technology

<p><b>Smart Broiler Farming</b> Dr Zainal Abidin Arsat, Ainul Khalid Bin Mulyani, Muhammad Danish Bin Badrul Azmi, Noor Adlina Alaudin <i>University Malaysia Perlis</i></p>	<p><b>Food Plant: Gamification As An Effort To Change Individual Behaviour On Food Waste Problem</b> Andika Wicaksono Putro, Shri Bhuwana Tungga Devi, Renno Meidi Akrommin, Maria Angela Putri Rahardja, <i>Gadjah Mada University</i></p>
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**Monitoring of Black Pepper Growth Using Landsat 8 OLI**

Dr Wan Nor Zanariah binti Zainol@Abdullah, Siti Zul Lailee binti Kamsan, Nuriana Fatihah binti Nuzuisham, Aus Mohammad Danish bin Mohd Ahya, MSAE-SC UPM Bintulu

**Putra Green Vertical Farming Model**

Dr. Diyana binti Jamaludin, Dr. Muhammad Hazwan bin Hamzah, Jeremiah Balang Sang, Tenny Kubu, Nur Khairunhazwani Zamri  
MSAE-SC UPM Serdang

**The Development Of Recording System On The Collection Of Fresh Fruit Bunch For Upstream PURPOSES**

Samihah Mustaffha, Mohamad Syahrizan Ahmad Gaman  
UiTM

## e. Agricultural Waste Management

**Biogas: Agro-Waste to Energy**

Pn. Siti Kamariah Bt. Md. Sa'at, Zulkarnain Bin Ahmad Nazri, Syed Aiman Bin Syed Razali, Tuan Puteri Maisarah Binti Tuan Razmi  
University Malaysia Perlis

**Utilization of Cocoa Waste as a Potential Source of Bio-Briquettes in Various Carbonization Technique**

Aryanis Mutia Zahra, S.T.P., M.Si, Siti Mariyam, S.T.P., M.Sc, Ibnu Farras, Hedwigis Nasia Meirieta, Dian Kharisma Rahmawati, Gadjah Mada University

**Production of Bio Briquettes Using Coffee Residue Waste, Coconut Shell Charcoal, and Paper Adhesives for Community Use (BRICO)**

Chandra Setyawan, STP., M.Eng., Ph.D, Dr. Radi, S.T.P., M.Eng., Jaromansen Damanik, Patrick Gani, Danni Dwiki Tampubolon  
Gadjah Mada University

**SUBMITTED EXTENDED ABSTRACT****A Review on Hyperspectral Remote Sensing for Weed Detection Analysis in Agricultural Crop**

Nursyazyla Binti Sulaiman, Syarifah Noor Irma Suryani Bt Syd Ahmad, Zaid Bin Ramli, Nik Norasma Che'Ya\*, Muhammad Huzafah Mohd Roslim

**Development of Geo-Tagging System and Crop Monitoring using Aerial Imagery and Vegetation Indices Algorithm**

Nur Adibah Mohidem, Muhamad Irfan Ab Rahman, Nik Norasma Che'Ya\*, Wan Fazilah Fazlil Ilahi, Mohd Amir Sabrin Zamri

**Prototype of Vacuum Dryer on Porang Bulbs based on Artificial Neural Network**

Clara Dwi Anggraini\*, Wafa Nida Faida Azra, Imam Prasetyo

**Development of The Automated Fertigation Control System using Mobile Apps**

Nur Adibah Mohidem, Fakhrol Azran Nawati, Nik Norasma Che'Ya\*, Wan Fazilah Fazlil Ilahi

**Development of Oil Palm Precision Agriculture: Smart Management in Oil Palm Seedling Nursery**

Azizul Hakim Lahuri\*,Nor Hanifawati Inai\*,Jamie Lazaroo,Nur Khairunnisa binti Mohd Kamaruzaman,Logeswary A/P Muniandy

**Rice Crop Monitoring using Normalized Difference Vegetation Index (NDVI)**

Rhushalshafira Binti Rosle, Rowena Binti Mat Halip,Nursyazyla Binti Sulaiman, Nik Norasma Che'Ya\*, Wan Fazilah Fazlil Ilahi

**Mapping of Black Pepper Farm using Landsat 8 Oli and Supervised Classification**

Siti Zul Lailee Kamsan\*, Wan Nor Zanariah Zainol @ Abdullah

**Automatic Plant Watering System using IOT and Android**

Zainah Md. Zain\*, Norhafizah Md Zain, Nur Hidayatul Ain Che Azman, Ling Kuok Fong, and Ma Xian Xi

