



**INSTITUT  
KAJIAN PERLADANGAN**  
INSTITUTE OF PLANTATION STUDIES

# IKP NEWSLETTER

## FOREWORD FROM THE DIRECTOR

**PROF. TS. DR. SITI KHAIRUNNIZA BEJO**



It gives me great pleasure to introduce the latest edition of the IKP Newsletter, one of our key platforms for sharing the exciting transformations and achievements of the institute with our colleagues, industry partners, and stakeholders. In this edition, we celebrate the spirit of innovation, the pursuit of knowledge, and the collective impact of our vibrant community. As we turn the page to 2025, we extend our heartfelt thanks for being part of our journey.

The past year was filled with challenges, growth, and remarkable achievements, and your support made it all possible. In 2024, IKP continued to demonstrate excellence in research and innovation, proudly recording 45 publications, including 18 in Q1 and Q2 journals and securing two active intellectual properties. Our research efforts were supported by RM2.09 million in active grants, 91% of which were secured externally, demonstrating strong engagement with industry partners.

Our impact extended beyond academia. Through RM757,113 in industry-driven grants and innovations, of which 97% from industry sources, IKP strengthened its role in knowledge transfer via conferences, training, and consultancy. We launched the IKP Postgraduate Club, enriching the academic and social experiences of our graduate students. Our researchers contributed as visiting professors, keynote speakers, editorial board members, and consultants, further enhancing IKP's visibility and influence. We also expanded our global footprint, signing eight new MoUs and hosting impactful conferences and webinars, reinforcing our strategic pillar of Global Prominence.

Looking ahead, we have developed a robust strategic plan to guide our future direction, building on past achievements while laying the foundation for tactical actions that ensure effective governance, world-class learning and living experiences, impactful research, industry and community collaboration, and meaningful contributions to national and international plantation and commodity agendas.

We are especially excited to announce ICPTech 2025—the 3rd International Conference on Plantation Technology, scheduled for 20–21 August 2025 in Malacca City, Malaysia. This premier event will bring together global experts, industry leaders, and academic pioneers to explore sustainable agronomy, smart farming, biobased innovations, and plantation policy, with a strong emphasis on mechanization, digitalization, and climate-smart agriculture. ICPTech 2025 promises to be a dynamic platform for knowledge exchange, collaboration, and strategic foresight, and we warmly invite all stakeholders to participate.

As a key entity within UPM in plantation crop and smart farming, our mission is to drive excellence in plantation communities by cultivating knowledge, pioneering transformative technologies, and nurturing postgraduate talent. As you explore this issue, we invite you to reflect on the milestones we have achieved together and the opportunities that lie ahead.

Let us continue to build bridges, spark ideas, and shape a future defined by excellence, innovation, and impact.



*"It always seems impossible until it's done."*  
- Nelson Mandela

## MAIN HIGHLIGHT

### KEY ACHIEVEMENTS IN 2024

 <p><b>01. Publications</b></p>	<p>45 publications 18 in Q1 &amp; Q2 journals</p>
<p>2 Intellectual Properties Active grants: RM2,091,838 91% external (RM1,901,838) including industrial grants</p>	 <p><b>02. Grants and Innovations</b></p>
 <p><b>03. Impact Generation</b></p>	<p>Total: RM757,113.00 97% industry (RM734,863.00) 3% community (RM22,250.00) via conferences, trainings &amp; consultancies</p>
<p>Established IKP Postgraduate Students Club (IKPPGSC)</p>	 <p><b>04. Academic</b></p>
 <p><b>05. Industry and Community Engagement</b></p>	<p>Industry: 37 Community: 3 University: 7</p>
<p>Recipient: Accountability Index Award (GOLD) Shortlisted: IDEA Innovation Award Recognised as: Visiting Professors, Keynote/Invited Speakers &amp; Journal Editorial Board member</p>	 <p><b>06. Awards and Recognition</b></p>
 <p><b>07. Initiatives</b></p>	<p>8 signed MoUs Organized international conference, seminars and forum</p>

### IKP 2025: THE NEXT LEAP FORWARD



HIGHLIGHTS

## COURTESY VISIT BY IRRDB TO UPM

SERDANG, 14<sup>th</sup> April – The Vice-Chancellor of UPM, YBhg. Dato' Prof. Dr. Ahmad Farhan Mohd Sadullah received a courtesy visit from the Secretary-General of the International Rubber Research and Development Board (IRRDB), Datuk Dr. Abdul Aziz S.A. Kadir at the Putra Chancellery Building, UPM. The IRRDB delegation was also joined by Mr. Tajuddin Ismail (IRRDB Fellow) and Mr. Irwan Hakim Dzulkifli (IRRDB Administrative Officer), who were also welcomed by representatives of the IKP, Prof. Ts. Dr Siti Khairunniza Bejo (Director of IKP) and Prof Dr Wong Mui Yun (Deputy Director of IKP).

The objective of this visit was to discuss further related to the Memorandum of Understanding (MoU), which will be signed by IRRDB and UPM. IRRDB is a non-governmental organization established in 1960 to promote international cooperation in natural rubber research and development, with the current membership of 20 natural rubber producing countries.

