



**UPM**  
UNIVERSITI PUTRA MALAYSIA  
BERILMU BERBAKTI

# IKP NEWSLETTER

## IN THIS ISSUE

**NEW TOP MANAGEMENT OF IKP**

**PUTRA PLANTATION FORUM SERIES-10**

## ABOUT US

### INSTITUTE OF PLANTATION STUDIES (IKP)

The establishment of Institute of Plantation Studies (IKP) was approved by the Department of Higher Education, Malaysia in 2004 to become Center of Excellence for the advancement of plantation and agricultural agrotechnology and problem solving to commodity crops issues.

IKP was reactivated in October 2014 with two (2) laboratories, i) Laboratory of Plantation Science and Technology and ii) Laboratory of Plantation Policy and Economy. Since then, research on plantation crops especially plant protection and disease control were actively carried out.

On 5<sup>th</sup> May 2020, JPU has approved the restructuring of three (3) Research Laboratories; i) Laboratory of Sustainable Agronomy Crop Protection, ii) Laboratory of Plantation System Technology and Mechanization and iii) Laboratory of Processing and Product Development to cover the upstream, midstream and downstream activities of plantation crops.

The plantation crops are Palm Oil, Rubber, Cocoa, Tea, Pepper, Coconut and Pineapple. IKP brings together researchers of different expertise in UPM to assist the plantation industry and government-related agencies in improving their capability and sustainability in addressing various issues and challenges.

For more information on IKP, please visit us at:



[ikp.upm.edu.my](http://ikp.upm.edu.my)



Institut Kajian Perladangan,  
Universiti Putra Malaysia



KajianUpm

## WORD FROM THE DIRECTOR

### PROF. DR. ROBIAH YUNUS



It gives me great pleasure to welcome the 2020 issue of the IKP Newsletter, as an opportunity to share the Institute's exciting transformation with our colleagues, students and plantation industries. In 2015, IKP assumed the space, the staff, and part of the equipment from Laboratory of Plantation Crops at the Institute of Tropical Agriculture.

Unlike the former IKP, a newly transformed IKP is to be a more ambitious university-level Institute, with niche areas covering all aspects of upstream and downstream activities of plantation crops. IKP is an institute that brings together researchers of different expertise in UPM to assist Malaysian plantation industry and government-related agencies in plantation crops. Three laboratories have been established namely Laboratory of Sustainable Agronomy and Crop Protection (SACP), Laboratory of Plantation System Technology and Mechanization (PSTM), Laboratory of Processing and Product Development (PPD).

While SACP focuses more on the upstream activities; crops agronomy, pest and disease management, system biology and genomics, PSTM covers the mechanization & automation, smart farming technology and IoT in plantation industry. On the other hand, the downstream activities at PPD comprises of production of green products for food and industrial uses, development of environmental friendly processing technology and biomass utilization.

It is a special privilege for me to be associated with an institute of such an important agenda in UPM. UPM is the top agriculture university in Malaysia and in the region, and more than ever so in research and education in agriculture and related areas. IKP strives to become the centre of excellence for plantation industry through creation of knowledge, discovery of new technologies and postgraduate studies in plantation crops.

Since my arrival at IKP, I was fully engaged in the transformation process of IKP and designations of new staff. Unfortunately, due to Covid-19 pandemic, we can only organise few workshops and seminars, which are mostly held online. I am delighted to share the first outcomes of that process in this Newsletter.

IKP has recently selected their new research associates (RA) and interim RA among the outstanding scholars based on their expertise in plantation crops from various faculties in UPM. Our first roundtable meeting of RAs and IKP management to chart the future direction of IKP was scheduled in October 2020 but had to be postponed due to RMCO and CMCO announcement by the government. The meeting plans to explore agendas for researching the extraordinary diversity and interdisciplinary components of upstream, midstream and downstream activities in plantation industry. I hope that you will enjoy reading further about IKP in the following pages.

AGRICULTURE • INNOVATION • LIFE

**B**ERILMU BERBAKTI  
WITH KNOWLEDGE WE SERVE

## MAIN HIGHLIGHT | NEW TOP MANAGEMENT OF IKP



**DIRECTOR**

**Prof. Dr. Robiah Yunus** is a professor of Chemical Engineering. Her expertise is in palm oil products and process development, biofuel and green technology. She received her BSc degree from University of Alabama, USA and PhD in Chemical Engineering from Universiti Putra Malaysia. Prof. Dr. Robiah is a Fellow of the Academy of Sciences, Malaysia and Fellow for Institution of Chemical Engineers, UK.



