the 5th ICTROPS

International Conference
for Tropical Studies and Its Applications

"The Bridging of Multidisciplinary Trends Between Social and Life Science on Tropical Studies: Beyond Covid-19 Pandemic"

ABSTRACT BOOK

5th-6th October 2021 | Samarinda-Indonesia

ictrops-idb.unmul.ac.id

Organized By :

IsDB البنك الإسلامي للتنمية Islamic Development Bank

Islamic Development Bank 4in1 Project
Project Implementation Unit
Mulawarman University

Co-Organized By :

Abstract Book
The 5th International Conference on Tropical Studies and Its Application (ICTROPS) 2021

"The bridging on the trend of multidisciplinary between social and life science on tropical studies: beyondcovid-19 pandemic**"**

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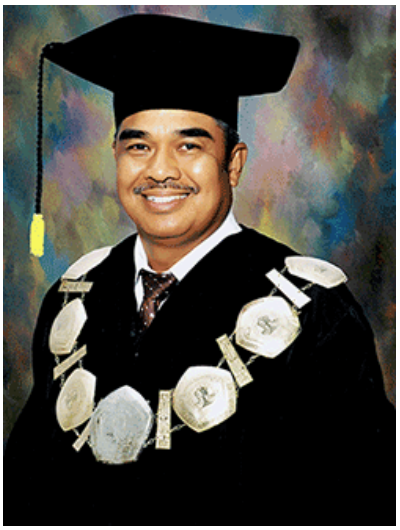
Nurul Fitriyah Sulaeman

Foreword of Rector



Assalamualaikum Wr. Wb.
Dear colleagues, professors, lecturers, researchers, and all participants.

On behalf of Mulawarman University, I would like to express my sincere gratitude and welcome you to the 5th ICTROPS 2021. Moreover, I honourably welcome our keynote speakers

- Dr. Awang Azman Bin Awang Pawi, University of Malaya, Malaysia
- Dr. Suthirat Kittipongvises, Chulalangkorn University, Thailand
- Prof. Yoshisuke Kumano, Shizuoka University, Japan
- Dr. Maria-Laura Franco-Garcia, University of Twente, Netherlands

Executive directors of PMU (Project Management Unit), and PIU (Project Implementation Unit) 4in1 IsDB projects, and our invited speakers.

Ladies and Gentlemen and All The Audiences
I hope that the conference would be able to achieve its objective in providing a platform for researchers and practitioners to advancing knowledge and research for the better of life beyond the pandemic. The center of excellence of our university is Tropical studies. Therefore, this conference is a forum for sharing the latest issues in the context of tropical studies and its applications. We realized that the complexity of these issues needs a balanced from the pure science and social science perspectives.

Ladies and Gentlemen and All The Audiences
Finally, my deepest gratitude goes to the Advisory Board, Organizing Committee, PMU and PIU 4in1 IsdB projects (the University of Jember, State University of Malang, and Sultan Agung Tirtayasa University) who have supported the success of this conference. The committee has organized a scientific program and is working hard to present highly respected and international speakers to lead it. Although we try our finest to be professional, please accept our sincere apologies should some inconveniences occur before, during, or after the event. I wish you a very productive conference with exciting and encouraging discussions and exchanges of knowledge.
Thank you for joining this event. I sincerely hope you will enjoy our conference. By saying BISMILLAHIROHMANI RAHIM, I OFFICIALLY OPEN THIS 5TH ICNTROPS INTERNATIONAL CONFERENCE 2021

Rector of Mulawarman University
Prof. Dr. H. Masjaya, M.Si

Foreword of Executive Director of PIU-IsDB

Assalamu 'alaikum wr wb.

The important role of this IsDB project is as an enabler for Mulawarman University to achieve as a Service Excellence on Center for Tropical Studies (SE-CTS) by developing five key sectors namely Campus Infrastructure (CI), Teaching and Learning (T&L), Research, on Campus Service (CS), and Public Services (PS). The project will indirectly benefit GDP of the nation as a result of higher quality of education. It is expected that the project will increase the quality of graduates, both in academic skills as the core competence and soft skills as an essential added value. It is projected that the project becomes an important trajectory for qualified human resources that are heavily in need to face the embracing ASEAN Economic Community and possibly Trans Pacific Partnerships. Samarinda as the host city for Mulawarman University and East Kalimantan province will also economically benefited through the coming of more young researchers.

The International Conference on Tropical Studies and Its Application annual conference on 6th October 2021, is organized by Mulawarman University in collaboration with Islamic Development Bank (IsDB) and Ministry of Research, Technology, and Higher Education of The Republic of Indonesia. On behalf of Project Implementation unit (PIU) Islamic Development Bank (IsDB) of Mulawarman University, We would also like to extend our gratitude especially to all speakers, participants and committees.

Wassalamu'alaikum wr. wb.

Executive Director of PIU-IsDB.
Dr. Sc. Mustaid Yusuf, M.Si.

Committee

Steering Committee	:	Prof. Dr, H. Masjaya, M.Si
		Prof. Dr. Ir. Mustofa Agung Sardjono
		Dr. Ir. Bohari Yusuf, M.Si
		Dr. Sc, Mustaid Yusuf, M.Si
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		Joan Angelina Widians, S.Kom, M.Kom
		Roni Isnuwardana, dr., Ph.D
		Zhafira Kurnia Fitri, S.IP
		Firdan Fahrizal, S.IP
IT	:	Reza Maulana Yusuf, S.Kom
		Rusfina Widayati, ST, M.Sc
		Agung Yusuf, S, Sos
		Dedy Cahyadi, M.Eng
		Indra Hendriawan, SP., MP.
		Dian Noor Arthady Wijaya, SP
		Firman, S.Kom
Proceeding	:	Fahrizal Adnan, ST., M.Sc.
		Ritbey Ruga, Ph.D
		Suhardi., S. Pt., M.P., Ph.D
		Dewi Embong Bulan, Ph.D
		Addy Suyatno, M. Kom
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		Lisa Agustina, S.T
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Content

Venue

Zoom Meeting
(Meeting ID: 976 4542 1452 Passcode: ICTROPS)
https://unmul.zoom.us/j/97645421452?pwd=TllVNlp0ZTk3akNwSXF6cVR1RXozdz09

Keynote Speakers

Associate Professor Dr Awang Azman bin Awang Pawi

Associate Professor Dr Awang Azman Awang Pawi is a lecturer at the Department of Socioculture and Arts, Academy of Malay Studies, University of Malaya. He is also a research fellow at the Center for the Study of Democracy and Elections Malaysia (UMCEDEL), besides being appointed as a *Distinguished Scholar* at the Pahang Al-Sultan Abdullah Center for the Study of History and Civilization. His field of study is applied Malay Studies. He has done a lot of research and became a consultant in the field of Malay socio-cultural, heritage, literature and politics. His research on the Malay world covers Indonesia, Thailand, Brunei, Singapore, the Philippines. He has been a visiting scholar at Leiden University, Netherland and Oriental Institute, Prague, Czechia. Apart from being a conference member of the UMCEDEL journal, the World Journal of Malay Studies, he is also an editorial member of the Malaysian Parliamentary Journal. Among his latest books are Identiti Muhammmad Haji Salleh (DBP, 2022) and Budaya Politik Harian Sarawak (UMPress, 2018). He is also a columnist for the *Sin Chew Daily* newspaper.

Assistant Professor Suthirat Kittipongvises

Assistant Professor Suthirat Kittipongvises is currently a lecturer at Environmental Research Institute, Chulalongkorn University (ERIC) and also Director of Environment Development and Sustainability (International Program), Chulalongkorn University, Thailand. She received Ph.D. degree in Sustainability Science from the Graduate Program in Sustainability Science, Graduate School of Frontier Sciences, the University of Tokyo, Japan in 2013. She also earned master degree on Environmental Engineering and Management, Asian Institute of Technology (AIT), Thailand. Her research focuses on environmental sustainability, climate change mitigation, GHG quantification, climate change impacts and natural resources management, waste-toenergy, low carbon society, disaster management, flood risk perception, carbon capture and storage, ecological resilience and sustainability, environmental concerns, and worldviews and so on. She has published both international journals with ISI/Scopus index in the areas of environmental management, climate change mitigation, urban GHG inventory, multi-hazards management and also book chapters on the following topics: Contextualizing the relationship between climate change perception and proactive actions: Thailand as a case study (Spears Media Press, Colorado, U.S), GHGs Emissions and Sustainable Solid Waste Management (Springer), and Constructed wetlands and waste stabilization ponds (Oxford Academic Press.)

Prof. Yoshisuke Kumano, Shizuoka University, Japan

- Professor Emeritus, Appointed Professor, Shizuoka University
- Professor of Science Education, Graduate School of Science & Technology (Ph.D. Program), Informatic Section,Graduate School of Education, Faculty of Education, Shizuoka University (from 2005-to 2021.3)
- Visiting Scholar at the Uiversity of Iowa (2012, September – 2012 December, Fulbright Scholar)
- Associate Professor of Science Education, Shizuoka University (1995-2005)
- Lecuterur of Science Education, Shizuor Universiyt (1993-1995)
- Meikei Hight School, Chair of Science Education (from1981 to 1989), Chair of International Education (1991 to 1993)

Prof. Yoshisuke Kumano currently is the Professor of Science Education, Graduate School of Science & Technology, and Graduate School of Education, Shizuoka University. Yoshisuke does research in Innovation of Science Education. Their current project is 'Shizuoka STEM Academy'. His academic background are Science Education, Geology, Paleontology, Earth & Space Science. He got Ph.D. in Science Education at the University of Iowa and Academic Mentor was Prof. Robert E. Yager in 1993 by the support of Flbright Program.

Dr. Maria-Laura Franco-Garcia, University of Twente, Netherlands

Experience on topics associated to environmental management systems (Corporate Social Responsibility), Circular Economy at meso level (industrial parks) and macro level (circular cities).

María-Laura Franco-García holds a Ph.D. on “Environmental Chemistry” (Université Claude Bernard Lyon I, France). She worked for the Mexican Environmental Ministry contributing to the hazardous waste regulations. Franco’s research interests expanded to public and private management of natural resources and to product development fields since her affiliation to “Tecnológico de Monterrey”. Franco is currently one of the European coordinators of the global network of “Greening of Industry Network GIN)” www.greeningofindustry.org. Her current research is related to GIN’s mission, e.g. Circular Economy, CSR, sustainable industrial parks, social and environmental Life Cycle Assessment, social entrepreneurship, among others.