IRRDB's vision is in line with the thrust and focus of IKP, UPM, on the future of the Malaysian plantation industry. The collaboration between UPM and IRRDB is seen to open potential towards research collaboration, staff research attachment programs, conference organization, and attachment or internship programs for post-graduate students.

The signing of the MoU will be perceived as the commencement of a collaboration between UPM and IRRDB, which both parties could gain significant benefits. UPM learning opportunities are open to IRRDB member countries, and more intensive rubber research opportunities can be explored based on priorities and important issues in the rubber industry.



## IKP HIGHLIGHTS INNOVATIVE RESEARCH AT MICC2025



KOTA KINABALU, May 27<sup>th</sup> – The Malaysia International Cocoa Fair 2025 (MICF2025) was successfully held from 24 to 27 May 2025 at the Sabah International Convention Center (SICC), Kota Kinabalu. In conjunction with the event, the Malaysian International Cocoa Conference 2025 (MICC2025) also took place, drawing experts and stakeholders from across the region. MICF2025 was organized by Malaysian Cocoa Board (MCB).

IKP demonstrated strong support for the event by sending six delegates to MICC2025. The participants included Prof. Ts. Dr. Siti Khairunniza Bejo (Director of IKP), Prof. Wong Mui Yun (Deputy Director), Ts. Dr. Anas Mohd Mustafah (Head of Laboratory of Plantation System Technology & Mechanization), Dr. Mahirah Jahari, Dr. Halimatun Saadiah Hafid and Mrs. Siti Nooradzah Adam.

IKP researchers showcased four oral research presentations during the conference:

- Bio-Based Innovations for Sustainable Cocoa Black Pod Disease Management by Prof. Wong Mui Yun
- Adoption of Digital Technology for Crop Protection Management by Prof. Ts. Dr. Siti Khairunniza Bejo
- Non-Destructive Techniques for Cocoa Maturity and Cocoa Pod Borer (CPB) Detection by Dr. Mahirah Jahari
- Potential of Microbit in the Cocoa Plantation Industry by Ts. Dr. Anas Mohd Mustafah

In addition to oral sessions, IKP also contributed through two poster presentations:

- Isolation and Characterization of Cellulose from Different Agricultural Biomass by Dr. Halimatun Saadiah Hafid
- Non-Destructive Estimation of Chlorophyll Content in Cocoa Leaves: Integrating SPAD and Spectral Data by Mrs. Siti Nooradzah Adam

The active participation and contributions from IKP underscored its commitment to advancing sustainable and digital innovations in the cocoa industry.

## IKP RETAINS EXCELLENCE IN OCCUPATIONAL SAFETY & HEALTH AUDIT 2025

SERDANG, 7<sup>th</sup> May – IKP has once again demonstrated its commitment to workplace safety and health by successfully undergoing a university-level Safety and Health Inspection (PKK) audit. A team of seven auditors from the Office of Occupational Safety and Health Management (PPKKP), led by Chief Auditor Ms. Nor Afida Miskam, conducted a comprehensive evaluation of IKP's facilities, laboratories, the transgenic greenhouse and administrative offices.

The audit assessed IKP's adherence to seven key components of safety regulations:

1. Compliance with the Fire Services Act: Fire Prevention System
2. Compliance with the Occupational Safety and Health Act 1994, UPM Occupational Safety and Health Manual 2010, and UPM Disaster Management Plan 2022
3. Compliance with the Factories and Machinery Act 1967
4. Compliance with the Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000 (USECHH Act)
5. Compliance with the Environmental Quality (Scheduled Wastes) Regulations 2005
6. Compliance with the Biosafety Act 2007
7. Review of Previous Actions Taken

While overall occupational safety and health management at IKP was rated as good, Ms. Nor Afida Miskam emphasized the need for improved chemical management, particularly concerning externally sourced chemicals that were not purchased through IKP.

IKP successfully maintained its EXCELLENT status, achieving a remarkable score of 99.30, an increase of 1.22 points from 2024. This outstanding result underscores the dedication and diligence of IKP's management and staff in fostering a safe and healthy work environment.

A heartfelt appreciation goes out to all IKP personnel for their unwavering commitment throughout the audit process. Their collective efforts ensure that IKP continues to uphold the highest standards of safety and health, reinforcing a culture of workplace excellence.

## RECOGNITIONS

## IKP RESEARCHERS RECEIVED THE KNOWLEDGE TRANSFER GRANT SCHEME (KTGS, JINM)



**UPM PUTRA** PERTANIAN UNTUK RAKYAT  
**INSTITUT KAJIAN PERLADANGAN** INSTITUTE OF PLANTATION STUDIES

## Congratulations

**ASSOC. PROF. DR. MOHD RAFEIN ZAKARIA**  
Head  
Laboratory of Processing and Product Development (PPD)

for successfully securing  
**Knowledge Transfer Grant Scheme (KTGS JINM)**

"Peningkatan Kemahiran Penyelesaian Masalah Melalui Kaedah STEM dalam Kalangan Murid B40 di Sekolah Kebangsaan Kg. Tunku, Petaling Jaya, Selangor"

with an amount of RM10,000

from  
The Management and Members, Institute of Plantation Studies

Agriculture • Innovation • Life  
**With Knowledge We Serve**  
upm.edu.my

SERDANG, January – Assoc. Prof. Dr. Mohd Rafein Zakaria, Head of the Laboratory of Processing and Product Development, IKP was awarded a grant under "Knowledge Transfer Grant Scheme" Jaringan Industri dan Masyarakat (KTGS JINM) 2024 Phase 2 in the amount of RM10,000.00.