**DEPUTY DIRECTOR**

**Prof. Dr. Wong Mui Yun** is a professor of Plant Pathology and Biotechnology. She received her Bachelor of Science from Universiti Pertanian Malaysia and PhD in Plant Pathology and minor in Biotechnology from North Carolina State University, USA. Her research areas include Molecular Plant Pathology and Sustainable Pest Management.



**HEAD  
Laboratory of  
Sustainable  
Agronomy &  
Crop Protection**

**Assoc. Prof. Dr. Khairulmazmi Ahmad** is a lecturer of Plant Pathology. He received his Bachelor of Science in Bioindustry and PhD in Plant Pathology from Universiti Putra Malaysia. His research areas include Plant Disease Epidemiology, Innovative Disease Control Technology and Disease Etiology.



**HEAD  
Laboratory of  
Plantation System  
Technology and  
Mechanization**

**Assoc. Prof. Dr. Nazmi Mat Nawi** is a lecturer of Agricultural Mechanization and Non-destructive Quality Measurement. He received his Bachelor of Engineering from Universiti Putra Malaysia and PhD in Agricultural Engineering from University of Southern Queensland, Australia. His research areas include Farm Machinery Design, Post-Harvest Engineering, Non-Invasive Assessment of Fruit Quality and Emergency Response and Planning.



**HEAD  
Laboratory of  
Processing and  
Product  
Development**

**Assoc. Prof. Dr. Mohd Rafein Zakaria** is a lecturer of Environmental Biotechnology. He received his Bachelor of Science from Universiti Putra Malaysia and PhD in Environmental Biotechnology from Universiti Putra Malaysia. His research areas include Biomass Hydrothermal Treatment and Utilization, Wastewater Treatment for Biogas Generation, Polyhydroxyalkanoates and Biosurfactants.

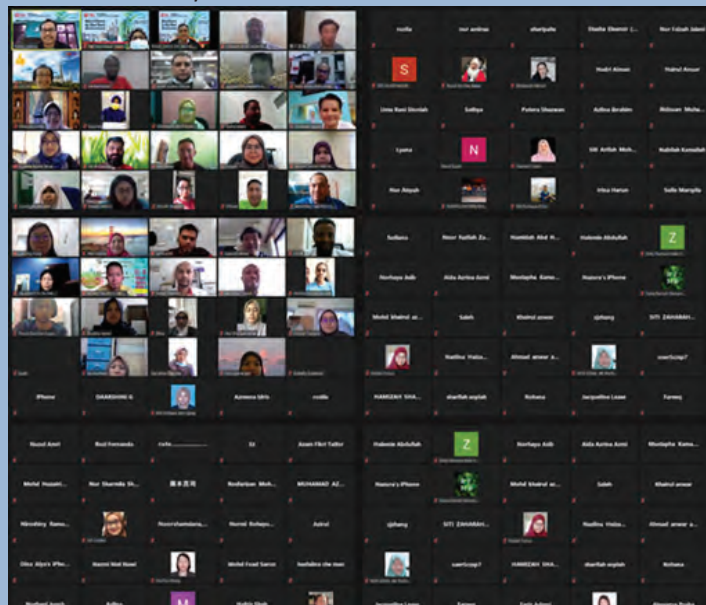
## HIGHLIGHT | PUTRA PLANTATION FORUM SERIES-10

Institute of Plantation Studies, Universiti Putra Malaysia (UPM) has organized a public lecture, the 10th series from the Putra Plantation Forum Series with the title "Biorefinery in The New Bioeconomy" on 9<sup>th</sup> December via an online platform. The public lecture was delivered by a prominent scientist, Professor Dato' Dr. Mohd Ali Hassan, Head of Biomass and Biorefinery Laboratory, and Head of Environmental Biotechnology Research Group, UPM. He is currently the Chair of the Asian Federation of Biotechnology- Malaysia Chapter and member of Board of Directors, UPM.

He highlighted the benefits of the discovery of suitable technologies to be used in the palm oil industry for the future sustainability of our planet. The focus is on developing green or environmental-friendly technologies with process integration, value-addition and pollution reduction towards a more sustainable future. New microbial biotechnology and bio-based products are developed within an integrated biorefinery to support the emerging bioeconomy, which could generate new industries and additional jobs in rural areas.

The utilisation and value-addition of tropical bioresources and biomass within the palm oil biorefinery for the production of new bio-based products in the new bioeconomy, including bioenergy,

biofertilizer and biomaterials could contribute to Malaysia economy. In conclusion, Professor Dato' Dr. Mohd Ali emphasized that this green initiative addressed all the three pillars of sustainability, i.e. profit, people and planet, to achieve a win-win-win outcome for future sustainability!