Invited Speakers

Tubagus Bahtiar Rusbana, Ph.D., Sultan Ageng Tirtayasa University, Indonesia

Education:
- Bachelor in Agriculture Technology, IPB University (2003)
- Master of Science, IPB University (2009)
- Doctor of Philosophy, Tohoku University, Japan (2020)

Research:
Agriculture

Ronny Isnuwardana, dr., Ph.D., Mulawarman University, Indonesia

Education:
- Doctor of Philosophy in Clinical Epidemiology, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Thailand, 2021
- Master of International Health, Faculty of Medicine, Nursing and Health Sciences, Monash University, Australia, 2009
- Doctor of Medicine, Bachelor of Medicine, Bachelor of Surgery, Faculty of Medicine, Brawijaya University, Indonesia, 2002

Research:
Clinical epidemiology, biostatistics, global health

Eli Hendrik Sanjaya, Ph.D., State University of Malang, Indonesia

Education:
- Bachelor of Chemistry, Universitas Negeri Malang (UM), Indonesia
- Master of Chemistry-Biochemistry, Institut Teknologi Bandung (ITB), Indonesia
- Doctor of Philosophy, Environmental Engineering, Tohoku University, Japan

Research:
Biochemistry, microbiology, metabolism, environmental management, environmental bioremediation

Pramudya Dwi Aristya Putra, Ph.D., University of Jember, Indonesia

Education:
- Bachelor in Physics Education, Surabaya State University (2005 – 2009)
- Master of Science in Science Education, Sebelas Maret University (2010 – 2012)
- Ph.D in STEM Education, Shizuoka University, Japan (2017 – 2020)

Research:
Science Education

Schedule

Time (GMT+8/ WITA)	Conference (6th October, 2021)
08.00 – 08.15	Log in To Zoom Meeting (Meeting ID: 976 4542 1452 Passcode: ICTROPS) https://unmul.zoom.us/j/97645421452?pwd=TllVNlp0ZTk3akNwSXF6cVR1RXozdz09
08.15 – 08.35	Opening 1. The National Anthem of Republic Indonesia "Indonesia Raya" and Mars UNMUL 2. Prayer
08.35 – 08.45	Opening Speech by Executive Director of PMU ISDB 4 in 1 Project: Dr.rer.nat Suseno Amien
08.45 – 08.55	Opening Speech by Rector Mulawarman University: Prof. Dr.H. Masjaya, M. Si
08.55 – 09.00	Photo Session
09.05 – 09.45	Keynote Speakers Session 1 Dr. Awang Azman Bin Awang Pawi, University of Malaya, Malaysia **The Role of Social Sciences andHumanities Under Covid-19** Moderator: Alamsyah Tawakkal, Ph.D
09.50 – 10.30	Keynote Speakers Session 2 Dr. Suthirat Kittipongvises, Chulalangkorn University, Thailand **Air Quality Management andSustainability Challenges** Moderator: Etik Sulistiowati Ningsih, Ph.D
10.35 – 11.15	Keynote Speakers Session 3 Prof. Yoshisuke Kumano, Shizuoka University, Japan **STEAM For SDGs; Great Needs on the Collaboration: Theory and Practices From Japan** Moderator: Nurul Fitriyah Sulaeman, Ph.D
11.15 – 11.55	Invited Speakers Session 1 1. Tubagus Bahtiar Rusbana, Ph.D., Sultan Ageng Tirtayasa University, Indonesia 2. Ronny Isnuwardana, Ph.D., Mulawarman University, Indonesia Moderator: Ritbey Ruga, Ph.D
11.55 – 12.35	Invited Speakers Session 2 1. Eli Hendrik Sanjaya, Ph.D., State University of Malang, Indonesia 2. Pramudya Dwi Aristya Putra, Ph.D., SUniversity of Jember, Indonesia Moderator: Sopialena, Ph.D
12.35 –13.15	**Lunch Break**
13.15 – 13.20	Preparation
13.20 – 14.00	Keynote Speakers Session 4 Dr. Maria-Laura Franco-Garcia, University of Twente, Netherlands **How can manure's nutritional value contribute to circular economy?** Moderator: Ir. Juli Nurdiana, MSc
14.00 – 16.00	**Parallel Session**
16.00 – 16.10	**Break Time**
16.10 – 17.10	Awarding + Closing Ceremony Closing Speech by The Executive Director of IDB UNMUL : Dr. Sc. Mustaid Yusuf, M.Si

Parallel Session

Time	Room 1	Room 2	Room 3	Room 4	Room 5
14.00-14.10	SEE-411	TEE-414	TEE-450	TNP-422	TCBD- 449
14.10-14.20	SEE-412	TEE-417	TEE-444	TNP-424	TCBD- 454
14.20-14.30	SEE-419	TEE-416	TEE-453	TNP-429	SEE-469
14.30-14.40	SEE-418	TEE-421	TEE-451	TNP-435	SEE-474
14.40-14.50	SEE-427	TEE-423	TEE-459	TNP-442	SEE-481
14.50-15.00	SEE-425	TEE-433	TEE-456	TNP-439	SEE-480
15.00-15.10	SEE-430	TEE-468	TEE-464	TNP-445	TNP-477
15.10-15.20	SEE-437	TEE-441	TEE-465	TNP-457	TNP-487
15.20-15.30	SEE-462	TEE-446	TEE-466	TNP-452	TNP-483
15.30-15.40	SEE-455	TEE-458	TEE-467	TNP-471	SEE-449
15.40-15.50	SEE-479	TEE-484	TEE-027	TNP-478	TCBD-454
15.50-16.00			TEE-028		SEE-491

Room	Moderator 1	Moderator 2
1	Sukemi, S.Pd, M.Sc.	Ronny Isnuwardana, dr., MIH., Ph.D
2	Nur Rohmah, S.KM, M.Kes	Helda Niawati, S.T., M.T
3	Suhardi, S.Pt., M.P., Ph.D	Ari Wibowo, S.Pt, M.Si, Ph.D
4	Agustu Sholeh Pujokaroni, Ph.D	Andi Misnawati, S.Pd., M.Sc
5	Atin Nuryadin, S.Pd., M.Si., Ph.D	Galih Yudha Saputra, S.Kom., M.Kom.

Notes
Every presenter will have a 10 min presentation

Subtopic:
1. TEE = Tropical ecosystem and environment
2. TNP = Tropical natural products
3. TCBD = Territorial and communal based development in harmony with environments
4. SEE = Social and economic empowerment to support environmental literacy

Display Name in zoom is mandatory using the format we provided.
The format is: Sub Topic_**ID_Room_Name**
For example Blego Sudionoto, Sub topic SEE, author paper ID number 416, Room 1
Display name : **SEE_416_1_Blego Sudionoto**

No	ID	Subtopic	Authors	Title
1	411	SEE	Edwardus Iwantri Goma, Mei Vita R Ningrum, Adit Nur Pratama, Risma Amelia, Rita Wulandari, Umi Kholifatus Saniah, Yulia Sunarti	Analysis of the Impact of the Covid-19 Pandemic on the Coal Mining Industry Sector At Pt. Jhonlin Baratama Site Lolo, Js Group Paser Regency
2	412	SEE	Edwardus Iwantri Goma, Mei Vita R Ningrum, Muh. Ashar, Nur Halizah, Reni Novita, Yudi Suherman, Zaitun Alia A. Sanusi	The Impact of Covid 19 on Street Vendors in the Scout Street Area of Samarinda City
3	418	SEE	suryaningsi - suryaningsi	Teacher Self-Efficacy for Professional Development during the COVID-19 Pandemic In East Kalimantan
4	419	SEE	Anggriya Feby Setyowati	Analysis Of Health Level In Infants And Toddlers In The Midst Covid-19 Pandemic In Petung Sub-District, Penajam Paser Utara Region: Social And Health Phenomenon
5	425	SEE	Nurul Fitriyah Sulaeman, Lola Jovita, Riski Amalia, Shelly Efwinda	Exploring Pre-service Science Teachers Trust in Science-Technology-Engineering-Mathematics (STEM) during the COVID-19 Pandemic
6	427	SEE	Awang Azman	COVID-19 Impact towards Domestic Immigrant Worker in Malaysia: Case Study in Petaling
7	430	SEE	Septyani Triwulandari, Roro Dinda althaf Farah Zayyan Azizah, Muliati Syam, Pramudya Dwiaristya Putra, Nurul Fitriyah Sulaeman	Exploring Science and Engineering Practices in Indonesian Physics Textbook About Heat and Temperature
8	437	SEE	Agung Tandiminanga Tandiminanga	Utilization of Sea Wind To Calculate Current And Voltage In Small Scale Pltb
9	449	SEE	Alexandra Hukom	Incremental Capital Output Ratio (Icor) Analysis and Technology On Economic Growth In Kalimantan
10	454	SEE	Aisyah Trees Sandy, Mei Vita Romadon Ningrum, Edwardus Iwantri Goma	The Urgency of Tropical Studies Based Social Entrepreneurship in the Covid 19 Period
11	455	SEE	Andi Baladewa Armada Candra	Control of 3 PhaseInduction Motor With Variable Speed Drive Based On PLC and SCADA
12	462	SEE	M. Fathurahman, Ika Purnamasari, Surya Prangga	Association Analysis of the Number of Dengue Hemorrhagic Fever Cases in East Kalimantan with the Factors of Geographic, Demographic, and Health Using Spearman Rank Correlation
13	469	SEE	Mursidah	Added Value Analysis of Eleutherine americana M. Herbal Tea

14	474	SEE	Marwan Marwan, Siti Khotimah, Ronny Isnuwardana, Swandari Paramita	Development the Database of Antibody Level of COVID-19 Survivor for Convalescent Plasma Donors at Mulawarman University
15	481	SEE	Mahdi Ilhami, Ristiana Eriyati, Dewi Embong Bulan	The abundance of marine Sponges in the Miang Besar Island, East Kutai
16	479	SEE	Darnah Darnah	The Effectiveness of Online Learning Platforms on Mathematics Scores of Junior High School Students in Samarinda in COVID-19 Era
17	487	SEE	Imam Wijayadi	Economic Empowerment Of The Kampung Muang Ilir Community Through “Miltovil” (Muang Ilir Ecotourism Village)
18	491	SEE	Dina Lusiana Setyowat, Swandari Paramita, Riza Hayati Ifroh, Tanti Asrianti, Evi Fitriany, Wahnadita Rahman	Work readiness during COVID-19 among taxibike online drivers in Samarinda, Indonesia
19	431	TCBD	Zeni Haryanto, Nurul Fitriyah Sulaeman, Atin Nuryadin, Shafira Aulia Putri, Annisa Zahra Rahmawati, Pramudya DA Putra	Microteaching for Pre-service Science Teachers during the COVID-19 Pandemic: A Theoretical Framework
20	475	TCBD	Saraswati Prabawardani, Lazarus Indow, Rudi A. Maturbongs, Hendri Hendri	The Influence of the Remote Indigenous Communities Empowerment Program on the Sustainability of the Local Food Crops at the Three Domberai Cultural Ecosystem Areas, West Papua
21	483	TCBD	Risa Farrid Christianti, Azhari S.N. Azhari	Computational Intelligent Algorithms in Multi-Sensor Data Fusion for UAV Detection and Identification: Challenges and Opportunities
22	414	TEE	Nina Yulianti	Sustainable Farming Lowland and Highland– A Case Study in Central Kalimantan, Indonesia dan Sabah, Malaysia
23	416	TEE	Blego Sedionoto Sedionoto, Sueptrakool Wasessombat, Chuchard - Punsawad, Witthaya - Anamnart, Jitbanjong - Tangpong	Geographical Risk Factors of Strongyloides stercoralis infection in East Kalimantan Province, Indonesia
24	417	TEE	Kiswanto Kiswanto, Ariyanto Ariyanto, Diah Rakhmah Sari, Mardiany Mardiany	Changes Detection of The Surface Coal Mining in Samarinda Using Time Series Landsat Imageries
25	421	TEE	Suria Darma Idris, Syamad Ramayana, Sadaruddin Sadaruddin, Bambang Suprianto	Comparison of Content and Status of the C-Organic, C/N Ratio, Soil pH and Organic Matter in Rainfed Rice Fields, Tides and Swamp (Case Study in Three Villages, in East Kalimantan)
26	423	TEE	Blego - Sedionoto, Vivi Filia Elvira	Essential Ecological Risk Factors of Strongyloides stercoralis infection in Rural Areas Kutai Kertanegara, Indonesia