The title of the research project is "Peningkatan Kemahiran Penyelesaian Masalah Melalui Kaedah STEM dalam Kalangan Murid B40 di Sekolah Kebangsaan Kg. Tunku, Petaling Jaya, Selangor".

## IKP RESEARCHER RECEIVED THE UPM GP-IPM GRANT



**UPM PUTRA** PERTANIAN UNTUK RAKYAT  
**INSTITUT KAJIAN PERLADANGAN** INSTITUTE OF PLANTATION STUDIES

## Congratulations

**DR. KONG LIH LING**  
Research Officer  
Laboratory of Sustainable Agronomy & Crop Protection (SACP)

for successfully securing  
**Putra Muda Initiative Grant (GP-IPM)**

"Small RNA as a Novel Crop Protection Strategy Against Fusarium Wilt of Banana through RNAi-Mediated Gene Silencing"

with an amount of RM25,000

from  
The Management and Members, Institute of Plantation Studies

Agriculture • Innovation • Life  
**With Knowledge We Serve**  
upm.edu.my

SERDANG, January – Dr. Kong Lih Ling, research officer from the Laboratory of Sustainable Agronomy and Crop Protection was awarded a research grant from Universiti Putra Malaysia under the Young Putra Initiative Grant (GP-IPM) scheme in the amount of RM25,000.00

The title of the research project is "Small RNA as a Novel Crop Protection Strategy Against Fusarium Wilt of Banana through RNAi-Mediated Gene Silencing". The project members are YBhg. Prof. Dr. Wong Mui Yun and Dr. Erneeza Mohd Hata.

The management and members of IKP wish the heartiest congratulations on both achievements.

## INDUSTRIAL AND COMMUNITY ENGAGEMENT

## COMMUNITY ENGAGEMENT: IKP CULTIVATES STEM INTEREST AMONG STUDENTS AT SANTUNI MADANI PROGRAM @ KG. TUNKU

PETALING JAYA, February 23<sup>rd</sup> – The Santuni Madani Program @ Kg. Tunku, organized by the UPM Community Transformation Center (UCTC) in collaboration with the Masjid Kg. Tunku committee, successfully brought together community members to address local socio-economic needs and foster village development. The event was officiated by Yang Berbahagia Dato' Professor Dr. Ahmad Farhan Mohd Sadullah, Vice-Chancellor of Universiti Putra Malaysia, and welcomed over 300 participants from the Kampung Tunku community.

Also in attendance were Prof. Dr. Arifin Abdu, Deputy Vice-Chancellor (Student Affairs and Alumni) UPM; Prof. Madya Dr. Khairulmazmi Ahmad, Director of UCTC UPM; Tuan Haji Wan Huzaini Wan Hussin, Nazir of Masjid Kg. Tunku; and other university management representatives.

The program featured a wide range of activities, including agricultural demonstrations, CPR training, free health screenings by Sultan Abdul Aziz Shah Hospital (HSAAS) UPM, agricultural exhibitions, edu-tourism showcases, sales of agricultural products by Putra Agriculture Centre, gotong-royong activities, heritage food competitions, folk sports, and children's colouring contests.

IKP played a key role by conducting a STEM knowledge transfer session aimed at strengthening the national STEM agenda, particularly among primary school students. The session attracted 48 students from Level 1 and Level 2, with seven IKP staff facilitating hands-on activities and interactive learning experiences.

A motivational talk delivered by Assoc. Prof. Dr. Mohd Rafein Zakaria successfully sparked students' curiosity and enthusiasm for STEM fields. The program is expected to continue throughout 2025, offering innovative and engaging initiatives to nurture young talents and equip them with skills essential for Malaysia's future in science and technology.



## INDUSTRY VISIT: SARIB DELEGATES VISIT IKP TO EXPLORE RUBBER INDUSTRY COLLABORATION

SERDANG, April 23<sup>rd</sup> – IKP welcomed a delegation from the Sarawak Rubber Industry Board (SARIB) for an official visit and interaction session held at the Meeting Room. The session was attended by YBhg. Prof. Ts. Dr. Siti Khairunniza Bejo (Director, IKP), YBhg. Prof. Dr. Wong Mui Yun (Deputy Director, IKP), and researchers under the IKP UDRP program, including UDRP Plantation Crops and UDRP Smart Farming. Representing SARIB were Mr. Make Jiwan (General Manager, SARIB) and Mr. Hardy Anak Semui (Administrative Officer, SARIB).

SARIB, tasked with regulating and revitalizing the rubber industry in Sarawak—particularly the smallholder sector—also plays a key role in promoting, facilitating, and developing the industry through strategic planning and administration. During the session, both parties engaged in meaningful discussions on several key topics, including: potential changes in rubber plantation management techniques in Sarawak; the importance of sustainability in the rubber industry; and the global significance of rubber across various sectors.