# ACTIVITIES



## VISIT FROM ALL COSMOS INDUSTRIES SDN. BHD.

10<sup>th</sup> July - IKP received a visit from All Cosmos Industries Sdn. Bhd. led by Mr. Wan Azha Wan Mustapha (Project Manager). A meeting was held with All Cosmos Industries Sdn. Bhd. which was attended by Dr. Chai Ee Wen (Assistant Project Manager) and Mr. Charles Then (Assistant R&D Manager). The purpose of this meeting was to discuss opportunities for collaboration between IKP and All Cosmos Industries Sdn. Bhd.

## VISIT WITH FELDA TEAM TO BESTEEL BERHAD

10<sup>th</sup> September - Prof. Dr. Robiah Yunus joined the visit with FELDA team to BESTEEL Berhad, the leading manufacturer of palm oil mills. The visit was led by Dato' Seri Idris bin Jusoh, Chairman of the Federal Land Development Authority (FELDA).

BESTEEL Berhad is a world leader in the design, construction, installation, and commissioning of palm oil mills. They constructed more than a hundred (100) palm oil mills, collectively, throughout Malaysia, Indonesia, Thailand, Cambodia, Papua New Guinea, Cameroon, Sierra Leone, Congo, Ghana, Sao Tome, and Brazil.

BESTEEL has invented the Tilting Sterilizer for sterilizing oil palm fresh fruit bunches (FFB) which offers less investment cost, less labour, less maintenance, and ease of operation. To-date, BESTEEL has installed more than sixty (60) palm oil mills of various capacities with the award-winning Tilting Sterilizer.



## NETWORKING VISIT TO MALAYSIAN PALM OIL BOARD (MPOB), BANGI

14<sup>th</sup> September - The visit was led by Prof Dato' Dr. Zulkifli Idrus, Deputy Vice Chancellor (Research and Innovation) of UPM accompanied by Prof. Dr. Robiah Yunus, Director, Institute of Plantation Studies together with IKP's top management to MPOB's Head Office, Bangi. Dr. Ahmad Parveez Haji Ghulam Kadir, Director General of MPOB welcomed the delegates from IKP. The visit aimed at establishing corporate networking and potential research collaborations between IKP and MPOB.

## TECHNICAL VISIT TO SIME DARBY PLANTATION BERHAD, CAREY ISLAND, KLANG

24<sup>th</sup> September - Prof. Dr. Robiah Yunus, accompanied by the top management members of the institute visited the Research Centre of Sime Darby Plantation Berhad (SDPB) in Carey Island, Klang.

The visit was welcomed by the Director of SDPB, Dr. Harikrishna Kulaveerasingam and the senior researchers of the centre. The visit was initiated to strengthen the existing research collaborations between IKP and SDPB. From the visit, both parties agreed to explore more research opportunities and work together in the future for the betterment of the oil palm industry in Malaysia.







## COLLABORATION PROJECT TO DEVELOP MECHANIZATION SYSTEM FOR LEMONGRASS

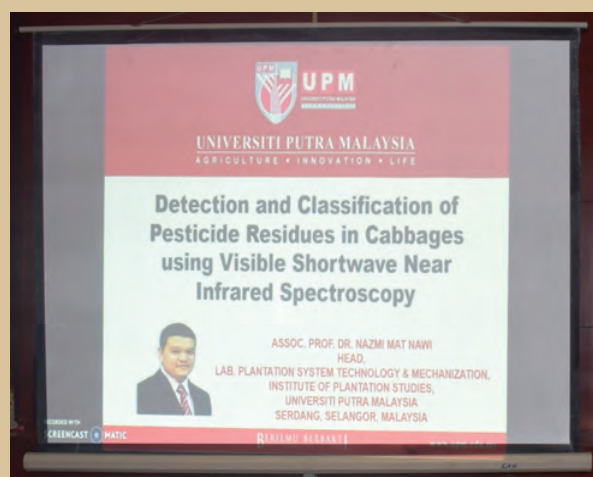
26<sup>th</sup> September – The head of Laboratory of Plantation System Technology and Mechanization (PSTM), Associate Professor Dr. Nazmi Mat Nawi was invited to attend the annual general meeting of Pertubuhan Peladang Kawasan (PPK) Bakri, in Muar, Johor. Dr. Nazmi was accompanied by three members of the laboratory – Professor Ir. Dr. Azmi Yahya, Dr. Ahmad Suhaizi Mat Su and Dr. Muhammad Saufi Mohd Kassim.

The meeting was officiated by the Director of National Farmers Organization (NAFAS) Johor, Dato' Sawalludin Ahmad. During the meeting, the Chairman of the Board of Directors (PPK Bakri), Tuan Haji Md Rasid Suib, handed over an offer letter to Dr. Nazmi for the collaboration project to design and develop an appropriate mechanization system for lemongrass growers in Muar.