27	433	TEE	Rusfina Widayati	The Use of AHP within GIS on Decision Making of Watershed Development Planning Policy at Bontang River–East Borneo
28	441	TEE	sifriyani sifriyani, Idris Mandang, Fidia Deny Tisna Amijaya	GIS Mapping Based on Spatial-Temporal Model Estimation for Health Services and Population Density Affecting COVID-19 Outbreak in Kalimantan
29	444	TEE	Nurul Novalia Kartika	Effect of UVA, UVC, UVA/TiO2, and UVC/TiO2 for Degrading Synthetic Dyes
30	446	TEE	Risa Farrid Christianti, Azhari S.N. Azhari Mail	Computational Intelligent Algorithms in Multi-Sensor Data Fusion for UAV Detection and Identification: Challenges and Opportunities
31	450	TEE	Joan Angelina Widians, Annisa Chitra Adinda, Anindita Septiarini Septiarini Mail	Diagnose Digestive Disease and the Selection of Borneo Medicinal Plants as an Alternative Treatment
32	451	TEE	Indah Trisnawati, Mukhammad Muryono, Iska Desmawati Mail	Pollinator-friendly plants for supporting pollinator insect conservation on agroforestry in Jatiarjo, Prigen, East Java
33	453	TEE	Devita Grecia Naftalia Simorangkir	Photocatalyst Effect of Variations in TiO2/UVC Concentration to Degrade Variations in Concentrations of Synthetic Compounds (Methylene Blue) and Interfering Substances
34	456	TEE	Nurul Puspita Palupi, agus sarjono, abdul hanif	Soil Quality Index Analysis Of Secondary Forest And Palm Oil Plantation
35	458	TEE	Ade Kurniawan	Design of a Waste Power Plant Prototype Based on the Waste Types as a Source of Renewable Energy
36	459	TEE	Encik Akhmad Syaifudin	Esponse of Shallots (Allium ascalonicum L.) and Its Diseases On The Trichokompos Fertilizer And Frequency Of Weed Control
37	464	TEE	Kadis Mujiono	Insecticidal activity of Kirinyuh leaf extract (Chromolaena odorata L.) against armyworm Spodoptera litura F. (Lepidoptera: Noctuidae)
38	465	TEE	Hadi Pranoto Pranoto	The intercropping pattern of corn (zea mays l.) And peanuts (arachishypogaea l.) on cavendes banana (musa acuminatecavendis) plantation to land productivity increases1)
39	466	TEE	Mohammad Sumiran Paputungan, Alan F. Koropitan, Tri Prartono, Ali A. Lubis, Isdahartati Isdahartati, Andi Afandy	Quantifying Carbon Stock In Mangrove Restoration Area Of Lembar Bay, Lombok
40	467	TEE	Joan Angelina Widians, Azhari Azhari SN	Text Document Clustering with Evolutionary Computational: A Review
41	468	TEE	Sopialena	Association Of Endophytic Fungi In Rice Root (Oryza sativa L)
42	027	TEE	Rahmat Bakhtiar, Yadi, Natanael Tandirogang	Analysis of Covid 19 Variants in Samarinda City

43	028	TEE	Farida Djumiati Sitania	Supplier selection using AHP and TOPSIS : a case study in the X bakery
44	484	TEE	Teguh - Pribadi	Fauna Exploration and Inventory in the Mount Kelua Fkip Campus Area, Mulawarman University
45	422	TNP	Sara Ahmed Eltigani	Hemagglutinins Inhibitors from Tropical Medicinal Plants Used in Sudan
46	424	TNP	Usman	Antidiabetic and Antimicrobial Activities of the Ethanolic Extract from Rhizophora mucronata Leaf
47	429	TNP	Panggulu Ahmad Ramadhani Utoro, Miftakhur Rohmah, Nur Amaliah, Anton Rahmadi, Rusdiansyah Rusdiansyah	Crystal Structure, Mineral Content, β-Carotene, α-Tocopherol, Antioxidant and Functional Group Active of Pre-gelatinization and Pre-Digest White and Red Rice Flour from East Kalimantan as Source of Anti-Stunting Nutrients
48	435	TNP	Noor Hindryawati	Green Synthesis of Silver Nanoparticles From Soursop Leaf Extract (Annona Muricata Linn.)
49	439	TNP	Gabriel Sumampouw	Prototype of Automatic System DC Fan Speed Based by Microcontroller, and Connected to Blynk (IOT)
50	442	TNP	Nabila Nayif Nur Akmalia	Potential of Nutraceutical Gummy Candy from Kepok Banana Peel Extract (Musa paradisiaca Linn.) in Combination with Kelulut Honey (Trigona incisa) As a Covid-19 Supportive Therapy
51	445	TNP	Nova Hariani, Syafrizal Syafrizal, Andi Mismawati, Ritbey Ruga	Phytochemical analysis of ethanol extract from stingless bee (Tetragonula laeviceps Smith) honey and its anti-acnes activity
52	452	TNP	Wisnu Candra Margono	Smart Trash Can Prototype Can Talk Accompanied by Security System Using Ultrasonic Sensors and PIR Sensors With Telegram Communication
53	457	TNP	Odit Ferry Kurniadinata, Penny Pujowati, Khoiru Indana, Donny Dhonanto, Agung Nugroho	Purun Plant in East Kalimantan, The Endemic Plants in Peat and Swamp Areas as A Humid Tropical Local Commodity with Superior Potential
54	471	TNP	Eva Marliana, Soerja Koesnarpadi, Nanang Tri Widodo, Sahira Fara Nabila, Novia Rahmawati Isyahro	Study Of Antioxidant Effectiveness Of Meniran Leaf Hybrid (Phyllanthus niruri L.) with TiO_2-Chitosan
55	477	TNP	Hetty Manurung, Eko Kusumawati	Screening of Phytochemical and GC-MS Analysis of Lai (Durio kutenjensis Hass. Beck) The Endemic Plant In Kalimantan, Indonesia
56	480	TNP	Ritbey Ruga,Eva Marliana, Rita Hairani dan Winni Astuti	Anti acne activity of methanol extract from Kaempferia galanga L.
57	478	TNP	Nur Rani Alham, Ira Riyana Sari Siregar, Wisnu Candra Margono, Bayu Dwi Prabowo, Ulwan Fauzan Azhari	Utilization of Goat Manure Towards PLTB (Biogas) Prototypes in Simple Way

Keynote Session 1
The Dimension of Social Sciences and Humanities Under Covid-19

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Abstract

Currently the world community is experiencing covid-19 which has caused over 200 million cases worldwide and is the worst pandemic since the 2nd world war and until now it is not expected when this situation will come to an end. No doubt that the world community will face this epidemic for a long time. Indeed, there have been efforts by scientists to produce a vaccine against covid-19. However, the production of vaccines is not enough because it needs to be followed by the social and cultural behavior of the community to truly curb this epidemic. Thus, the objective of this discussion is to emphasize the dimension of the social sciences and humanities that need to be together at the forefront of studying and examining the problem of the covid-19 pandemic academically. As human beings face issues of fear and anxiety about this epidemic, issues of distrust of agencies as cases become more alarming, job loss and family loss, life stress, domestic abuse, rise in divorce rates, increase in suicide cases, huge surges of bankruptcy and so on. All of these require social science and humanities studies such as suicide studies, income gap studies, the impact of Covid-19 on the social and economic of society. Similarly, there needs to be the best strategies to carry out prevention, life adaptation, campaign to build new norms, persuasion and various enlightenment to the society to understand these problems and ways to overcome these from a social sciences and humanities aspect. This is where the situation of Malaysia's experience in facing a pandemic will be used to explore the dimension of the social sciences and humanities that can be utilized. Based on the discussion, it was found that this dimension has not been fully explored and as such given less place and position due to the community itself owing to the fact that most of them are still not ready to face the situation of covid-19.

Keywords: social sciences and humanities, covid-19 pandemic, Malaysia, research and innovation, social problems, society problems

Keynote Session 2
Air Quality Management and Sustainability Challenges

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Abstract

Heavy air pollution is considered as one of the global sustainability challenges of the modern world. Long term exposure to air pollutants increases the risk of both the risk of both respiratory diseases and air pollutant-induced mortality. The World Health Organization (WHO) reported approximately 4.2 million deaths every year due to the exposure to ambient air pollution. Notably, most of the global population (91%) lives in the areas where the concentrations of air pollutants exceed WHO limits. Developing or low/middle- income countries, especially South-East Asia regions, experience the greatest burden of ambient air pollution. In Thailand, Pollution Control Department reported that the 24-hour National Ambient Air Quality Standards (NAAQS) of particulate matter 2.5 (PM2.5) was exceeded 52 days per year and maximum daily PM2.5 concentrations of 112 µg/m^3 above the NAAQS of 50 µg/m^3 were reported in 2020. In the global Sustainable Development Goals (SDGs), unfortunately, there is no specific headline SDGs on air pollution/air quality management. However, the topic of air pollution is broadly and directly/indirectly linked to a variety of the global goals and targets (i.e., SDG 3, SDG9, SDG 11, SDG 13). Ultimately, central and local governments as well as related authorities in both developed and developing countries should develop their national and local indicators to support and strengthen attention to the topics of air pollution and air quality management. Further to this, the linkage of existing current policies on air quality management should be integrated from both non-SDGs and SDGs perspectives to make cities more resilient, green, and inclusive.

Keywords: Air Pollution, Challenges, Sustainable Development Goals, Thailand

Keynote Session 3
STEAM for SDGs; Great Needs on the Collaboration: Theory and Practices from Japan

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Abstract

The concepts of STEAM/STEM and SDGs will be able to work together in the contexts of any areas in the world. At first, I would like to share the briefing of the STEM/ STEAM movement in the US. Secondly, the briefing of STEAM/STEM explains in the contexts of Japan. Then one of the practices at high schools SDGs model learning so-called WWL(World Wide Learning) explains as learning model of STEAM for SDGS. Also, local government SDGs model at the Shizuoka City (population of around 700,000 people) has been planning in March, 2021. What are the important variables that lead to better successes for the people in those area by their own community?

Many people in Japan are not sure STEAM learning yet, however, in 2016 Japanese government developed important law, so-called "Science, and Technology Basic Law" that declare the "Society 5.0 " including new life styles caused by the Digital Transformation and other innovative new technologies. Also, Society 5.0 includes highly sophisticated problem solving with SDGs with STEAM.

Mishima North High School is challenging new learning approach with STEAM for SDGs supported by the Ministry of Japan (MEXT). September the 18th, 2021, the Global Conference were conducted among high school students from several countries. As the specialist of STEAM for SDGs, the discussion develops on the new learning approach.

Also, Shizuoka City Local Government has developed " Shizuoka City Action Planning for Environmental Education" on the March, 2021 towards to 2030. In this action planning, the development of leaders in environmental education could be realized through Project Based Learning model among the citizens and companies. In other words, they will be working together to find issues and to make efforts for the good solutions.

Keywords: STEAM/STEM, Theory and Practices of STEAM, Project Based Learning SDGs, Local City Government Efforts, Hub City of SDGs

Keynote Session 4
How can manure's nutritional value contribute to circular economy?

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Abstract

Manure has been considered an essential resource for the food supply due to its nutritional value but in some countries it has acquired a negative reputation due to its excessive production. Legislative frameworks for fertilizers try to minimize those negative environmental risks that are part of the manure's negative reputation. At present, some organizations promote manure management as a valuable product through Circular Economy approaches. Moreover in 2014 the Dutch Ministry of Agriculture indicated the "strategic connection of manure between livestock and arable farmers to minimize losses of nutrients and cover the soil needs". However, disproportionate amounts of manure can result on excess of nutrients that can pollute surface and ground water. In this research, several ways to reduce such environmental risk and value the nutritional content of manure were studied in the Dutch context. According to data of 2019, cattle manure is the most dominantly produced manure in The Netherlands.