The meeting also explored opportunities for research collaboration and joint grant applications aimed at advancing the rubber industry in Sarawak. This engagement marked a promising step toward fostering innovation and strategic development in Malaysia's rubber sector.



## INDUSTRIAL AND COMMUNITY ENGAGEMENT

### COLLABORATION INVITATION: NUTRIENT STUDY OF COCOA TREES USING LIDAR, MULTISPECTRAL & RGB AERIAL IMAGING IN PPPK JENGKA, PAHANG

JENGKA, March 4<sup>th</sup> - In a groundbreaking initiative, IKP collaborated with FWF World Solutions to conduct a nutrient study of cocoa trees for the Malaysian Cocoa Board. The research took place at PPPK Jengka, Pahang, from 18 to 20 February 2025, and marked a significant step forward in modernizing cocoa plantation management through the use of advanced remote sensing technologies.

The study employed LiDAR (Light Detection and Ranging) technology, a remote sensing method that uses laser pulses to measure distances and generate 3D models. This was integrated with multispectral and RGB aerial imaging to analyze cocoa tree nutrient levels with high precision across various sites.

The primary objective of the research was to enhance cocoa plantation management by monitoring nutrient distribution, identifying deficiencies, and optimizing resource use—including fertilizers, water, and pesticides—on a site-specific basis. This approach aimed to improve yield and maximize long-term benefits for cocoa farmers.

Looking ahead, the integration of these technologies is expected to support pest and disease monitoring, enabling farmers to implement targeted control measures. This reduces reliance on broad-spectrum pesticides and minimizes environmental impact, aligning with sustainable agricultural practices and improving overall plantation efficiency.

This initiative showcased strong collaboration between IKP researchers and industry professionals, driving innovation in precision agriculture within Malaysia's cocoa industry. By leveraging cutting-edge imaging technologies, the project provided valuable insights into cocoa tree health and contributed to the modernization of cocoa farming, supporting the industry's goals of improved productivity and sustainability.



### INDUSTRY VISIT: IKP STRENGTHENS TIES WITH MINISTRY OF PLANTATION AND COMMODITIES TO ADVANCE RUBBER INDUSTRY

PUTRAJAYA, May 22<sup>nd</sup>- IKP continued its efforts to foster strategic partnerships by visiting the Rubber Industry Development Division (GET) at the Ministry of Plantation and Commodities. The visit aimed to explore collaborative opportunities in advancing Malaysia's rubber industry.

The IKP management team was led by Prof. Ts. Dr. Siti Khairunniza Bejo (Director), accompanied by Prof. Dr. Wong Mui Yun (Deputy Director), Assoc. Prof. Dr. Ganesan Vadamalai (Head of Laboratory SACP), and Assoc. Prof. Dr. Mohd Rafein Zakaria (Head of Laboratory PPD). The delegation was warmly received by Mr. Peter Dennis, Undersecretary of the Rubber Industry Development Division, who represented the ministry during the discussions.

During the meeting, the IKP team presented a series of rubber-related research projects and proposed innovative solutions to address key challenges within the industry. The session also facilitated a productive exchange of ideas on the opportunities and hurdles facing Malaysia's rubber sector.

This engagement underscored the shared commitment between UPM and GET to work collaboratively in developing strategic solutions that support the growth and sustainability of the rubber industry. Through this strengthened partnership, both parties aim to drive research-driven innovations and policy enhancements that will benefit stakeholders across the sector.



### INDUSTRY VISIT: IKP PAYS COURTESY VISIT TO MPOB, EXPLORES STRATEGIC COLLABORATION IN PALM OIL MECHANIZATION

BANDAR BARU BANGI, June 5<sup>th</sup> — IKP paid a courtesy visit to the Mechanization Unit of the Malaysian Palm Oil Board (MPOB) to address current challenges in the mechanisation of the palm oil industry and explore opportunities for strategic collaboration between the two agencies.

The IKP delegation consisted of six representatives, led by IKP Director, Prof. Ts. Dr. Siti Khairunniza Bejo. Joining the visit were UPM researchers Ts. Dr. Anas Mohd Mustafah (Head of Laboratory of Plantation System Technology & Mechanization), Prof. Dr. Norhisam Misron, Dr. Nur Azuan Husin, Prof. Dr. Wan Zuha Wan Hassan, and Dr. Fayaz Katper. The team was warmly welcomed by the MPOB delegation, headed by Dr. Mohd Azwan Mohd Bakri from the Mechanization Unit.

The meeting served as a valuable platform for constructive dialogue on technical and operational issues related to modernising Malaysia's plantation sector. IKP expressed optimism that the collaboration initiated through this engagement would yield significant benefits for the advancement of the nation's palm oil industry, particularly in driving innovation and enhancing mechanisation efficiency.



### STRATEGIC DURIAN FARMING COLLABORATION EXPLORED WITH TOP FRUITS SDN. BHD.

SERDANG, May 6<sup>th</sup> — A meeting was held with Top Fruits Sdn. Bhd., led by Dr. Tan Sue Sian, Plantation Managing Director, to explore potential strategic collaboration in durian farming. The discussion focused on leveraging research, smart farming technology, and innovation to improve cultivation practices, enhance productivity, and promote sustainable farming approaches for long-term market growth.