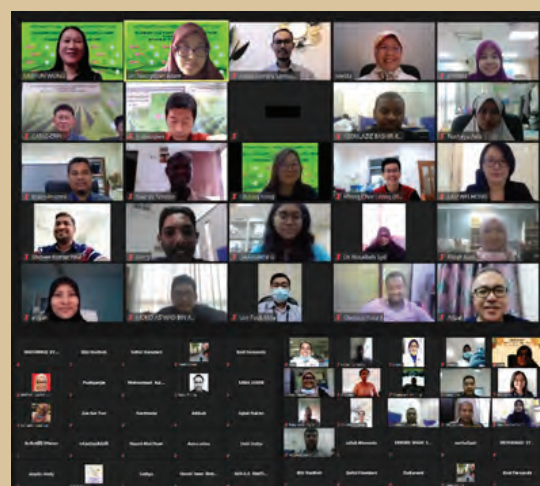
## PARTICIPATION AS KEYNOTE SPEAKER AT PFCC 2020

6<sup>th</sup>–8<sup>th</sup> November – Assoc. Prof. Dr. Nazmi Mat Nawi has participated and delivered a keynote speech entitled “Detection and Classification of Pesticide Residue Presence on Round Cabbages Using Visible Shortwave Near Infrared Spectroscopy” in the International Conference on Pesticide, Fertilizers and Crop Cultivation (PFCC 2020) in Xiamen, China.

The conference was organized by the Engineering Information Institute and co-sponsored by the Scientific Research Publishing. It dedicates to creating a stage for exchanging the latest research results and sharing the advanced research methods.



## INTERNATIONAL WEBINAR UPM-EPPI 2020



10<sup>th</sup> December – Institute of Plantation Studies (IKP) in collaboration with Department of Plant Protection, Faculty of Agriculture and Institute of Tropical Agriculture and Food Security (ITAFoS), UPM had successfully organized The International Webinar UPM-EPP1 2020 via Zoom Platform. This webinar was also co-organized by the Environment and Plant Protection Institute (EPPI), Chinese Academy of Tropical Agricultural Sciences (CATAS), Hainan, China. With the theme “Sustainable Crop Protection in Protecting Plant Health”, the webinar was organized in conjunction with the International Year of Plant Health 2020. This one-day webinar aimed to provide a platform for sharing new research developments in the field of Plant Protection and networking with researchers from relevant fields in UPM and EPPI as well as to facilitate discussion on research collaboration in sustainable tropical crop protection.



## IKP JOURNAL WRITING WORKSHOP

**UPM**  
UNIVERSITI PUTRA MALAYSIA  
INSTITUTE OF PLANTATION STUDIES

ikp.upm.edu.my  
Institut Kajian Perladangan,  
Universiti Putra Malaysia  
KajianUpm

SCAN TO REGISTER

**Step-by-step Approach to Manuscript Writing and Publishing**

**Prof. Dr. Tan Chin Ping**  
Profesor, Faculty of Food Science and Technology

**16 December 2020 (Wednesday) • 10.00-12.00 pm**

Tentative Programme:  
09:45-10:00: Registration  
10:00-11:30: Presentation  
11:30-12:00: Q&A Session

Please register at:  
<https://forms.gle/tiH8u7XgQdajGa2r8>

**PERTANIAN • INOVASI • KEHIDUPAN**

UniPutraMalaysia @UPutraMalaysia UniPutraMalaysia UniversitiPutraMalaysia  
www.upm.edu.my

**BERILMU BERBAKTI**  
WITH KNOWLEDGE WE SERVE

16<sup>th</sup> December - Institute of Plantation Studies had successfully organized "Step-by-step Approach to Manuscript Writing and Publishing" Workshop via Zoom Platform. The workshop was facilitated by Prof. Dr. Tan Chin Ping, a renowned Professor at the Department of Food Technology, Faculty of Food Science and Technology, Universiti Putra Malaysia. To date, he has published one joint-edited book, ten book chapters and over 380 scientific articles in peer-reviewed journals. His published works have been cited more than 9000 times, with H-index 48 ([www.scopus.com](http://www.scopus.com)).

Prof. Tan was the recipient of the 2010 ProSPER.Net Scopus Young Scientist Award and recognised as one of the Top Research Scientists Malaysia (TRSM) by the Academy of Sciences Malaysia (ASM). This workshop aimed to provide opportunities for participants to obtain tips on publishing high-impact manuscripts and to improve quality of research papers. Through this workshop participants obtained practical insights on scientific manuscript writing starting from budding ideas to step by step efforts leading to publication.