Keywords: Manure, Circular economy

Invited Speaker 1
Study of Vitamin K on Brain Aging: Behavior Aspect

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Abstract

Beyond the role on blood coagulation and bone health, several studies showed that vitamin K (VK) also have the role on nervous system. Clinical study showed that serum phylloquinone has the positive correlation with memory performance in elderly people. Lifetime low-VK intakes also show the disturbance in the brain of animal model. In this present study we performed the evaluation of behavior disturbance in aging model mice. Using low, adequate, and high concentration of VK based on AIN93M standard diet for one year feeding, the behavior of mice was evaluated. Three time series (4, 8, and 12 months) of behavior evaluation showed that low-VK diet group demonstrated the lower spatial performance especially in alternation test and open field test. Brain immunoblot analysis showed that brain derive neurotropic factor (BDNF) level of low-VK diet group is lower compared to high-VK diet group, conversely, inflammation cytokines level of low-VK diet group is higher compared to high-VK diet group. This evidence showed another function VK on maintain the brain during aging, therefore, the role of VK on brain aging still need to elucidate.

Keywords: Vitamin K, brain aging, inflammation, BDNF

Invited Speaker 2
Mediation Analysis of Serum Uric Acid on Association Between Vitamin D and Cardiovascular Disease

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Abstract

Vitamin D (VIT D) synthesis in the body requires ultraviolet radiation from sunlight, on the other hand, studies have showed that cardiovascular disease (CVD) prevalence is also associated with exposure of sunlight. Association between VIT D deficiency and CVD has been studied, however, the mechanism behind this association is still not fully identified. There might be direct association between VIT D with CVD or indirectly through one or even multiple mediators. Thus, this study was conducted to determine both the direct association between VIT D and CVDs and the indirect effect estimation of VIT D on CVDs through the single mediator of serum uric acid (SUA).

This study used the Electricity Generating Authority of Thailand 3 cohort (EGAT3) data, consisting of 2279 adult participants from Bangkok which were surveyed in 2009, 2014 and 2019. CVD as the outcome was defined as any event of myocardial infarction or stroke during the follow-up survey while the serum VIT D was the study factor and SUA was the mediator. The data were then described and analyzed with mediation analysis by utilizing the generalized structural equation modeling, where the logit link function was used for CVD and the identity link function for SUA. Several confounders were chosen and applied in the model using the forward stepwise selection. Pathway of mediation model between VIT D and CVD through SUA was considered with its effect as log odds was estimated accordingly. Bootstrapping was performed 10000 times to approximate the bias-corrected effect. All statistical analysis was conducted using STATA version 16.1 SE. Permission to use the database and ethical clearance were obtained from the Faculty of Medicine Ramathibodi Hospital, Mahidol University.

The mediation analysis found that the direct effect log odds of VIT D on CVD was not statistically significant at 0.0026 (bias-corrected 95% confidence interval [BC95%CI] -0.033, 0.031). Similarly, the total effect log odds was found to be significant at 0.003 (BC95%CI -0.033, 0.031). We also found that the mediated effect log odds of a single mediator of SUA was also not significant at 5.43×10^{-4} (BC95%CI -6.2×10^{-4}, 0.0024). Therefore, the effect of VIT D on CVD might not be explained with SUA as single mediator.

Keywords: Cardiovascular Disease/ Mediation Analysis/ Uric acid/ Vitamin D

Invited Speaker 3
Biological Waste and Wastewater Treatment Technology in Tropical Countries

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Abstract

Waste and wastewater is one of the big issues in this world. Every country has been working to solve this problem. Chemical, physical, thermal and biological processes have been proposed for the treatment of waste and wastewater. Among them, utilizing microorganism, biological method is environmental friendly and low operating cost. The optimal operation condition of biological process is usually at mesophilic condition. It is very beneficial to be applied in tropical countries such as Indonesia with the temperature ranges from 20 to 30^{o}C. Based on oxygen demand, biological processes are divided into aerobic and anaerobic. Each process has its own advantages. While aerobic treatment is applied for treating low strength wastewater with COD of less than 1 mg/L, the anaerobic process can commonly treat higher organic loading. Fish processing wastewater (FPW) with the average concentration of 32.81 ± 3.20 g-COD/L could be treated using a self-agitated baffled reactor with a high organic loading rate of 7.62 g-COD/L/d. This study achieved promising result with the average of COD removal efficiency of 89%. Biological wastewater treatment is usually not in one stage. In case of FPW, the digested FPW has high ammonia concentration which needs more treatment to decrease it. Anaerobic ammonia oxidizing (anammox) process is an excellent method to solve this problem.

Keywords: waste and wastewater, biological treatment, anaerobic digestion, anammox process

Invited Speaker 4
Reform of the Teacher Professional Knowledge in Science Education in Pandemic Era

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Abstract

The pandemic era gives a shift educational system in teaching for the teachers. The online system must be used to teach effectively to prevent the spread of the covid-19. Especially in science education, the teacher should implement two teaching ways: minds-on activity and hand-on activity. Implementing science teaching in the pandemic era was a challenge because involving technology skills has become a priority recently. This research aims to explore the professional teaching skills in teaching science education in the pandemic era using reform teaching professional protocol (RTOP), especially in the pandemic era. This research was an exploratory analysis that explores the teacher's ability to mastery of teacher professional knowledge in science education. The criteria investigated were pedagogical knowledge, content knowledge, students condition knowledge, assessment knowledge, circular knowledge, and technology knowledge. The participants in this research were 20 teachers who have more than five years' experience teaching in junior high school. The result indicated that teachers do not have adequate skills to mastery of technology knowledge and student's condition knowledge. Mainly, not all teachers could be applied the hands-on activity in the online classroom because of the limitation of teacher knowledge to integrate the online sources to use in the online system. This research contributes to acting in more professional development for the teachers who need to be trained in utilizing internet sources.

Keywords: Teacher, Professional Knowledge, Science Education, Pandemic

TEE-416
Geographical Risk Factors of Strongyloides stercoralis infection in East Kalimantan Province, Indonesia

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Abstract

Strongyloides stercorali/ S. stercoralis infection is still challenge in public health problem especially in developing countries where have geographical risk factors especially geographical factors that are potential for transmitting of *S. stercoralis* infection. A cross-sectional study was performed among 213 participants from rural community of Muarakaman district and Marangkayu districts, East Kalimantan province, Indonesia. In this study used two diagnostic methods: Kato Katz and Koga agar plate culture/KAP culture for diagnosing of *S. stercoralis* infection. Pearson chi-square and odd ratio analysis were used for study correlation and level of geographical risk factors and *S. stercoralis* infection. We found *S stercoralis* infection in East Kalimantan Province was 34 (8%). Geographical risk factors While pH of soil, clay content of soil, vegetation, and villages area have not correlated significant with *S. stercoralis* infection (p value > 0.05). Elevation from above sea (≥41.6m) was highest odd of *S. stercoralis* infection OR: 2.72 (95%CI: (1.30-5.66). Geographical factors might support survival ability of *S. stercoralis* larvae for migrating and transmission. Essential geographical risk factors of the infections should be used for preventing program of reduction prevalence *S. stercoralis* infection.

Keywords: S. stercoralis, Geographical factors, East Kalimantan Province, Indonesia.

TEE-417
Changes Detection of The Surface Coal Mining in Samarinda Using Time Series Landsat Imageries

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Abstract

Coal mining and reclamation are the main drivers for land use land cover (LULC) change in Samarinda City, East Kalimantan Province of Indonesia. Understanding LULC change has become a requirement in managing and restoring natural resources. Analysing spatio-temporal characteristics of LULC change is essential for understanding and assessing the ecological consequences of coal mining and other anthropogenic activities. In this study, we used a visual interpretation of the time series Landsat imageries in combination with existing land cover maps to create a set of annual maps and to analyze their changes for the Samarinda City from 1990 to 2020. The Landsat data used, were L1T standard data products which were radiometrically calibrated and orthorectified. Our results reveal the acceleration of LULC changes in Samarinda since 1990. The area of surface coal mining has increased from year to year, while the post- coal mining areas have not been restored and managed optimally. This study helps to quantify the post-coal mining area and will provide the supporting analysis for decision making in formulating the strategic environmental plans for managing and restoring the post-coal miningareas in Samarinda.

Keywords: Change Detection, Coal Mining, Landsat Imageries

TEE-421
Comparison of Content and Status of the C-Organic, Nitrogen, C/N Ratio, Soil pH, and Organic Matter in Rainfed, Tidal and Swampy Rice Fields (Case Study in Three Villages, in East Kalimantan)

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Abstract

The purpose of the research is to identify the current condition of land fertility; for improvement and sustainabilityof land productivity, and for sustainable management actions. The research was carried out by taking 5 soil samples in 10 plots of rainfed rice fields, tidal rice fields and swamp rice field that had been determined, using a soil drill with a depth of ±30 cm; took 1 kg compositely from each of 5 samples and analyzed at the Laboratory of Soil Science, Faculty of Agriculture, Mulawarman University. The results of laboratory analysis provide information that: 1). Rainfed rice fields show, on average: C-organic content in moderate status (2.08%), Total N content in moderate status (0.34%), C/N ratio in low status (6.28), pHvalue in very acidic status (4.48), organic matter content, in moderate status (3.57%). 2). Tidal rice fields, showing the average: C-organic content in high status (3.27%), Total N content in moderate status (0.41%), C/N ratio in low status (7.89), pH value in very acidic status (4.28), organic matter content, in moderate status (3.58%); 3). Swamp Rice field, shows the average: C- organic content in high status (3.06%), Total N content in moderate status (0.46%), C/N ratio in low status (6.84), pH value in very acidic status (4.25), organic matter content, in high status (5.26%).

Keyword: comparison, C-Organic, Organic matter, rain-fed, tidal and swampy swamp

TEE-423
Essential Ecological Risk Factors of Strongyloides stercoralis infection in Rural Areas Kutai Kertanegara, Indonesia

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Abstract

Strongyloides stercoralis infections are still challenge in public health problem especially in developing countries where have ecological risk factors. In rural areas of Kutai Kertanegara regency have high risk of ecological factors of the prevalence *S. stercoralis* infections, A cross-sectional study was performed among 426 participants from rural community of Muarakaman District and Marangkayu Districts, Kutai Kertanegara Regency. In this study would show the infection rates, correlation analysis between environmental risk factors and prevalence of hookworm infection with statistical analysis. We performed a cross-sectional study among 426 participants from rural community of Muarakaman District and Marangkayu Districts, Kutai Kertanegara Regency East Kalimantan Province, Indonesia. In this study used two diagnostic methods: Kato Katz and Koga agar plate culture/KAP culture for diagnosing of hookworm and Strongyloides infections. Pearson chi-square analysis was used for study correlation between ecological risk factors with *S stercoralis* infection. *S stercoralis* infections were found in this study; 34 (8.0%), Ecological risk factors have significant correlation and high odd ratio of prevalence of *S. strercoralis* infections. Essential ecological risk factors of the infections should use for preventing program of reduction prevalence of *S stercoralis* infections.

Keywords: S. stercoralis, Ecological factors, Rural areas, Kutai Kertanegara.

TEE-436
Association of Endophytic Fungi in Rice Root (*Oryza sativa L*)

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Abstract

The aim of this research was to elaborate the association of endophytic fungi found in the root tissue of rice plants (Oryza sativa). The sampling location was in Sungai Kapih Village, Sambutan District, Samarinda City. This research was conducted at the Plant Disease Pest Science Laboratory, Faculty of Agriculture, Mulawarman University. The method used in this study were staining the roots of rice plants and observing endophytic fungi in the root tissue of rice plants under the microscope. The results showed that the root tissue formed hyphae and spores in the root cortex. The hyphae that were found had hyphae that were neither insulated nor insulated, forming long chains with spherical spores. In the roots of the control plants, there were no endophytic fungi that formed colonies in the root tissue.