**WORKSHOP, TRAINING AND SEMINAR**

**INDUSTRIAL TALK @IKP: LATEST DEVELOPMENTS IN THE PLANTATION SECTOR**



SERDANG, January 16<sup>th</sup> - Institute of Plantation Studies Post Graduate Student Club (IKPPGSC) in collaboration with the IKP and Faculty of Agriculture, Universiti Putra Malaysia (UPM) successfully organized an industrial talk entitled "Latest Developments in the Plantation Sector" by distinguished speaker, Dato Carl Bek-Nielsen, Vice Chairman and Chief Executive Director of United Plantations Berhad. He is also appointed as Chairman of the Malaysian Palm Oil Council (MPOC) and council member of the Malaysian Palm Oil Association (MPOA). This program was attended by YDM Dato' Syed Haizam Hishamuddin Putra Jamalullail (Member of the UPM Board of Directors), Prof. Ts. Dr. Siti Khairunniza Bejo (Director of IKP), Prof. Dr. Wong Mui Yun (Deputy Director of IKP), Assoc. Prof. Dr. Juwaidah Sharifuddin (Deputy Dean, Academic, Student Affairs & Alumni, Faculty of Agriculture), and Ms Siti Saripa Rabiah Mat Lazim (IKPPGSC representative), together with other 70 participants from various government agencies, private agencies and universities including researchers, industrial players and students which also benefited from this program.

During the session, Dato' Bek-Nielsen discussed the significant transformations occurring in the Malaysian plantation sector, which aim to address challenges in sustainability and biodiversity in oil palm plantations. He emphasized three key initiatives: improving stagnant yields through the "produce more with less" concept, automation/technology adoption, and strategy diversification towards a sustainability and biodiversity approach in the oil palm industry. These efforts reflect a concerted push to modernize the plantation sector, ensuring its resilience and sustainability in response to evolving economic and environmental challenges.

Oil palm as the highest oil-yielding crop in the world (7-10 times more vegetable oil or area unit compared to other competing vegetable oil crops) has the potential to lead the global market if sustainability and biodiversity elements are embedded in the oil palm plantation operation system. UPM students should take their graduate/post-graduate journey in UPM as a fortunate opportunity, cultivating a positive attitude and setting aspirational goals to become someone who would lead or contribute to significant changes in the Malaysian agriculture footprint.



**BIO SAFETY AND BIOSECURITY AWARENESS BRIEFING**



SERDANG, March 7<sup>th</sup> - IKP organized a Biosecurity and Biosafety Awareness Briefing at the IKP Meeting Room, led by Mr. Mohd Azman bin Ahmad from UPM's Institutional Biosafety and Biosecurity Committee (IBBC). The session, attended by 16 staff members from various IKP divisions, focused on the safe handling of genetically modified organisms, biological agents, and toxins, in line with the Biosafety Act 2007.

Mr. Azman emphasized the importance of compliance through proper procedures such as SOPs, Biosafety Cabinets, Good Laboratory Work Practices (GLWP), and Personal Protective Equipment (PPE). He also highlighted the need for competency in animal handling and warned of the legal and environmental risks associated with non-compliance. The briefing reinforced the shared responsibility of maintaining a safe research environment at UPM.

**IKP WEBINAR SERIES 1/2025**



SERDANG, May 27<sup>th</sup> - Dr. Haikal Nando Winata from Indonesian Oil Palm Research Institute (IOPRI) presented on "Automation of Mass Passing Digester (MPD) Control in Oil Palm," focusing on improving processing efficiency through automation. Assoc. Prof. Ir. Dr. Norhashila Hashim from UPM's Faculty of Engineering discussed "Optical Imaging for Postharvest Handling," showcasing innovative imaging techniques to enhance postharvest quality. The webinar served as a valuable platform for knowledge exchange in smart agriculture and postharvest innovation.

**RECOGNITIONS**

**IKP DIRECTOR SHARED INSIGHTS ON SMART AGRICULTURE AT SPIHER WEBINAR**

CHENNAI, INDIA, February 14<sup>th</sup> - Prof. Ts. Dr. Siti Khairunniza Bejo delivered a talk at the International Institute Interaction and Student Relationship Cell Webinar organized by St. Peter's Institute of Higher Education and Research (SPIHER), India. Her talk on "Smart Agriculture" highlighted enabling technologies such as IoT, big data, AI, robotics, and blockchain, which enhance yields, crop quality, and efficiency while reducing losses and chemical use. She emphasized that smart farming not only supports food security and sustainability but also creates high-skilled jobs and drives broader socio-economic development.



**IKP DIRECTOR PRESENTED ON DIGITAL CROP CARE AT PT RPN WORKSHOP**

BOGOR, INDONESIA, May 7<sup>th</sup> - Prof. Ts. Dr. Siti Khairunniza Bejo delivered a talk at the Workshop on Fertilizer and Agroclimatic Recommendation of Plantation Commodities organized by PT Riset Perkebunan (PT RPN), Indonesia. Her presentation, "Digital Technology for Crop Care: Nutrient and Pest Infestation Surveillance", showcased how sensors, drones, and machine learning can improve nutrient management and pest detection, enhancing productivity and sustainability. She also shared two case studies on Nutrient Management and Bagworm Infestation Management.