## IKP RESEARCH SEMINAR SERIES 1-4/2020

In 2020, IKP has successfully organized four series of IKP Research Seminars online. The main objectives are to share the latest information or/and research findings of plantation crops in Malaysia and to promote the roles/aims of IKP to become the centre of excellence for plantation industry through creation of new knowledge and discovery of new technologies in plantation crops. This seminar series is the best avenue to exchange new technical knowledge and ideas among participants.

**UPM**  
UNIVERSITI PUTRA MALAYSIA  
INSTITUTE OF PLANTATION STUDIES

**Institute of Plantation Studies**  
Research Seminar - Series 1

**Prof. Dr. Robiah Yunus**

Title:  
**R & D on Bio-based Products:  
Capitalizing Palm Oil Full Potential**

12 August 2020  
(Wednesday)  
10.00 a.m - 11.00 a.m

Join us at:  
Zoom Meeting ID: 913 8784 8483  
Password: 8KASIRI

**UPM**  
UNIVERSITI PUTRA MALAYSIA  
INSTITUTE OF PLANTATION STUDIES

**Institute of Plantation Studies**  
Research Seminar - Series 2/2020

**Prof. Dr. Wong Mui Yun**

**Plant Immunity: Towards Sustainable Crop Protection**

Date: 30 September 2020  
Time: 10:00 a.m - 11:00 a.m  
ID: 905 475 2665 Password: ikpseminar

**UPM**  
UNIVERSITI PUTRA MALAYSIA  
INSTITUTE OF PLANTATION STUDIES

**Institute of Plantation Studies**  
Research Seminar - Series 3/2020

**Assoc. Prof. Dr. Khairulmazmi bin Ahmad**

**Innovative Plant Disease Control Technology in Agriculture**

Date: 10 November 2020  
Time: 10:00 a.m - 11:00 a.m

**UPM**  
UNIVERSITI PUTRA MALAYSIA  
INSTITUTE OF PLANTATION STUDIES

**INSTITUTE OF PLANTATION STUDIES**  
Research Seminar Series 4/2020

**OIL PALM BIOMASS SUGAR PLATFORM:  
POTENTIAL AND CHALLENGES**

**Assoc. Prof. Dr. Mohd Rafein Zakaria**

22 December 2020 • 10.00am - 11.00am

**PERTANIAN • INOVASI • KEHIDUPAN**

UniPutraMalaysia @UPutraMalaysia UniPutraMalaysia UniversitiPutraMalaysia  
www.upm.edu.my

**BERILMU BERBAKTI**  
WITH KNOWLEDGE WE SERVE

## INVITATION AS SPEAKER AND KEYNOTE SPEAKER

Prof. Dr. Robiah was invited as one of the speakers in a forum organized by Sustainable Process & Environment Research Centre (SPERC); Department of Chemical & Environmental Engineering, Faculty of Engineering and Agro Technology Innovation Centre (PIAT), Universitas Gadjah Mada on 11<sup>th</sup> December.

She was also invited as Keynote speaker at Future-Proofed Palm Oil 2020 International Summit & Exhibition organized by Confexhub on 15<sup>th</sup> December.

**WEBINAR SERIES**  
The Route to Sustainability:  
**PROSPECTS AND CHALLENGES OF BIO-BASED ECONOMY**

**11/12/2020 (Friday)**  
2.15 - 4.30 pm (MYT)

**Assoc. Prof. Dr. Mohd Razif Harun**  
DEPARTMENT OF CHEMICAL & ENVIRONMENTAL ENGINEERING,  
UNIVERSITI PUTRA MALAYSIA

**SPEAKERS**

- Assoc. Prof. Dr. Eko Agus Supomo  
LECTURER  
CENTRE OF ENERGY STUDY,  
FACULTY OF BIOLOGY,  
UNIVERSITAS GADJAH MADA
- Prof. Dr. Robiah Yunus  
DIRECTOR  
INSTITUTE OF PLANTATION STUDIES,  
UNIVERSITI PUTRA MALAYSIA
- Prof. Dr. Yusril Yusuf  
PROFESSOR  
FACULTY OF MATHEMATICS & NATURAL SCIENCES,  
UNIVERSITAS GADJAH MADA
- Prof. Ir. Dr. Wan Azlina Wan Ab Karim Ghani  
HEAD  
SUSTAINABLE PROCESS & ENVIRONMENTAL RESEARCH CENTRE (SPERC),  
UNIVERSITI PUTRA MALAYSIA

2.15-2.30 pm: Registration  
2.30-3.00 pm: Introduction & Welcoming Remarks  
3.00-4.30 pm: Session 1: Forum  
4.00-4.30 pm: Session 2: Q&A