Keywords: endophytic fungi, rice, association

TEE-441
GIS Mapping Based on Spatial-Temporal Model Estimation Affecting COVID-19 Outbreak in Kalimantan

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Abstract

This research is about GIS mapping based on Spatio-temporal model estimation forthe factors that influence the increase in Covid-19 cases in Kalimantan. Observation data consists of 56 based on the Regency/City scale in Kalimantan. Secondary data sources from the official COVID-19 website, Badan Pusat Statistika and Dinas Kesehatan Kalimantan. The variables used are COVID-19 cases, number of doctors, number of hospitals, number of puskesmas, number of tuberculosis cases, percentage of the elderly population, population density, percentage of poor people, and gross regional domestic income as regional economic indicators. Data Period 2020 to August 10, 2021. The research uses Spatio-temporal analysis are the Geographically Weighted Panel Regression (GWPR) model with the geographic weighting of Gaussian, Bisquare, and Tricubekernel functions. The GWPR model can provide better estimator results than the Geographically Weighted Regression (GWR) model because it considers location and time aspects simultaneously. The GWPR model is a combination of panel regression analysis and GWR. The result of the research for the best model is GWPR with a geographic weighting ofthe bisquare kernel function. The model criteria are based on the coefficient of determination and RMSE. The results of the significance test of the GWPR model parameters on 56Regency/City data in Kalimantan resulted in mapping, which was grouped into 24 groups basedon the significant variables of each region.

Keywords: GIS Mapping, Spatio-temporal, Geographically Weighted Panel Regression, COVID-19 Outbreak, Applied Geography

TEE-444
Effect of UVA, UVC, UVA/TiO_2, and UVC/TiO_2 for Degrading Synthetic Dyes

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Abstract

The purpose of this study was to determine the photolysis effect to methyl orange (MO) and then, role of TiO_2 photocatalyst. The synthesis of TiO_2 photocatalyst was carried out using the Sol-Gel method with a ratio of 3:1:4 between ethanol, titanium butoxide and DI Water. The degradation reaction of methyl orange was tested using a concentration of 5 ppm of MO solution. Sampling was carried out every 30 minutes for 5 hours. Then, tested using UV-VIS spectrophotometry with a wavelength along 464 nm. The results of photolysis of methyl orangedye were 14.17% and 12.62% for UVA and UVC, respectively. While, the degradation using UVC/TiO_2 and UVA/TiO_2 were 58.49% and 65.55%, respectively. pH variations and MO concentration were conducted. The optimum results at pH 7 were 37.08% and 27.33% for 10 ppm and 15 ppm, respectively.

Keywords: Photolysis, Photocatalyst, TiO_2, UVA, UVC.

TEE-450
Diagnose Digestive Disease and the Selection of Borneo Medicinal Plants as an Alternative Treatment

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Abstract

The human digestive system is the system used in the human body for the process of digestion.The human digestive system consists primarily of the digestive tract or the series of structures and organs through which food and liquids pass during their processing into forms absorbable into the bloodstream. This research develops a system of diagnosis of digestive diseases. The system assists people in knowing about the type of digestive diseases experienced, the diseases:diarrhea, constipation, ulcers, and appendicitis with fifteen symptoms and twenty-five species of medicinal plants from the Borneo rainforest. We use the Certainty Factor Method because it may facilitate the selection of symptoms of digestive disease. The diagnosis system developedto analyzes the symptoms of the disease whose inputted and then processed using the calculation of the Certainty Factor. This study aims to describe the types of digestive disease and display the species of Borneo medicinal plants. Diagnosis results using the Certainty Factorobtained a value of 87.33% for ulcer disease and medicinal plants used as alternative treatments:cinnamon, hiring, and guava leaves.

Keywords: Expert System, Certainty Factor, Medicinal Plant, Digestive Disease

TEE-453
Degradation of Methylene Blue using TiO_2/UVC Photocatalyst and Role of Scavengers

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Abstract

Photocatalyst TiO_2/UVC was aimed to degrade concentration variations of Methylene Blue (MB). This research also studied effect of scavengers using carbonate (i.e. $CaCO_3$). The research includesof synthesis using the Sol-Gel method and photocatalyst study of 0.5, 0.75 and 1 gr of TiO_2 whichwere contacted to 500 ml of methylene blue. MB concentration variations of 5 ppm, 10 ppm, and15 ppm were studied. The effect of scavengers were studied using 10 mg and 20 mg CaCO3. Samples were taken every 30 minutes for 5 hours followed by UV-Vis spectrophotometer analysisat λ 665 nm. The results found that 5 ppm methylene blue degradation were 53,36%, 42.99% and18,85% for 0.5, 0.75 and 1 gr of TiO_2, respectively. While, the degradations were 27,89% and 23,29% for 10 and 15 ppm of MB, respectively. The effect of scavengers were 89,72% and 80,23%for 10 mg and 20 mg $CaCO_3$, respectively.

Keywords: Photocatalyst, TiO2, UVC.

TEE-456
Soil Quality Index Analysis of Secondary Forest and Palm Oil Plantation

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Abstract

Soil quality greatly determines the ability of the soil in carrying out its functions to support the life of organisms in a sustainable manner. Land use and land management have the role of increasing or decreasing the quality of a land. This research was conducted to determine the index of soil quality in secondary forest land use and oil palm plantations and evaluating the application of the concept of sustainable agriculture to oil palm plantations. This research was carried out from July to October 2019 in Bukit Biru and Loa Ipuh Darat village, Tenggarong and in the Mulawarman University Faculty of Agriculture. This study uses the concept of Minimum Data Set (MDS) with the assessment of several indicators and soil functions. The assessment function is adjusted to the environmental conditions in which the research is conducted. This study shows that secondary forest use has a soil quality index value of 0.638 with Good criteria, and oil palm plantation land use has a soil quality index of 0.592 with Moderate criteria. Oil palm plantations in this study have not yet reached the concept of sustainable agriculture.

Keywords: Oil palm plantation, secondary forest, soil quality index (SQI), sustainable agriculture

TEE-458
Design of a Waste Power Plant Prototype Based on the Waste Types as a Source of Renewable Energy

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Abstract

Renewable electricity from waste is one of the solution to overcome the problem of energy crisis of fossil fuels and also a solution to reduce waste number that keeps growing in Indonesia. Indonesia has abundance number of rubbish for Waste Power Plant, so that it can produce enough electricity which has been a big problem for Indonesia, such as the lack of electricity in some regions. In this journal, wecreated a Waste Power Plant Prototype (WPP) using the incinerator method or also usually called combustion. The initial step to do was collecting references data in the form of journals. The next step was assambeling the waste power plant prototype, and finally testing the prototype. Based on the resultof the test by comparing the different types of waste, namely; used woods, dry leaves, and papers with a load of one LED, obtained the average power was 0.1763 watts. From the prototype testing that has been done, it can be concluded that the power produced by used wood waste was greater than other waste types.

Keywords: Electricity, Power Plant, Waste

TEE-459
Response of Shallots (Allium Ascalonicum L.) and Its Diseases on The Trichokompos Fertilizer and Frequency of Weed

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Abstract

A study that aims to find the dose of Trichokompos fertilizer and the frequency of weed control to avoid diseases that attack shallot plants has been carried out in Bendang Raya Village, Tenggarong District, Kutai Kartanegara from November 2019 to January 2020. Split Plot 4 x 5 design which was repeated 3 times arranged in a randomized block design was used. The main plot consisted of 4 levels of Trichokompos dose, namely: Control (t0); 2.5 kgplot-1 is equivalent to 25 Mgha-1 (t1); 3 kgplot-1 is equivalent to 30 Mgha-1 (t2); 3.5 kg plot-1 is equivalent to 35 Mgha-1 (t3), while the sub-plots are weed control frequency (G) which consists of 5 levels, namely: no weed control (g0); once a week (g1); every 2 weeks (g2); every 3 weeks (g3); once every 4 weeks (g4). The treatment of trichocompost fertilizer had an effect on tuber volume, the highest volume in the treatment of 3 kg plot-1 was 3.68 mL. Weed control treatment affected the number of tubers planted, weed population, and weed dry weight. The highest number of tubers in weed control 2 times a week was 6.69 bulbs. Treatment with a dose of trichocompost 3.5 kg plot-1 and weeding once a week can reduce the intensity of attack on moler disease 0.12%, anthracnose 0.8% and purple spot 0.2%. No interaction was detected between the dose of Trichokompos and the frequency of weed control.

Keywords: Shallots, trichocompost fertilizer, weed control frequency

TEE-464
Insecticidal activity of Kirinyuh leaf extract (Chromolaena odorata L.) against armyworm Spodoptera litura F. (Lepidoptera: Noctuidae)

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Abstract

Armyworm, *Spodoptera litura* F. (Lepidoptera: Noctuidae) is a polyphagous insect with the statusas an important pest on various vegetable and food crops in many regions. Here, we examinedthe activity of Kirinyuh leaf extract (*Chromolaena odorata* L.) as a botanical insecticide on thedevelopment of armyworms in the laboratory. The armyworm larvae were fed on a natural dietwith *Mikania micrantha* leaves which had been treated with Kirinyuh leaf extract with six levelsof concentration. Kirinyuh leaves were extracted using the maceration technique with methanolas a solvent. The results showed that the Kirinyuh leaf extract treatment with a concentration of 40 g-1 significantly increased the mortality of armyworm larvae by 72.5%. Kirinyuh leaf extract also increased imago formation failure by 86.3%. This result suggests that Kirinyuh haspotential use as a botanical insecticide to control armyworms.

Keywords: larvae, mortality, pesticide

TEE-466
Quantifying Carbon Stock in Mangrove Restoration Area of Lembar Bay, Lombok

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Abstract

Mangroves in Indonesia has continued to degrade in recent decades and are predicted to be a carbon source. Then, restoration of mangrove becomes important in mangrove disturbed area. This study was investigated to inspect the ability of the restoration process in reestablishing themangrove role as natural carbon sink in the soil. The study area was in three main plots of the mangrove restored area in Lembar Bay - Lombok, with different age of mangrove since planted.A 7-m radius circular plot was established in eight subplots to collect diameter at breast height(DBH), number and species name of each tree and soil cores. A half meter of soil core was collected in each subplot to measure the soil carbon stock. Dry combustion method was used to count soil organic carbon concentration (SOC). DBH data were used to calculate the carbonstock in mangrove biomass by using allometric equations. Results show that carbon stocks ranged from 76.12 - 140.55 MgC/ha with 84.60% stored in the soil. The carbon stock increasedfrom newly restored area to old mangrove-restored area. However, the carbon stock between soil and tree biomass were not correlated.

Keywords: Mangrove, Soil Organic Carbon, Carbon Stock, Lombok

TEE-027
Analysis of Covid 19 Variants in Samarinda City

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Abstract

Emerging variations not only enhance transmissibility, morbidity, and death, but they can alsoavoid detection by existing or currently accessible diagnostic tools, delaying diagnosis and treatment. This study aims to predict the presence of new variants based on CT values in an area. We analyzed the 2018 SARS Cov2 positive samples available at Department of Microbiology Mulawarman University from July 2021 until September 2021. We use ORF1ab and RpDp gene method analysis to measure CT value. Proportion CT value < 29 = 39%, 30 – 37 = 42% and CT 38-40 = 19%. We found that the proportion of CT value <29 was highest in July-early August when the delta variant spread at 3 areas. In order to account for the rising prevalence of the new variety, disease control such as population testing,quarantine during pre-symptomatic infection, and virus genomic surveillance should be increase.