## WORKSHOP, TRAINING AND SEMINAR

### SHARING SESSION BY MALAYSIAN RUBBER COUNCIL: GRANT OPPORTUNITIES AND INDUSTRIAL NETWORKING

SERDANG, April 16<sup>th</sup> - IKP successfully organized a program “Sharing Session by Malaysian Rubber Council (MRC): Grant Opportunities and Industrial Networking” presented by Ms. Sakinah Azmi (Executive Officer, MRC). The program, held at the IKP Meeting Room, was attended by Prof. Ts. Dr. Siti Khairunniza Bejo (Director of IKP), Prof. Dr. Wong Mui Yun (Deputy Director of IKP), as well as researchers under IKP’s research programs UDRP Plantation Crops and UDRP Smart Farming. Representatives from the Malaysian Rubber Council who also participated in the session included Dr. Nur Aainaa Syafini Mohd Radzi (Director, Commercialization and Technical, Marketing and Development) and Ms. Kavitha Apparow.

Ms. Sakinah elaborated on the role of MRC as a facilitator in managing research & development, commercialization, and innovation (R&D&C&I). She also elaborated on the potential grants and industrial networking opportunities offered by MRC, which focuses on the commercialization of rubber-based products or technologies for the industrial market.

This session benefited the UDRP IKP members by helping them understand the grant opportunities and industrial networks offered by the MRC, and the potential to engage in research/commercialization based on the midstream and downstream sectors in rubber, which has been MRC’s focus.



## RECOGNITIONS

### IKP DIRECTOR AS INVITED SPEAKER AT WEBINAR ON INTRODUCTION TO ARTIFICIAL INTELLIGENCE ORGANIZED BY DVS

PUTRAJAYA, March 5<sup>th</sup> - Prof. Ts. Dr. Siti Khairunniza Bejo delivered a talk at the Introduction to Artificial Intelligence (AI) Webinar organized by the Department of Veterinary Services (DVS). Module 1 introduced the fundamentals of AI, covering decision support systems, data sets, programming languages, and the development of machine learning models. Module 2 highlighted the fundamentals AI applications in agriculture, featuring case studies on disease detection and pest infestation management using advanced imaging, IoT, and other AI techniques.



She emphasized AI’s potential to improve efficiency, reduce costs, and promote sustainable agricultural practices.

### IKP ORGANISES IKP WRITING DAY 1/2025, FOCUSES ON QUALITY REVIEW ARTICLES

SERDANG, June 12<sup>th</sup> - IKP successfully conducted the IKP Writing Day 2025 - Series 1, aimed at enhancing the scientific writing capabilities of postgraduate students. The event, held at the IKP Meeting Room, drew participation from 17 postgraduate students eager to improve their academic publishing skills.

The highlight of the session was a comprehensive workshop titled “How to Write a Quality Review Paper”, delivered by Associate Professor Ir. Dr. Norhashila Hashim from the Department of Biological and Agricultural Engineering, Faculty of Engineering, UPM. Drawing from the presentation “How to Write a Quality Review Paper”, the speaker provided in-depth guidance on the structure, strategy, and standards required for publishing in high-impact journals.

Participants were introduced to the IMRaD structure (Introduction, Methods, Results, and Discussion), with emphasis on crafting compelling titles, writing concise and informative abstracts, and selecting appropriate journals. Dr. Norhashila also addressed common pitfalls in manuscript preparation, such as poor experimental design, overinterpretation of results, and failure to follow journal guidelines.

The session also covered: Ethical publishing practices, including avoiding plagiarism and redundant submissions; Responding to reviewers’ comments with professionalism and clarity; and The importance of graphical abstracts and effective data presentation.

The workshop underscored the importance of publishing as a means of contributing to the global research community, while also advancing individual academic careers. Participants were encouraged to critically evaluate their work, maintain high ethical standards, and continuously refine their writing skills. This initiative is part of IKP’s ongoing commitment to nurturing research excellence and supporting the development of future scholars. The Writing Day series will continue throughout 2025, offering more targeted sessions to strengthen scientific communication and publication success among UPM’s postgraduate community.



### IKP POSTGRADUATE STUDENTS SEMINAR: MASTERING TIME MANAGEMENT FOR iGOT SUCCESS

SERDANG, May 23<sup>rd</sup> - IKP hosted a postgraduate seminar titled “I Graduate on Time (iGOT): Mastering Time Management in Postgraduate Life.” Held at the IKP Meeting Room from 3.00 to 4.30 pm, the session aimed to equip students with effective strategies for managing their academic journey efficiently. The seminar emphasized practical tools and habits to help students stay on track and achieve timely graduation. Students outside the Klang Valley were able to participate virtually via Zoom, ensuring inclusive access to this valuable session.



## OTHER ACTIVITIES

### IHYA' RAMADHAN PROGRAM 2025 AT IKP

SERDANG, March 7<sup>th</sup> - IKP had organized the "Ihya' Ramadan Program 2025". In this program, IKP invited Mr. Mohd Husni Harmin, Manager of the Darussyifa' Small Treatment Center (PRK) at UPM Mosque, to deliver a lecture entitled "The Fulfilment of Ramadhan."