Please register at:  
<https://bit.ly/2p6Qw8B>

Organized by:  
• Sustainable Process & Environment Research Centre (SPERC),  
Universiti Putra Malaysia  
• Department of Chemical & Environmental Engineering,  
Faculty of Engineering, Universiti Putra Malaysia  
• Agro Technology Innovation Centre (PIAT), Universitas  
Gadjah Mada

Co-organized by:  
• Institute of Plantation Studies, Universiti Putra Malaysia

**PERTANIAN • INOVASI • KEHIDUPAN**

UniPutraMalaysia @UPutraMalaysia UniPutraMalaysia UniversitiPutraMalaysia  
www.upm.edu.my

**BERILMU BERBAKTI**  
WITH KNOWLEDGE WE SERVE

**FUTURE-PROOFED PALM OIL**  
Future-Proofed Palm Oil 2020  
International Summit & Exhibition  
14 - 17 December 2020 | 2.00pm - 3.00pm (GMT+8)

**SESSION 2: UNLOCKING HIDDEN YIELDS WITHOUT HECTARAGE EXPANSION**

**15 DECEMBER 4:30PM**  
Paper 12: Improve Production Through Deployment of Advanced Palm Oil Milling Technologies

**Prof Dr Robiah Yunus**  
Chief, Research, Director, Institute of Plantation Studies and Professor, Bioproducts and Technology Research Group, Department of Chemical and Environmental Eng., Faculty of Engineering, Universiti Putra Malaysia

[www.futureproofedpalmoil.com](http://www.futureproofedpalmoil.com)

## LIST OF PUBLICATIONS IN Q1/Q2 JOURNALS 2020

NO.	AUTHORS	ARTICLE TITLE	JOURNAL
1.	Wohdi M.H., Shamsudin, R., <b>Yunus, R.</b> , Alsultan, G.A., Iswardi, A.H.	Centrifugal separation-assisted and extraction of crude palm oil from separated mesocarp fibre: central composite design optimization	Journal of Food Processing Engineering
2.	Aziz, N.A.M., Hamid, H.A., <b>Yunus, R.</b> , Abbas, Z., Omar, R., Rashid, U., Syam, A.M.	Kinetics and thermodynamics of synthesis of palm oil-based trimethylolpropane triester using microwave irradiation	Journal of Saudi Chemical Society
3.	Nur Atiqah Mohamad Aziz, <b>Robiah Yunus</b> , Hamidah Abd Hamid, Alsultan Abdul Kareem Ghassan, Rozita Omar, Umer Rashid, Zulkifly Abbas	An acceleration of microwave-assisted transesterification of palm oil-based methyl ester into trimethylolpropane ester	Scientific Reports
4.	<b>Robiah Yunus</b> , Hussein Rasheed, Nurin Wahidah Mohd Zulkifli	Wear and friction behavior of semi synthetic engine oil blended with palm oil /TMP ester and nano glass powder additive	Journal of Tribology
5.	N.A. Zulkipli, <b>Robiah Yunus</b> , Zurina Zainal Abidin, Bo Yuan Lim	Effect of Ultrasonic-Assisted Acid Pretreatment on a Production of Levulinic Acid Through Acid Hydrolysi	Social Science Research Network
6.	Dina Kania, <b>Robiah Yunus</b> , Rozita Omar, Suraya Abdul Rashid, Badrul Mohamed jan, Akmal Aulia	Wear and friction behavior of semi synthetic engine oil blended with palm oil /TMP ester and nano glass powder additive	Journal of Tribology
7.	Z.N Akhlisah, <b>R. Yunus</b> , Z.Z. Abidin, B.Y. Lim, D. Kania	Pretreatment methods for an effective conversion of oil palm biomass into sugars and high-value chemicals. Biomass and Bioenergy	Biomass and Bioenergy
8.	Azizul Isha, Nor Azah Yusof, Khozirah Shaari, Rosiah Osman, Siti Nor Akmar Abdullah, <b>Mui-Yun Wong</b>	Metabolites identification of oil palm roots infected with <i>Ganoderma boninense</i> using GC-MS-based metabolomics	Arabian Journal of Chemistry
9.	Nisha Govender, Idris Abu-Seman, <b>Wong Mui-Yun</b>	Root Lignin Composition and Content in Oil Palm ( <i>Elaeis guineensis</i> Jacq.) Genotypes with Different Defense Responses to <i>Ganoderma boninense</i>	Agronomy
10.	Waheeda Parvin, Nisha Govender, Radziah Othman, Hawa Jaafar, Mahbubur Rahman and <b>Mui-Yun Wong</b>	Phenazine from <i>Pseudomonas aeruginosa</i> UPMP3 induced the host resistance in oil palm ( <i>Elaeis guineensis</i> Jacq.)- <i>Ganoderma boninense</i>	Scientific Reports
11.	Nurhamizah Rahmat, Nor Azah Yusof, Azizul Isha, <b>Wong Mui-Yun</b> , Roozbeh Hushiaran, and Fowotade Sulayman Akanbi	Detection of Stress Induced by <i>Ganoderma boninense</i> Infection in Oil Palm Leaves using Reduced Graphene Oxide and Zinc Oxide Nanoparticles Screen-Printed Carbon Electrode	IEEE Sensors Journal
12.	Fook-Hwa Lim, Omar Abd Rasid & Ghulam Kadir Ahmad Parveez, Abdul Wahab Mohd As'wad, Ganesan Vadamalai & <b>Mui-Yun Wong</b>	The future is now: revolution of RNA-mediated gene silencing in plant protection against insect pests and diseases	Plant Biotechnology Reports
13.	Parisa Azizi, <b>Mohamed M. Musa</b> , Mahbod Sahebi, Jennifer A. Harikrisna, Sima Taheri, Ali Yassoralipour, Abbas Nasehi	Epigenetic changes and their relationship to somaclonal variation: a need to monitor the micropropagation of plantation crops	Functional Plant Biology