Keywords: SARS Cov2 ,CT value, Variant

TNP-422
Hemagglutinins Inhibitors from Tropical Medicinal Plants Used in Sudan

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Abstract

Virulence factors are molecules that support the formation and preservation of various bacterial or viral pathogens on the host tissues. Consequently, these virulence factors are believed to harm the host through numerous mechanisms. Hemagglutinins are a large class of virulence factors associated with several diseases including cardiovascular diseases, diabetes, periodontal diseases, and even Covid-19. *Porphyromonas gingivalis* bacteria produce several virulence factors comprising large molecules of proteins identified as hemagglutinins which lead to different diseases. These proteins are vital molecules that allow *P. gingivalis* to adhere to the host cell then uptake iron and heme by attaching, aggregate, and lyse erythrocytes to facilitatebacterial survival and maturation. In order to prevent the adherence of *P. gingivalis* to the hosttissues, and to block the aggregation of erythrocytes, we focused on the inhibition of the hemagglutinating activity of *P. gingivalis*, by plants extracts from tropical regions used in Sudanese traditional medicine. In this study, we aimed to evaluate the aqueous extracts of dry,powder seeds from *Monechma ciliatum*, *Monechma debile*, and *Prunus mahaleb* for in vitro activity against the hemagglutination of P. gingivalis. using the inhibition assay as the experimental model. All extracts have inhibitory activity against hemagglutination. Nonetheless, *M. ciliatum* seeds water extract shows potent inhibitory activity against the testedassay with MIC value 0.03 mg.mL^{-1}. Subsequently, the water extracted from dry powdered seeds of *M. ciliatum* was partitioned using ethyl acetate followed by reversed-phase chromatography, thin-layer chromatography, ESI-MS, and NMR analysis resulting in the isolation of four compounds which identified as oleic acid, coumarin,1,2-dioleoylglycerol, and 1,3-dioleoylglycerol with MICs of 15-100 µg.mL^{-1} against hemagglutination. We believe thatisolation and identification of the inhibitor materials from *M. ciliatum* seeds will develop a new therapeutic agent against hemagglutinins in which might help to delay or control numerous systemic diseases through the interaction with the virulence factors.

Keywords: Virulence factors, Hemagglutination, M. Ciliatum, M. debile, P. mahaleb, P. gingivalis.

TNP-429
Crystal Structure, Mineral Content, β-Carotene, α-Tocopherol, Antioxidant and Functional Group Active of Pre-gelatinization and Pre-Digest White and Red Rice Flour from East Kalimantan as Source of Anti-Stunting Nutrients

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Abstract

Stunting is a priority national research agenda, as a focus discussion in the 2018 National Food Workshop. Strategic Plane of LP2M Mulawarman University places food as one of the nine priorities of Unmul for 2021-2024. Red rice is a food that contains a lot of β-carotene and α-tocopherol. Vitamin E in white rice depends on the milling degree because the composition of vitamins is generally in the layer of rice bran. The aims of this study are: (1) to characterize the content of β -carotene, α-tocopherol, minerals, and antioxidants in 30 local red and white rice cultivars from East Kalimantan; (2) The 2 best red rice and white rice cultivars selected based on the content of β-carotene, α-tocopherol, minerals and antioxidants, and (3) Observing the effect of processing rice into rice flour using the conventional technique, Pre-Gelatinization, Pre-Digest and the combination of Pre-Gelatinization and Pre-Digest as raw materials for anti-stunting processed food. The parameters observed consisted of functional group (FTIR), crystallinity (XRD), morphology (SEM), gelatinization profile (RVA), β-carotene, α-tocopherol, minerals, and antioxidants.

Keywords: Anti-Stunting, Red rice, White rice

TNP-435
Green Synthesis of Silver Nanoparticles From Soursop Leaf Extract (Annona Muricata Linn.)

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Abstract

Green synthesis of silver nanoparticles using plant has been interested in recent years. In the present study the silver nanoparticles were synthesized using a bioreductor fromsoursop leaf extract *(Annona Muricata* Linn*).* In this study, we investigated the concentration of the $AgNO_3$ solution and then the most stable silver nanoparticles were varied again in the ratio of the volume of the bioreductor to the volume of $AgNO_3$. The nanoparticles were characterized using the UV-Vis Spectrophotometer, Particle size analyser (PSA) and Transmission electron microscopy (TEM) . The results indicate the most optimum conditions were at a concentration of 1 mM $AgNO_3$ with a bioreductant volume of 2 times the volume of1 mM $AgNO_3$ solution. The results of the TEM analysis show that the particle morphology is spherical and tends to be less uniform. In the PSA analysis results obtained particle size distribution is 40-170 nm and the average is 170.6 nm. This green synthesis provides an economic, eco-friendly, and clean synthesis route to silver nanoparticles.

Keywords: Silver nanoparticles, Green synthesis, Soursop leaf extract

TNP-439
Prototype of Automatic System DC Fan Speed Based by Microcontroller, and Connected to Blynk (Internet of Things)

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Abstract

Fan is always ordinary thing at home, human needs fan for comfortable while rest, and lower the temperature of the body if the weather is too hot. But fan brings adverse effect like, the experience pain in certain parts of body, for example, Stiffness caused by strong blow of the wind againts the body. The purpose of making this prototype is to automatically adjust the fanspeed based on the distance from the fan to the human. By using an ultrasonic sensor, Passive Infrared sensor, we can automatically turn off the fan, without pressing any button. And there is also DHT11 sensor which allows us to know the room temperature and humidity of the room that is being occupied. The fan will automatically turn off if it does not detect humans within 1 minute 40 seconds. And even though there is noone around, it is still possible to turn it on and off by using the Blynk application, the temperature of the room will also appear on the Blynk application, the microcontroller board used is Arduino Uno, and NodeMCU as intermediary for the internet.

Keywords: Automatic Fan, Blynk, NodeMcu, ArduinoUno, IOT

TNP-442
Potential of Nutraceutical Gummy Candy from Kepok Banana Peel Extract (Musa paradisiaca Linn.) in Combination with Kelulut Honey (Trigona incisa) as a Covid-19 Supportive Therapy

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Abstract

Mutation of Coronavirus Disease causes the need to implement health protocols, in line with the ongoing research on Covid-19 treatment. In patients with Covid-19, oxidative stress can occur due to the production of free radicals resulting from the high activity of pro-inflammatorycytokines. Flavonoids and their derivates have three mechanisms in Covid-19: an antioxidant to prevent oxidative stress, a cofactor of endogenous antioxidant, and binding specifically to Sars-CoV-2 protein. The content of flavonoid compounds in kepok banana peels and kelulut honey can be used as antioxidants to prevent oxidative stress, made in nutraceutical gummy candy because it is attractive and widely liked. The purpose of this research is to determine theantioxidant activity of the combination of kepok banana peel extract and kelulut honey, the optimal formula for gummy candy base, the excellent formula for gummy candy preparations from kepok banana peel extract and kelulut honey, and its potential as supportive therapy for Covid-19 through its antioxidant activity. This research is empirical research and laboratory research. The proper gummy candy formula was optimized using Design Expert V.10 software.Antioxidant activity of the combination increasing the antioxidant activity of each with an IC_{50} value of 83.176 ppm at V2. The best optimization base formula is F2, with a ratio of gelatin and carrageenan 0.588% and 0.412%. The antioxidant activity in the gummy candy formulationhas an IC_{50} value of 93.34 ppm. The evaluation, such as organoleptic, moisture content, ash content, and heavy metal contamination, is compatible with the requirements in SNI-3547.2- 2008 about gummy candy. Based on the results, it can be seen that the nutraceutical gummy candy made has the potential as a supporting therapy for Covid-19.

Keywords: Covid-19, Gummy Candy, Antioxidant

TNP-445
Phytochemical analysis of ethanol extract from stingless bee (Tetragonula laeviceps Smith) honey and its anti-acnes activity

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Abstract

Ethanol extract of stingless bee (*Tetragonula laeviceps*) honey were conducted for its phytochemical analysis and anti-acnes potential by using agar well diffusion and micro-dilutionmethods to conduct diameter of inhibition zone and minimum inhibitory concentration (MIC) value against *Propionibacterium acnes*, respectively. The result of phytochemical analysis demonstrated that ethanol extract of the stingless bee honey contains secondary metabolites namely alkaloids, steroids, triterpenoids, phenolics, saponins, tannins and quinones. Moreover, the ethanol extract displayed anti-acnes activity with diameter inhibition zone of 17.3 mm against *P. acnes* while MIC value at 0.78 µg/mL.

Keywords: Tetragonula laeviceps, phytochemical analysis, anti-acnes activity.

TNP-452
Prototype of Smart Trash bin based by Microcontroller with Telegram communication

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Abstract

Waste is one of the crucial issues live. Amount of waste scattered is a manifestation of people'sindifference to the cleanliness of surrounding environment. Often lazy feeling to dispose out the bin is also caused by the large number of conventional bin cans that still use manual ways to open and close them. In additional a clean environment , it's necessity for today's society. Many people install surveillance cameras at home to monitor the house when it is empty, but when the cameras detects the presence of unwanted people, the owner isn't notified immediate. Current technological developments are increasingly rapidly motivating humans to overcome existing problems. This study aims to design an automatic bin can with a security system witha surveillance camera that directly notifies homeowners through existing messaging applications. This smart bin built using Ultrasonic sensors and PIR sensors, servo motors, and ESP32-CAM which are all connected to the microcontroller and utilize Telegram Messenger as monitoring remote.

Keywords: Smart trash bin, Ultrasonic sensors, PIR sensors, Home security

TNP-457
Purun Plant in East Kalimantan, The Endemic Plants in Peat and Swamp Areas as A Humid Tropical Local Commodity with Superior Potential

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Abstract

Purun plant is one of the endemic plants that naturally grows wild in peat and swamp areas. It is commonly found in peat and swamp areas in Indonesia, including in East Kalimantan. Purun belongs to the *Cyperaceae* family. This plant is a typical plant in swamp areas. Swamp land is land for a long time during the year is always saturated with water or inundated. Purun plants are wild plants that can adapt well to tidal swamps, acid sulfate and peat. This plant has many benefits for the growing environment, including as an absorber and water filter that can maintain the environmental conditions of tidal swamps and peat because resistant to high soil acidity (pH 2.5-3.5), as indicator vegetation for acid sulphate soils, as an alternative hosts for pests and shelter or natural enemy habitat, as biofilters, biofertilizers and it can help maintains soil moisture to prevent fires during the dry season. Recently, at least 11,000 ha of peatland are moderately to heavily damaged in Kabupaten Kutai Barat and 15,000 ha in Kabupaten Kutai Kartanegara, while those classified as lightly damaged are around 49,000 ha in Kabupaten Kutai Barat and 178,000 ha. in Kabupaten Kutai Kartangara. The increasingly degradation of peatlands in East Kalimantan must be controlled to avoid negative ecological impact. The restoration of degraded peat ecosystems can only be done by rewetting the land. The existence of peatlands as purun plant habitat in East Kalimantan cannot be separated from the humid tropical climate conditions. Humid tropical climate is a condition in the wet tropics which is located between 15º North Latitude and 15º South Latitude. Humid tropical climate is characterized by relatively high air humidity, high rainfall and air temperature. Recently, Kalimantan people know three types of purun plant, namely purun danau, purun tikus and purun bajang. The purun danau has a fundamental difference size when compared to the purun tikus and purun bajang, also the purun danau leaves are tougher like woody and have more distinct lines than other types. Purun danau also has a cavity that looks like a bamboo stick. The objectives of this project are: 1) to educate the community around peatlands and tidal swamps to participate in preserving the environment; 2) transferring and increasing the knowledge and skills of the people around peat and tidal swamps to appropriate technology for cultivate and use purun plants to be some product with high economic value. The result from this project can be a role model and obtain outcomes that support sustainable agriculture and environmental sustainability of peatlands and tidal swamps, specifically in East Kalimantan.