**Application of 3D Reconstruction System Based on Close- Range Photogrammetry Method for Growth Estimation of Chinese Cabbage (*Brassica Pekinensis* L.)**

Ardyan Widyanto Putro,Rievaldy Albyan,Pradnya Umaradani ,Andri Prima Nugroho\*, and Lilik Sutiarsa



**Prototype Model of Omni-Wheeled Tractor to Reduce Unnecessary Movement**

*Eviita Nugroho,RR, Yohana Wintan Pangesti, Eka Riskawati,Radi, Makbul Hajad\**

**GIS Based Vegetation Landscape Modeling for Conservative Agriculture Under Tropical Environment**

*J. Damanik\*, P. Gani, D. D. Tampubolon, C. Setyawan, Radi*

**Development of Portable Low-Priced Visible/ Near Infrared Reflectance Spectrometer to Distinguish Cocoa Beans from Different Regions**

*Tiana Nur Annisa, Tio Farros Atalla, Rudiati Evi Masithoh\* and Arifin Dwi Saputro*

**Three-Dimensional (3D) Reconstruction of Plant Using Close Range Photogrammetry for Leaf Type Variations**

*Diaz Habib Dananta, Wilda Monicha Mukti, Diah Nur Rahmi, Andri Prima Nugroho\* and Lilik Sutiarso*

**Tamanu Oil Production using Screw-Pressed Method**

*Linggar Setianingrum, Dhyas Tanjung Prabowo Putri\*, Haryo Prasetyo Adi Andoyo, Joko Nugroho Wahyu Karyadi, Makbul Hajad*

**Evaluation of Rice Transplanter for “Tapak Macan” Cropping Pattern**

*Gigjeh Henggar Jaya, Alfitra Widya Yubastama, Rafli Syaiful Fatah, Radi\*, Bambang Purwantana*

**Seeder with Stick Rotation Mechanisms**

*Faiz Muhammed\*, Adrian Anugerah Putra, Prita Dewi, Radi, Makbul Hajad*

**Exploration of the Potential Role and Economic Value Of Agricultural Waste for Biogenic Nanosilica Production**

*Rafiq Usdiqa Maulana\*, Riyanti Zhafrirah Makrudi, Sania Isma Yanti*

**Synthetic Leather from Tofu Waste**

*Rizal Arifiandika\*, Dhanu Kusuma Farobby, Indra B. Sanjaya, Evi Kurniati*

**Electrical Productivity Analysis from Banana Peels and Orange Peels Biomass Waste using Microbial Fuel Cell (MFC) Technology as Agricultural Solid Waste Management Alternative**

*Dhanu K. Farobby\*, Rizal Arifiandika, Evi Kurniati*

**Purification of Protease Enzymes on Waste of Papaya Leaves to Increase the Effectiveness of Animal Food**

*Siti Miftachul Jannah\*, Lilis Nur Fitriani, Dharma Abiyyu Allam, Freini Dessi Effendi*

**Proximate Characteristics and Calorific Value of Briquette Formulation from Biomass (Dairy Sludge And Coconut Shell) and Coal as an Alternative Fuel (Case Study At PT XYZ)**

*Tsamara Dhany Savira\*, Dr. Dodyk Pranowo, Stp, M.Si, Claudia Gadizza Perdani,Stp, M.Si*

**Managing Sago Hampas and Palm Oil Decanter Cake Through Stabilization using Black Soldier Fly (Hermetia Illucens) Larvae**

*Visvini Lohananthan, Latifah Omar\*, Ahmed Osumanu Haruna,Kurk Wei Ji, Mohd Hasyin Hassan*

**Development of Biofilm from Sago Starch and Red Cabbage and Its Application on Fresh Cut Fruits for Packaging Purposes**

*Nurul Husna Che Hamzah, Dayangku Nurshahirah Awang Wahab, Mohammad Sobri Merai, Nozieana Khairuddin\**

**Mechanical and Physical Properties of Banana/Glass Fibre Reinforced Polyester Composites**

*Nor Hanifawati Inai\*, Azizul Hakim Lahuri\*, Jamie Lazaroo, Nur Khairunnisa Binti Mohd Kamaruzaman, Logeswary A/P Muniandy*

**Application of Fish Waste Fertilizer on the Growth of Maize (Zea Mays)**

*Joniston Jupin @ Jubin, Noraida Mohd Radzi\**

**Functional Nano-Catalyst Impregnated with Transition Metal from Waste Eggshell as Support for Biodiesel Production Via Transesterification**