NO.	AUTHORS	ARTICLE TITLE	JOURNAL
14.	Muhammad I.I., Munusamy U., Kong S.L., <b>Abdullah, S.N.A</b>	RNA-seq and CHIP-seq as complementary approaches for comprehension of plat transcriptional regulatory mechanism	International Journal of Molecular Science
15.	Moradpour M., <b>Abdulah S.N.A.</b>	CRISPR/dCas9 platforms in plants: strategies and applications beyond genome editing	Plant Biotechnology Journal
16.	A.Abdullahi, <b>A.Khairulmazmi</b> , S.Yasmeen, I.S Ismail, A.Norhayu, M.R.Sulaiman, O.H Sulaiman, M.R. Ismail	Phytochemical profiling and antimicrobial activity of ginger ( <i>Zingiber officinale</i> ) essential oils against important phytopathogens	Arabian Journal of Chemistry
17.	Md Imam Hossain, <b>Khairulmazmi Ahmad</b> , Yasmeen Siddiqui, Norsazilawati Saad, Ziaur Rahman, Ahmed Osumanu Haruna, Siti Khairunniza Bejo	Current and Prospective Strategies on Detecting and Managing <i>Colletotrichum falcatum</i> Causing Red Rot of Sugarcane	Agronomy
18.	Akinola Adekoya Alafiatayo, Kok-song Lai, Syahida Ahmad, Maziah Mahmood, <b>Noor Azmi Shaharuddin</b>	RNA-Seq analysis revealed genes associated with UV-induced cell necrosis through MAPK/TNF- $\alpha$ pathways in human dermal fibroblast cells as an inducer of premature photoaging	Genomics
19.	Rambod Abiri, Narges Atabaki, Hazandy Abdul-Hamid, Ruzana Sanusi, Nor Aini Ab Shukor, <b>Noor Azmi Shaharuddin</b> , Siti Aqlima AhmadSonia Malik	The Prospect of Physiological Events Associated with the Micropropagation of <i>Eucalyptus</i> sp.	Forests
20.	N.A.Husin, <b>S. Khairunniza Bejo</b> , A.F. Abdullah, M.S.M. Kassim, D. Ahmad	Study of the oil palm crown characteristics associated with Basal Stem Rot (BSR) disease using stratification method of point cloud data	Computers and Electronics in Agriculture
21.	Nur A. Husin, <b>Siti Khairunniza Bejo</b> , Ahmad F. Abdullah, Muhamad S. M. Kassim, Desa Ahmad, Mohd H. A. Aziz	Classification of Basal Stem Rot Disease in Oil Palm Plantations Using Terrestrial Laser Scanning Data and Machine Learning	Agronomy
22.	Imran Shabbir, <b>Mohd Yusoff Abd Samad</b> , Radziah Othman, Mui-Yun Wong, Zulkefly Sulaiman, Noraini Md Jaafar, Syed Asad Hussain Bukhari	White root rot disease suppression in rubber plant with microbial co-inoculants and silicon addition	Rhizosphere
23.	Imran Shabbir, <b>Mohd Yusoff Abd Samad</b> , Radziah Othman, Mui-Yun Wong, Zulkefly Sulaiman, Noraini Md Jaafar, Syed Asad Hussain Bukha	Evaluation of bioformulation of <i>Enterobacter</i> sp. UPMSSB7 and mycorrhizae with silicon for white root rot disease suppression and growth promotion of rubber seedlings inoculated with <i>Rigidoporus microporus</i>	Biological Control
24.	Yuvarani Naidu, <b>Yasmeen Siddiqui</b> , Abu Seman Idris	Comprehensive studies on optimization of ligno-hemicellulolytic enzymes by indigenous white rot hypenomyces under solid-state cultivation using agro-industrial wastes	Journal of Environment Management
25.	Paa K. Bardoh, Asgar Ali, Matthew Dickinson, <b>Yasmeen Siddiqui</b>	Antimicrobial affect of rhizome and medicinal herb extract in controlling postharvest anthracnose of dragon fruit and their possible phytotoxicity	Scientia Horticulturae
26.	Paa K. Bardoh, Asgar Ali, Matthew Dickinson, <b>Yasmeen Siddiqui</b> , Gianfranco Romanazzi	A review on the management of postharvest anthracnose in dragon fruits caused by <i>Colletotrichum</i> spp.	Crop Protection