Keywords: Purun, Local Plant, Peatland, Swamp, Sedge Plant

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TNP-471
Study of Antioxidant Effectiveness of Meniran Leaf Hybrid (Phyllanthus niruri L.) with TiO2-Chitosan

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Abstract

A preliminary study of the antioxidant effects of the hybrid extract of meniran leaves (*Phyllanthus niruri* L.) with TiO2-Chitosan has been carried out. This study aims to determinethe effectiveness of nanoscale hybrid organic and inorganic antioxidants, namely meniran leafextract (*Phyllanthus niruri* L.) and TiO2-Chitosan nanocomposite, which can improve the desired functional and properties. Hybrid was carried out with a mass ratio of meniran leaf extract (*Phyllanthus niruri* L.) and TiO2-Chitosan (1:1). Meniran leaf extract was obtained by maceration method using ethanol while TiO2-chitosan was synthesized by calcination method at 400°C. Antioxidant activity was determined by the radical scavenging method 2,2- diphenyl-1-picrylhydrazyl (DPPH). Comparison of meniran leaf extract (*Phyllanthus niruri*L.) and hybrid meniran leaf extract (*Phyllanthus niruri* L.) with TiO2-Chitosan has IC50 values of 197.571 mg/L and 99.997 mg/L, respectively. Hybrid meniran leaf extract (*Phyllanthus niruri* L.) with TiO2-Chitosan has antioxidant effectiveness two times higher than meniran leaf extract (*Phyllanthus niruri* L.) alone.

Keywords: Meniran, Hybrid, Chitosan, TiO_2, Antioxidant

TNP-477
Screening of Phytochemical and GC-MS Analysis of Lai (*Durio kutenjensis* Hass. Beck) The Endemic Plant In Kalimantan, Indonesia

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Abstract

Lai (Durio kutejensis) is one of the most types of fruit plants that grows endemic in Kalimantan Indonesia, and traditionally its leaves are used to treat several diseases in humans. But today, there has been no research on phytochemical compounds and biological activities of leaf extracts of this plant. So, the study aimed to determine the phytochemical content, antioxidant activity, and bioactive compounds in leaf methanol extract of D. kutejensis. Gas chromatography-mass spectrometry (GCMS) analysis was performed to determine the bioactive compounds of lai leaf methanol extract. DPPH (2,2-diphenyl-1-picrylhydrazyl) was used to evaluate antioxidant activity. Phytochemical test results showed that the methanol extract of lai leaves contains alkaloids, flavonoids, phenolics, saponins, and steroids. Quantitative analysis also proved that the methanol extract of lai leaves contains some phenolic and flavonoid compounds. The results of GCMS analysis of lai leaf methanol extract proved to contain some active compounds including 2-(1,1-dimethyl ethyl)-Phenol; 4-(3-hydroxy-1-propenyl)-2-methoxy-Phenol (Coniferyl alcohol); E7-Decenylacetate;Octadecanoic acid (Stearic acid); 1,3,6-Octatriene, 3,7-dimethyl-, (Z)-; Palmitaldehyde, diisopentyl acetal; Ledol; Estran-3-one, 17-(acetyloxy)-2-methyl-, (2.alpha.,5.alpha.,17.beta.)-. The results of this study prove that the methanol extract of lai leaves can be used as a source of active medicinal ingredients and has the potential to treat several diseases in humans.

Keywords: Bio-active compounds, Endemic plant, Lai (Durio kutejensis Hassk Becc), Phytochemical.

TNP-480
Anti-acne Activity of Methanol Extract from *Kaempferia galanga* L

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Abstract

Dried rhizome of *Kaempferia galanga* L have been extracted with methanol to gain methanol extract and evaluated its anti-acne activity against *Propionibacterium acnes* and *S. aureus* usingagar well diffusion and micro-dilution methods. With 100 µg/mL, the methanol extract of *K. galanga* rhizome demonstrated antibacterial activity against *P. acnes* and *S. aureus* with inhibition zones of 12.0 and 13 mm, respectively. Moreover, the methanol extract performed MIC values of 3.91 µg/mL toward both tested bacteria. Chloramphenicol as positive control showed anti-acne activity against tested bacteria with inhibition zones of 25.0 and 26.0 mm andits MIC values of 0.195 and 0.097 µg/mL, respectively.

Keywords: Kaempferia galanga L, methanol extract, anti-acne activity.

TCBD-431
Microteaching for Pre-service Science Teachers during the COVID-19 Pandemic: A Theoretical Framework

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Abstract

Teaching has a unique complexity that intertwines the ability to deliver information and the information itself. While the terminology of teaching is specifically used for teachers, developing teaching ability is well-known through microteaching class for pre-service teachersthat initially conducted in Stanford University since 1966. On the other hand, the pandemic forces the pre-service science teacher program to switch from face-to-face to online system. Therefore, the specific framework of microteaching for pre-service science teachers as an adaptation to the need of online teaching is essential to be explored deeper. Our research conducted a literature review on articles in various educational databases, journals, and books. This paper presents an outline of the coherence in microteaching during pandemic, TPACK for pre-service science teachers and conceptual framework for microteaching for pre-service science teacher during pandemic.

Keywords: Microteaching, Pre-service Science Teacher, Theoretical Framework

TCBD-483
Computational Intelligent Algorithms in Multi-Sensor Data Fusion for UAV Detection and Identification: Challenges and Opportunities

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Abstract

Nowadays, counter-Unmanned Aerial Vehicle (c-UAV) applications include multi-sensory devices, such as electro-optical, thermal, acoustic, radar and radio frequency sensors, the data of which can be combined to increase confidence in hazard identification. Object identification,classification, multi-object tracking, and multi-sensory information fusion are just a few of thedifficult challenges that occur as a result. Researchers have made significant progress in recentyears using deep learning-based approaches to accomplish similar tasks for generic objects, butusing deep learning for UAV detection and classification is a new idea. Consequently, there isa need to offer an overview of deep learning technologies applied to c-UAV related tasks usingmulti-sensor data. The significant increase in the number of articles on “c-UAV systems” in recent years shows that research in this area still has enormous opportunities. The aim of this paper is to describe improvements in deep learning on c-UAV-related tasks when applied to data from multiple sensors, as well as multi-sensor information fusion, and to make recommendations for using deep learning algorithms in UAV detection and identification.

Keywords: UAV; Multi sensor Data Fusion; Deep Learning; UAV detection; UAV identification.

SEE-411
Analysis of the Impact of the Covid-19 Pandemic on the Coal Mining Industry Sector At Pt. Jhonlin Baratama Site Lolo, Js Group Paser Regency

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Abstract

The Covid-19 pandemic has had a major impact on every economic sector in Indonesia, including the mining industry sector. PT Jhonlin Baratama is one of the mining industries located in Kuaro District, Lolo Village, Paser Regency, directly adjacent to PT. Kideco Jaya Agung. The study aims to determine the impact of the Covid-19 pandemic on the mining industry sector. This research uses descriptive qualitative research. Data collection techniques were carried out using observation, interview and documentation techniques. The data analysis technique used in this research is to use the data analysis method of the Miles and Huberman model which is carried out in three stages, namely 1) data reduction; 2) Display data and; 3) Drawing conclusions. The results showed that the Covid-19 pandemic had an impact on the mining industry sector, namely, an intensive reduction in salaries, then a decrease in demand for existing coal and also the value of East Kalimantan's non-oil and gas exports during 2020 fell by 17.16%, where Kalimantan's non-oil exports East is dominated bymining products (coal). This proves that the pandemic has had a considerable impact on mining, especially coal mines.

Keywords: Covid-19, Mining Industry, Paser Regency

SEE-412
The Impact of Covid 19 on Street Vendors in the Scout Street Area of Samarinda City

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Abstract

Corona virus (Covid-19) is a new virus that spread in 2020, this virus is a new type of virus (SARS-CoV-2) whose disease is called Coronavirus disease 2019 (COVID-19). The rapid spread of this virus has resulted in social and economic problems that have occurred in almostall parts of the world, including Indonesia. In Indonesia, almost all areas are affected by socialand economic changes, such as on the Pramuka Samarinda road. This study aims to find out how the impact of Covid 19 on street vendors in the Scout Street area of Samarinda City. Thisstudy uses qualitative methods, while the data collection technique used is data collection by interviewing several sources who sell on Jalan Pramuka. The data analysis technique was descriptive statistical method which then the results of this interview were processed into datain the form of graphs and explanations. The results showed that the Covid-19 pandemic hadan impact on decreasing the turnover and income of street vendors in the Scout Street area by 50%.

Keywords: Covid-19, Street Vendors, Samarinda

SEE-417
Changes Detection of The Surface Coal Mining in Samarinda Using Time Series Landsat Imageries

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Abstract

Coal mining and reclamation are the main drivers for land use land cover (LULC) change in Samarinda City, East Kalimantan Province of Indonesia. Understanding LULC change has become a requirement in managing and restoring natural resources. Analysing spatio-temporal characteristics of LULC change is essential for understanding and assessing the ecological consequences of coal mining and other anthropogenic activities. In this study, we used a visual interpretation of the time series Landsat imageries in combination with existing land cover maps to create a set of annual maps and to analyze their changes for the Samarinda City from 1990 to 2020. The Landsat data used, were L1T standard data products which were radiometrically calibrated and orthorectified. Our results reveal the acceleration of LULC changes in Samarinda since 1990. The area of surface coal mining has increased from year to year, while the postcoal mining areas have not been restored and managed optimally. This study helps to quantify the post-coal mining area and will provide the supporting analysis for decision making in formulating the strategic environmental plans for managing and restoring the post-coal mining areas in Samarinda.

Keywords: Change Detection, Coal Mining, Landsat Imageries

SEE-418
Teacher Self-Efficacy for Professional Development during the COVID-19 Pandemic In East Kalimantan

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Abstract

Self-efficacy teacher affects the professional competence of teachers during the COVID-19 pandemic. Teachers are still required to be able to construct the knowledge, skills, and attitudes of students in online learning. This study aims to investigate the *self-efficacy* experience of junior high school teachers to remain professional during the COVID-19 Pandemic. The research method uses a qualitative type with a narrative approach which is carried out from August to September 2021. Data collection first conducts observations by taking initial data at the education office as many as 35 teachers but only 14 teachers are willing to be interviewed as respondents in primary data using a purposive approach. sampling. Then identify and then conduct online interviews, the data obtained are then grouped according to the needs of research data and given coding and then reduced, displaying data and drawing conclusions. The results showed that the experience of *self-efficacy* of junior high school teachers to remain professional during the COVID-19 pandemic was difficult. Failures occur when constructing the knowledge, skills, and attitudes of students, so some teachers decide to attend workshops to help online learning. Teachers, students, and parents are worried because they cannot do their best due to the very limited support for online learning facilities. Teachers are also challenged to master the technology so that online learning continues to be carried out with the support of workshop activities to increase competence and quality of learning. The conclusion that *the self-efficacy experienced* teachers to remain professional is still dubious and even causes stress, because teachers are increasingly busy and work hard to prepare and ensure that learning remains effective. The practical implication is that the results of future research can be tested by teachers in high school.

Keywords: COVID-19, professional competence, online learning, self-efficacy teacher.