*Nur Afiqah Ali, Nor Shafinaz Azman and Nozieana Khairuddin\**

**Production of Bio Briquettes using Coffee Residue Waste, Coconut Shell Charcoal, and Paper as Adhesives for Community Use**

*Patrick Gani\*, Jaromansen Damanik, Danni Dwiki Tampubolon, Radi, Chandra Setyawan*

**Complex Biopreparations for Optimizing the Increase of Plants Yield**

*Yubi Hartono\*, Ni Putu Eka Dwi Yanti, Okl Trisna Sekar Arum, Dr. Dimas Firmanda Al Riza, Joko Prasetyo, S.Tp, M.Si*

**Potential Study of Cutinase Nano-Immobilization from Fusarium Solani as Polyethylene Terephthalate Plastic Waste Degradative Enzyme**

*Isbakhul Lailatil Fibriyah\*, Nadyah Eka Nurizza, Quinnike Aisy Maskurin*

**Crispr/Cas9 (Cluster Regularly Interspaced Short Palindromic Repeat/Associated Protein-9) Technology as Genetic Therapy of Type 1 Diabetes Mellitus Patients**

*Lilis Nur Fitriani\*, Siti Miftachul Jannah, Kresna Purwandaru, Mochamad Nurcholis*

**Lactaid "Fast Act Lactose Intolerance Relief" Dairy Substitution from Mung Bean (*Vigna Radiata*, L.) Tempeh with Chocolate Flavour for Lactose Intolerance People**

*Haida Setyani\*, Noveria Anggi Nurrahmah, Yesica Meiliana Widiastuti, Siti Mariyam And Joko N*

**Optimization of Drying Time and Foam Thickness on the Production of Microwave-Dried Egg White Powder**

*Desy Putri Utami\*, Dr. Ir. Sukardi, Ms, Claudia Gadizza Perdani Stp, M.Si*

**All Can Eat Meat: 3D-Printed Meat Analogue with Broad Beans to Maintain Asean Food Security**

*I Nyoman Anggie Prathista\*, I Putu Fadya Rachmawan, Gusti Putu Surya Govinda Atmaja, Manikharda, Andriati Ningrum*

**Green Extraction Methods for Polyphenol as Active Compound from Cocoa Bean Shell**

*Anggraeni Intan Maharani\*, Riska Amalia Abrianti, Novita Dyah Pitaloka, Aryanis Mutia Zahra, Siti Mariyam*

**Effect of Gibberellic Acid and Chitosan Foliar Application on The Growth and Yield of Spinach (*Spinacia Oleracea*) using Nutrient Film Technique (NFT) Hydroponic System**

*Norhafizah Md Zain\*, Nadzirah Adnan, Zainah Md Zain*

**Utilization of Turpentine Oil for Jet Fuel as Renewable Energy**

*Adninda Hindun Alfiah\*, Abdel Mulki Al Hafizh, Rutmauli Hutabarat, Hendrix Yulis Setyawan, STP. M.Si, Ph.D*

**"Solar Charge-Based Technology Innovation of Smart Counter Tool as an Effort to Collect the Growth of Hyacinth (*Eichhornia Crossipes*)"**

*Fadila\*, Dwi Mentari Thamsyul, Nur Azni, Dr. Abdul Azis S.Stp., M.Si., Husnul Mubarak.Stp., M.Si.*

**HUGI(BOX)CINE: Eco-Package-Recipient Utilize Solar Cell with UVC and Disinfectant**

*Yubi Hartono\*, Ni Putu Eka Dwi Yanti, Oki Trisna Sekar Arum, Dr. Dimas Firmanda Al Riza, Joko Prasetyo, S.TP., M.si*

**Mulch Your Garden: Using Organic Mulching from Seaweeds**

*Dk. Nasriah Rabiatal Adawiyah Pg Abdul Karim, Amanda Liew Wei Yi, Nurul Aqilah Asyahirah Hj Abd Aziz, Faizah Metali\**

**Crop Waste Hydrogel Factory Management Utilizing IOT System for Sustainable Water Scarcity Solution**

*Meutia Cahya Kusuma\*, Nadya Hafidzatun Nisa, Esti Krisjulianingrum, Aryanis Mutia Zahra, Radi*

**Zeofilt: Development of Hexagonal Zeolite Filter for Improving Water Quality in Tertiary Irrigation Channel**

*Yosia Sinthabella\*, Bondan Satria Pamungkas, Hilyatanta Fiddaril Izza, Ngadisih, Chandra Setyawan*