Among the key points of the lecture was to encourage to elevate our dependency to Allah through specific "du'a" and recite it frequently as a routine. Among those "du'a" is for divine guidance, as it is the best supplication. Other important "du'a" are for good health to facilitate worship, steadfastness in faith and "du'a" especially for parents.

The speaker also shared insights on the history of Ramadan and the Quran. Ramadan is the most blessed of the twelve months because the Quran was revealed during this month. It was first sent down entirely from Luh Mahfuz to Baitul Izzah before being gradually revealed to Prophet Muhammad SAW. He reminded the audience to make a firm resolution to constantly improve our Quranic recitation.

Finally, the speaker urged audience to practice what they have learned so they will not be held accountable on the Day of Judgment. May this Ramadan bring countless blessings to all.



### BRIEFING FOR NEW GRADUATE STUDENTS (SEMESTER 1, SESSION 2025/2026)

SERDANG, April 9<sup>th</sup> - IKP organized an orientation session and laboratory safety rules briefing for new graduate students registered under IKP for Semester 1 Session 2025/2026. The introduction on IKP and the Post-Graduate Program was delivered by Prof. Dr. Wong Mui Yun (Post-Graduate Student Coordinator, IKP) while Mrs. Nazlia Girun (Science Officer, IKP) delivered the briefing on laboratory safety.

This program was started with an introduction to management members, research supervisors, associate researchers, laboratory staff, and administrative staff at IKP. In addition, students were also exposed to safety information including explanations of the basic safety rules in the laboratory, the procedure for laboratory and equipment booking, how to handle chemicals and chemical waste management, the use of appropriate personal protective equipment, and actions that need to be taken if incidence happened in the laboratory. At the end of the program, all new students were taken to visit all the laboratories in IKP.

The list of newly registered students (all are under Laboratory of Sustainable Agronomy and Crop Protection) is as follows:

1. Alvarino Jess Bryan (PhD) under the supervision of Prof. Dr. Wong Mui Yun
2. Putri Shaza Nursyahira Shahrulnizam (PhD) under the supervision of Prof. Dr. Wong Mui Yun
3. Daarshini Ganapathy (PhD) under the supervision of Assoc. Prof. Ganesan Vadamalai
4. Chan Chung Hao (PhD) under the supervision of Assoc. Prof. Ganesan Vadamalai
5. Liew Hao Yuan (MSc) under the supervision of Prof. Dr. Wong Mui Yun



### MAJLIS SAMBUTAN MEGA RAYA IKP 2025

SERDANG, April 24<sup>th</sup> - The Mega Raya Celebration 2025 at institute level took place with great excitement at the IKP Meeting Room. The ceremony started with a welcoming remark by YBhg. Prof. Ts. Dr. Siti Khairunniza Bejo who elaborated on the role of IKP in ensuring UPM's main agenda on the food security issue and planetary health can be achieved. She also presented the IKP Plan for year 2025 involving human resource management, high-impact research, industrial and economic empowerment, student talent development and global recognition.

The event continued with a Eid feast with a variety of raya dishes such as grilled lamb, ketupat, satay, leman, charkuetiaw, desserts and special menu cooked by IKP staff, chicken rendang and ketupat. The event was more meaningful with the presence of the former director of IKP, YBhg. Prof Dr Mohd Khanif Yusof, YBhg Prof. Datin Dr. Siti Nor Akmar Abdullah, YBhg. Prof. Dr. Robiah Yunus and YBhg. Prof. Dr. Shaufique Fahmi Ahmad Sidique. Researchers, collaborators and post-graduate student under IKP's UDRP, UDRP Plantation Crops and UDRP Smart Farming also enlivened the event. IKP also welcomed friends from other PTJ including, University Community Transformation Centre (UCTC), Bursar's Office (BPOB A), Faculty of Engineering, Faculty of Veterinary Medicine and Putra Agriculture Centre (PPP).

This event was not just a celebration nor an annual event, but also a platform to strengthen and instil the togetherness spirit within IKP members and connections. Thank you to all IKP staff who have worked hard to ensure that this celebration can be realized and successful. Our appreciation also to our guest who have made their time to come to our humble event.



### IKP STAFF HONOURED AT MAJLIS GEMILANG PUTRA 2025

SERDANG, May 6<sup>th</sup> - IKP staff members were celebrated for their dedication and excellence at the Majlis Gemilang Putra 2025. The event recognized outstanding contributions and long-term service within the university community. Mr. Nik Muhamad Adnan Mohd Nor and Ms. Rozila Mohamed Jamalludin received the Excellent Service Award (2024) for their exemplary performance and commitment. Meanwhile, YBhg. Prof. Dr. Wong Mui Yun was honoured with the Setia Putra Award for her remarkable 20 years of service. IKP congratulates the recipients and appreciates their continued contributions to the institute's success.



## OTHER ACTIVITIES

### INTERNAL EKSA AUDIT AND EKSA RECOGNITION PROGRAM AT IKP 2025

SERDANG, May 14<sup>th</sup> – The Public Sector Conducive Ecosystem (EKSA) Committee at IKP successfully conducted the Internal EKSA Audit and EKSA Recognition Program. The audit and evaluation were led by Ms. Nor Hasni Zahari from the Faculty of Engineering, who also serve as EKSA facilitators for IKP.