## GET TO KNOW | SACP RESEARCH ASSOCIATES

Laboratory of Sustainable Agronomy and Crop Protection (SACP) focuses on the upstream activities of IKP; crops agronomy, pest and disease management, system biology and genomics.



**Prof. Datuk Dr. Mad Nasir Shamsudin** is a professor of Agricultural and Resource Economics. He received his Bachelor of Science from Louisiana State University, USA and PhD in Agricultural Economics and minor in Statistics from Mississippi State University, USA. His research areas include International Agricultural Trade Policy, Commodity Market Analysis, and Agro-environmental Economics.



**Prof. Datin Dr. Siti Nor Akmar Abdullah** is a professor of Plant Molecular Biology. She received her Bachelor of Science from La Trobe University, Australia, and PhD in Plant Molecular Biology from University of East Anglia/John Innes Centre, United Kingdom. Her research focuses on yield and quality improvement, enhancing nutrient uptake and disease tolerance in palms focusing on oil palm and coconut.



**Assoc. Prof. Dr. Sabrina Ho Yuek Ming Abdullah** is a lecturer of Environmental Education, Environmental Resource Management, and Social and Educational Research. She received her Bachelor of Science from Universiti of Malaya and PhD in Environmental Education from Universiti Putra Malaysia. Her research areas include Environmental Education, Education for Sustainable Consumption and Production (ESCP), Case Studies in Environmental Studies, Sustainable Cities, Urban Sprawl.



**Assoc. Prof. Dr. Noliha Mohd Nawi** is a lecturer of Agribusiness Marketing. She received her Bachelor of Science from Universiti Putra Malaysia and PhD in Agribusiness from Curtin University Western Australia. Her research areas include Agribusiness Marketing, Relationship Marketing and Supply Chain Management.



**Assoc. Prof. Dr. Ganesan Vadmalai** is a lecturer of Plant Pathology (Virology). He received his Bachelor of Science from Universiti Pertanian Malaysia and PhD in Plant Virology from The University of Adelaide, Australia. His research areas include plant diseases caused by viruses and phytoplasma, Epidemiology and Diagnosis of plant virus.



**Assoc. Prof. Dr. Noor Azmi Shaharuddin** is a lecturer of Plant Biochemistry and Biotechnology. He received his Bachelor of Science from Universiti Kebangsaan Malaysia and PhD in Plant Science from University of Nottingham, Nottingham. His research areas include Plant Biochemistry, Plant Science and Plant Biotechnology.



**Assoc. Prof. Dr. Mohd Yusoff Abd Samad** is a lecturer of Biofertilizer Development. He received his Bachelor of Science from Universiti Pertanian Malaysia and PhD in Microbial Technology from Universiti Putra Malaysia. His research area is related to Minor Industrial Plantation Crops.



**Assoc. Prof. Dr. Zulkefly Sulaiman** is a lecturer of Agronomy. He received his Bachelor of Science from Universiti Pertanian Malaysia and PhD in Agroforestry/Agronomy from Massey University, New Zealand. His research areas include Agronomy, Plantation Crops and Agroforestry and Bio-fertiliser.

## EDITORIAL BOARD

**Advisors** | Prof. Dr. Robiah Yunus and Prof. Dr. Wong Mui Yun

**Editor-in-Chief** | Assoc. Prof. Dr. Khairulmazmi Ahmad

**Editors** | Assoc. Dr. Mohd Rafein Zakaria and Assoc Prof. Dr. Nazmi Mat Nawi

**Editorial Unit** | Dr. Kong Lih Ling, Dr. Zailani Khuzaimah, Dr. Fariz Adzmi and Mrs Siti Nooradzah Adam

**Creative Unit** | Mrs Siti Nooradzah Adam and Mrs Nurul Ain Zubaidah Mohamad Maliki