SEE-425
Exploring Pre-service Science Teachers Trust in Science-Technology-Engineering-Mathematics (STEM) during the COVID-19 Pandemic

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Abstract

When cases of pandemic diseases are made public, unavoidable discussions arise about the public loss of trust in Science-Technology-Engineering-Mathematics (STEM). The discussionabout trust in STEM reaches far beyond the pandemic itself. It is fundamental for shaping the public understanding of science. Through their science classroom, pre-service science teacher plays an essential role to developed students trust to STEM. Therefore, it is valuable to exploring pre-service science teacher trust in STEM. Our research was carried out on a total of132 pre-service science teachers (23 male and 109 female) in a state university in Indonesia. Data was collected with the questionnaire called "Trust in Science and Scientist Inventory" which consists of 20 items. We analyzed the data by categorizing, tabulating, and conducting descriptive statistics to the data. Further analysis to explore the possible different levels of trustby gender was also estimated and confirmed by an independent t-test. From the result, the participants demonstrated a neutral level of trust in STEM. Comparisons by gender showed that male pre-service science teachers had slightly a more positive level than female pre-serviceteachers but the statistical result showed the difference is not significant. The results indicate the need to enhance knowledge of the latest issues in STEM for a pre-service science teacher to develop their trust. We argue that trust is related to the content knowledge about science. Therelation between trust and content knowledge in science is valuable to explore in future research.

Keywords: STEM, Trust, Pre-service Science Teacher

SEE-430
Exploring Science and Engineering Practices in Indonesian Physics Textbook about Heat and Temperature

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Abstract

During the distance learning, science lesson needs to adapt to the online class. This adaptation drives the need for student's independence of learning. It has been argued that students' understanding of science ideas and concepts is based on their engagement in science and engineering practices. However, research studying science and engineering practices engaging in the content of high school textbooks in Indonesia is particularly limited. The present study investigates the level at which science and engineering practices engage in the content of Indonesian high school Physics textbooks about heat and temperature. The analysis was carried out on a total of five books that are widely used in the school. Reports and activities were analyzed using content analysis through an assessment rubric called "Science and Engineering Practices Analytic Rubric" (SEPAR) by two ratters. The results analysis shows that the students could use science and engineering practices, but these school textbooks direct it. The books have not facilitated the opportunities to create and develop science and engineering practices at these points. The results mean that these school textbooks are at a low level because there is only one book at a high level. Therefore, there is a need to engage more clearly the science engineering practices in physics textbooks.

Keywords: Science and Engineering Practices, School Physics Textbooks, High School

SEE-437
Power Generation Potential Based on Wind Speed Varization in Wind Power Plant Prototypes

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Abstract

Future energy is a term for developing renewable energy (RE) potential as a solution or alternative to fulfill the needs of increasing energy consumption. Conventional energy production depends on dwindling fossil energy sources, its renewal takes hundreds of millionsof years, and its side effect can increase global warming. One renewable energy source that is environmentally friendly and available in nature with unlimited quantities is wind. Indonesia isan archipelago country with a tropical climate that can use wind energy as a wind power plant(PLTB), either on the coast or hills. A wind power plant (PLTB) is a generator that converts wind energy into electrical energy by using turbines as movers and generators as power generators. This paper aims to determine the wind energy potential for electricity generation based on wind variations. Data collection in this study uses a small-scale PLTB prototype builtby design and then measured using a multimeter and anemometer. The wind turbines used for generating electricity are four blades with length of 45 cm and breadth of 7 cm. The tool used as a generator is a DC motor with a capacity of 12 volts. Based on the field testing results, it found that when the highest wind speed of 3,5 m/s, the DC motor produced a current of 0,011004 Amperes and a voltage of 0,426563 Volts and at the lowest wind speed of 1,9 m/s, the DC motor produced a current of 0,005961 Amperes and a voltage of 0,231563 Volts. It canbe concluded that the wind speed, type, and size of the blades and the specification of the generator greatly influence electric power generation.

Keywords: Wind, Renewable Energy, PLTB, Wind Turbine.

SEE-454
The Urgency of Tropical Studies Based Social Entrepreneurship in the Covid 19 Period

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Abstract

The Covid-19 pandemic has not only caused a health crisis, but has also affected Indonesia's micro and macro economy. The impact of the Covid-19 pandemic has not only suppressed themanufacturing sector, but also the UMKM sector since April 2020. Around 1.5 millionemployees have been laid off (1.2 million workers are from the formal sector, 265,000 from theinformal sector). The business sector that experienced a decline was in the field of agriculture, forestry, and fisheries, which experienced a decline of 3.88%, and the processing industry experienced a decline of 10.97%. In this crisis condition, attention is needed from the government to revive the community's economy by carrying out various social-based economicempowerment programs, especially in tropical forest areas. The tropical rain forest area is an area that has a very important role for life on earth. The diversity of natural and human resourcesin it is a potential that can be utilized for human survival and the environment. Various environmental and social problems arise due to economic exploitation in tropical rain forest areas causing economic inequality for the surrounding community. People who originally depended on the environment as a source of livelihood lost their livelihoods due to exploitation.Social entrepreneurship is a social action that is integrated in economic activities that producesoutcomes in the form of increasing community welfare, eradicating poverty and increasing survival skills of a community. The Covid-19 pandemic which lasted for approximately 2 yearscaused various economic and social impacts, one of which was the decline in people's economicincome. The purpose of this study is to describe the importance of tropical studies-based socialentrepreneurship in the Covid-19 period. This research method is a literature review that comes from various journals and relevant research results from various institutions that carry out socialentrepreneurship activities. The results of the study concluded that social entrepreneurship is important and needs to be developed to improve people's living standards, be able to eradicate poverty and unemployment through a series of activities that increase skills in community members or society. The development of social entrepreneurship needs to be in synergy with the university curriculum so that it can provide opportunities for students to carry out various social entrepreneurship innovations that are beneficial to society.

Keywords: Social entrepreneurship, Tropical studies, Covid 19

SEE-462
Association Analysis of the Number of Dengue Hemorraghic Fever Cases in East Kalimantan with the Factors of Geographic, Demographic and Health Using Spearman Rank Correlation

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Abstract

Dengue Hemorrhagic Fever (DHF) is a mosquito-borne infection caused by the dengue virus, primarily found in the tropics and sub-tropics. The Indonesian country is a tropical climate. During the last three years (2017-2019), there has been an increase in the number of cases of dengue hemorrhagic fever in East Kalimantan Province, Indonesia. The purpose of this study is to determine the corresponding factors with the number of DHF cases in East Kalimantan Province, Indonesia, in 2019 by using the Spearman rank correlation method. The result shows that the factors that significantly associated the number of DHF cases in East Kalimantan were the demographic and health factors.

Keywords: DHF, Association Analysis, Spearman Rank Correlation

SEE-469
Added Value Analysis of Eleutherine americana M. Herbal Tea

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Abstract

The tropics are rich in natural resources, both from flora and fauna. *Eleutherine americana* M.is one of them. Local people in Borneo use this onion as a medicine for various diseases. Roleagroindustry, in an effort to maintain primary products into processed products to increase the added value is very necessary. The added value of a product very important to increase the selling price. Including processing *Eleutherine americana* M. into herbal tea. The aim of this research was to analiyzed the added value of *Eleutherine americana* M. processing . into herbalteas. Data were collected through in-depth interviews with herbal tea processing business owners. The results showed that the added value obtained was IDR156,017.56/kg, value addedratio 75.15%, the profit earned is IDR140,405.72/kg with a profit rate of 89.99%.The conclusion of this research is the processing of *Eleutherine americana* M. into herbal teas are able to provide added value to *Eleutherine americana* M.

Keywords: Added value, Eleutherine americana M., herbal tea.

SEE-479
The Effectiveness of Online Learning Platform on the Mathematics Scores of Junior High School Students in Samarinda in COVID-19 Pandemic

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Abstract

Quality education is one of the 17 goals of the 4 pillars of the Sustainable Development Goals(SDGs). The challenge to achieve quality education during the COVID-19 pandemic is online learning because there is no direct interaction between students and teachers in the classroom. There are online learning platforms that are commonly used, namely online classes (Google Classroom, E-Learning, etc.), social media (Facebook, WhatsApp, etc.), and video conferencing (Zoom Meeting, Google Meet, Microsoft Team, WhatsApp video call, etc.). Oneindicator of the success of education in junior high school can be seen from the score of the report card which shows the extent to which the level of student mastery of the learning material. Mathematics is a subject that is considered difficult by many students, in a conditionCOVID-19 pandemic moreover there is no in-class learning. The purpose of this study was to determine the effectiveness of online learning platforms on the mathematics scores of junior high school students in Samarinda during the COVID-19 pandemic. The data used in this studyis primary data using google form obtained from 160 junior high school students in SamarindaCity East Kalimantan Province. The data were analyzed using multiple dummy variables regression. The results showed that all respondents received mathematics learning from online classes (Google Classroom and E-Learning) and social platforms (WhatsApp). There are 91%of students who get mathematics learning from video conferencing (Zoom, Google Meet, Microsoft Team, WhatsApp video call, etc.) and 9% others. There are 57% of students who canunderstand mathematics learning simply by using one online learning platforms and 43% can understand mathematics learning if more than one online learning platforms. Video conferencing is the most effective online learning platforms used in learning mathematics. Students who take mathematics lessons from video conferencing have a higher score of 3,028 points than those who do not use video conferencing.

Keywords: Dummy Variable Regression, Online Learning Media, Video Conferencing.

SEE-481
The Abundance of marine Sponges in the Miang Besar Island, East Kutai

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Abstract

Porifera (Sponge) is one of the primitive animals that reside sedentarily and non-selective filterfeeder, which found abundance in tropical and subtropical. Sponges also have an ecologically vital role in coral reef ecosystems such as nutrient cycling, bioerosion, and bioindicators. In addition, sponges also serve as microhabitats that are strongly supported the biodiversity of coral reef ecosystems. The study aims to explore the Sponge abundance in Miang Besar Island,East Kutai. The research was done in December 2020 at four stations using the belt transect method. The results found 13 genera of Sponge which the whole of genera are belonging to Demospongiae. The abundance of the Sponge is *Stylotella* (43.59%), *Ptilocaulis* (10,26%), *Aplysina* and *Spirastrella* (8,55%), *Haliclona* (6,84%), *Rhabdastrella* dan *Hyrtios* (5,13%), *Gelliodes* (4,27%), *Niphates* (3,42%), *Agelas* (2,56%), and *Callyspongia* (1,71%),respectively. Moreover, the frequency of *Stylotella*, *Haliclona*, and *Ptilocaulis* genus is more than 50% while other genera are less than 25%.

Keywords: Sponge, Sponge abundance, Miang Besar Island.

SEE-491
Work readiness during COVID-19 among taxibike online drivers in Samarinda, Indonesia

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Abstract

COVID-19 caused a pandemic around the world, including in Indonesia. This greatly affected the informal business sector, such as online taxibike drivers. The success of this program to control the spread of COVID-19 is greatly influenced by knowledge, attitudes, and actions in the community. The purpose of this study was to identify behavioral factors during the pandemic. An online survey was conducted with 100 online taxibike drivers using a structured questionnaire and Google Forms. Data were analyzed using the Spearman rank test with CI of 95%. Although most online taxibike drivers have sufficient knowledge about COVID-19, some drivers had important misconceptions about COVID-19, namely that COVID-19 is not contagious, weak immune resistance may cause them to contract COVID-19, and it is highly unlikely that they will contract COVID-19 when leaving the house without wearing a mask, and believing that handwashing with soap and using hand sanitizer will not prevent COVID-19. To address these misconceptions, interventions should be targeted to online taxibike drivers to increase their health education and literacy regarding the urgency of preventing COVID-19. It is also important to consider incorporating both interpersonal approaches and conventional and digital-based groups when encouraging changes in their attitudes and practices towards COVID-19.

Keywords: COVID-19, Knowledge, Attitudes, Risk perception, Taxibike online

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