This audit plays a crucial role in identifying initial weaknesses, implementing necessary improvements, and ensuring staff readiness for the official evaluation session.

Alongside the internal audit, the EKSA Recognition Program was held to acknowledge the efforts and dedication of staff in implementing EKSA within PTJ. Three categories were contested; Best Laboratory, Best Cubicle and Best Workspace. Additionally, a Special Award was presented to staff members who demonstrated the most significant improvement in EKSA implementation, recognizing their commitment to fostering a conducive, systematic, and EKSA-driven work environment.

Through the internal audit and recognition program, IKP continues to strengthen a culture of quality work while maintaining a productive and efficient work environment. With EKSA principles embedded within its operations, all staff members are encouraged to strive for continuous improvements in quality, productivity, and overall institutional excellence.

### IKP COMPLETES INTERNAL ISO 9001:9015 AUDIT

SERDANG, May 23<sup>rd</sup> – IKP has successfully completed its Internal Quality Management System (QMS) ISO 9001:9015 Audit, conducted over two days from May 22, 2025 (Thursday) to May 23, 2025 (Friday). The audit was led by Ms. Rosliza Ibrahim from the Information and Communication Development Center (iDEC), UPM, with support from several internal auditors from PTJ.

The audit covered various key scopes of assessment, including:

1. Management Scope
2. Core Service Scope – covering aspects of postgraduate studies and research
3. Support Scope – encompassing customer management, finance, training, equipment, infrastructure facilities, human resource management, occupational health and safety, calibration and equipment verification, laboratory management and safety, industry and community networking
4. Support Service Operation Scope – involving Transgenic Greenhouse

IKP remains committed to continuous improvement based on findings and recommendations from auditors. Among the enhancement measures to be taken include strengthening documentation systems to ensure they are more systematic and aligned with quality record requirements.

Moving forward, IKP will continue its efforts to enhance compliance with the ISO 9001:9015 standard, aimed at improving operational efficiency and service quality. A sincere appreciation is extended to Ms. Rosliza Ibrahim, internal auditors from PTJ, and IKP staff for their cooperation in ensuring the smooth execution of this audit session.



## INNOVATIONS

SEARCHA PROFESSORIAL CHAIR LECTURE MONOGRAPH 12

**Hyperspectral Sensing in Detecting Asymptomatic Basal Stem Rot Infection in Oil Palm**

Dr. Siti Khairunniza-Bejo  
Universiti Putra Malaysia

### Monograph

This monograph explores hyperspectral sensing as a breakthrough in detecting asymptomatic Basal Stem Rot in oil palms. By enabling earlier, more precise diagnosis, it supports sustainable farming practices and helps protect both yields and ecosystems across Southeast Asia.

Prof. Ts. Dr. Siti Khairunniza Bejo

Optimizing Fertilizers Use  
for **KENAF**  
in **BRIS SOIL**

Mohd Hadi Akbar Basri  
Arifin Abdu  
Daljit Singh Karam Singh  
Mohd Ashadie Kusno  
Noorsuhaila Abu Bakar

### Book

This book explores how kenaf, an eco-friendly crop, can thrive in Malaysia's challenging BRIS soil through optimized use of chemical and organic fertilizers. It highlights research-driven strategies to improve soil fertility and plant performance, supporting sustainable agriculture and economic growth. A valuable resource for farmers, researchers, and policymakers alike.

Dr. Mohd Hadi Akbar Basri

## INCOMING EVENT

**Precision Monitoring**

A workshop on:  
**Advance LI-COR Instruments for Crops & Environmental Monitoring**

Fees: **RM 250 only**

**SPEAKERS:**

Mr. Dave Johnson  
Principal Scientist,  
LI-COR Environmental

Ms. Caroline Lim-Brown  
APAC Channel Manager  
LI-COR Environmental

**Theory & Hands-on**

- ✓ Portable photosynthesis system
- ✓ Trace gas analyzer (TGA)
- ✓ Eddy Covariance System (EC)
- ✓ Evapotranspiration Sensor

**Join Us:**  
**27 - 28 October 2025**  
Miniauditorium 1, TNCPI Building, UPM

Dr. Erneeza: [erneeza@upm.edu.my](mailto:erneeza@upm.edu.my) (012-3547278)  
Pn. Mira: [mira@esi.com.my](mailto:mira@esi.com.my) (013-2071504)

### EDITORIAL BOARD

**Advisors |**  
Prof. Ts. Dr. Siti Khairunniza Bejo  
Prof. Dr. Wong Mui Yun

**Editor-in-Chief |**  
Assoc. Prof. Dr. Ganesan Vadamalai

**Editors |**  
Ts. Dr. Anas Mohd Mustafah  
Assoc. Prof. Dr. Mohd Rafein Zakaria

**Creative Unit |**  
Ms. Siti Nooradzah Adam

**Editorial Unit |**  
Dr. Erneeza Mohd Hata  
Dr. Kong Lih Ling  
Ms. Farah Zeehan Mohd Nadzri  
Dr. Halimatun Saadiah Hafid  
Dr. Fariz Adzmi  
Dr. Zailani Khuzaimah  
Mr. Ahmad Faiz Mokhtar