



# PROGRAM BOOK

## ISST 2023

The 3rd International Seminar of  
Science and Technology 2023  
**Trends in Science and Technology  
for Sustainable Living**

Organized by the Faculty of Science and Technology,  
Universitas Terbuka



## ISST CHAIRMAN REMARKS

### The 3<sup>rd</sup> International Seminar of Science and Technology “Trends in Science and Technology for Sustainable Living”



Assalamu’alaikum Wr.Wb.

Good morning. Welcome to the 3rd International Seminar on Science and Technology, or ISST.

Our Honorable Keynote Speaker:

1. **Dr. H. Sandiaga Salahuddin Uno, B.B.A., M.B.A.** (Minister of Tourism and Creative Economy, Indonesia)
2. **Prof. Dr. Arif Satria, S.P., M.Si.** (Rector of IPB University, Indonesia)

Our Honorable Plenary Speakers:

- **Prof. Panuwat Suppakul**  
Professor of Packaging and Materials Technology, Kasetsart University, Thailand.
- **Prof. Deden Rukmana**  
Professor and the chairperson of the Department of Community and Regional Planning at Alabama Agriculture & Mechanical University, USA.
- **Prof. Mag. Dr. rer. nat Erika Hausenblas**  
Professor Partial Differential Equation at the Montan Universität Leoben, Austria.
- **Robert Smith**  
Director of Higher Education & eResearch Microsoft APAC, Singapore.
- **Dr. Vita Elysia, S.T., M.Sc.**  
Lecturer of the Urban and Regional Planning Study Program, Faculty of Science and Technology, Universitas Terbuka, Indonesia.

Our Honorable:

- **Prof. Ojat Darajat, M.Bus., Ph.D., Rector of Universitas Terbuka**
- **All Vice Rectors in Universitas Terbuka**
- **Dean of the Faculty of Science and Technology and All of Heads of Units in Universitas Terbuka**
- **All of my Dearest Colleagues in Universitas Terbuka: Professors and Lecturers**

And to all Presenters and Participants of ISST 2023, and to all students of Universitas Terbuka.

As the chairman of today’s seminar, which is organized by the Faculty of Science and Technology, Universitas Terbuka, I would like to welcome all guests and participants of the seminar. This is the third international seminar organized by our faculty, with the theme “**Trends**

in Science and Technology for Sustainable Living". Our seminar is held through two methods: on-site at Universitas Terbuka Convention Centre; and online via Zoom or Universitas Terbuka Youtube Channel, so in this opportunity, I also would like to greet all participant online. We are very grateful with the full support given by Universitas Terbuka, especially by the Rector, all partners involved in this seminar, sponsorship, and our committee member. On behalf of the committee, I would like to express my deepest gratitude.

To support this global movement, we, as the committee of the 3rd International Seminar of Science and Technology 2023, propose a theme of "Trends in Science and Technology for Sustainable Living". We classified the theme into three sub-topics:

1. Trends in Mathematics and Computer Science for Sustainable Living
2. Sustainable Living through Functional and Eco-friendly Agricultural Trends
3. Collaborative Contribution to Sustainable Environment

#### **Distinguished colleagues and guests,**

In today's seminar, we will have a very insightful discussions with all our keynote and plenary speakers, experts from Minister of Tourism and Creative Economy Indonesia, IPB University, Kasetsart University, Alabama Agricultural and Mechanical University, Montan Universität Leoben, Microsoft APAC, and Universitas Terbuka. More than 200 participants have registered and joined this seminar. Moreover, in the afternoon, we will have parallel session, with 108 presenters, of which 35 will present their scientific article on-site and 73 online, respectively. Submitted and reviewed articles will be published in the Proceeding of the International Seminar of Science and Technology, 2023; and selected articles will be published in Scopus indexed proceeding.

To achieve a more thorough discussion of our international seminar today, our lecturers in the Faculty of Science and Technology, Universitas Terbuka, have also written a Book of FST in accordance with the theme and sub-topics of ISST 2023. The Book of FST contains many ideas, presented as original research publication or literature review, with look the total 20 articles. Our Book of FST involve 47 authors from Universitas Terbuka and 8 authors from other institutions. This Book of FST will be launched in the beginning of our seminar today, and we hope that our publication will give many new scientific insights related to Trends in Science and Technology for Sustainable Living.

#### **To all our guests,**

We look forward for a fruitful scientific discussion with all our speakers, presenters, and participants. In this opportunity I'd also like to thank to all the committee and partners of today's seminar, especially our sponsorship (H3C PT Huasan Teknologi Indonesia, PLN Icon Plus, HSP, EPSON, Bank Mandiri, Bank BRI, Bank BTN, Bank BNI) for all the hardwork and dedicated to this event until today.

Have a great time and we wish all of us in the best of health!

Thank you,  
Wassalamu'alaikum WrWb.

Tangerang Selatan, 19 Oktober 2023

Chairman of ISST 2023,  
Dr. Ernik Yuliana, S.Pi., M.T.

## DEAN OF FACULTY OF SCIENCE AND TECHNOLOGY REMARKS

The 3<sup>rd</sup> International Seminar of Science and Technology “Trends in Science and Technology for Sustainable Living”



Assalamu’alaikum Wr.Wb.

A very good morning, it is my absolute pleasure to welcome you all to the 3<sup>rd</sup> International Seminar of Science and Technology, organized by the Faculty of Science and Technology Universitas Terbuka.

Our Honorable Keynote Speaker:

1. **Dr. H. Sandiaga Salahuddin Uno, B.B.A., M.B.A.** (Minister of Tourism and Creative Economy, Indonesia)
2. **Prof. Dr. Arif Satria, S.P., M.Si.** (Rector of IPB University, Indonesia.)

Our Esteemed Plenary Speakers:

- **Prof. Panuwat Suppakul**  
Professor of Packaging and Materials Technology, Kasetsart University, Thailand
- **Prof. Deden Rukmana**  
Professor of Urban and Regional Planning, Alabama Agriculture & Mechanical University, USA.
- **Prof. Mag. Dr. rer. nat Erika Hausenblas**  
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- **Robert Smith**  
Director of Higher Education & eResearch Microsoft APAC, Singapore.
- **Dr. Vita Elysia, S.T., M.Sc.**  
Lecturer of the Urban and Regional Planning Study Program, Faculty of Science and Technology, Universitas Terbuka, Indonesia

Our Honorable:

- **Prof. Ojat Darajat, M.Bus., Ph.D.,** Rector of Universitas Terbuka
- **All Vice-Rectors, Deans, Director of Post Graduate School, Head of Research and Community Services Institute, and all Heads of Units** in Universitas Terbuka
- **Felloe Deans of partners Universities**
- **All sponsors representatif**
- **All of my Dearest Colleagues** in Universitas Terbuka: Professors and Lecturers

- **Presenters and participants of ISST 2023**, and to all students of Universitas Terbuka

On this very special day, please allow me to express my sincere gratitude to the Keynote Speakers, Plenary Speakers, Presenters, and Participants who have contributed greatly to our seminar. Today, we gather here to discuss a topic of immense significance in our rapidly evolving world: "Trends in Science and Technology for Sustainable Living."

As we continue to witness rapid advancements in various fields, the importance of sustainability has become more crucial than ever. Our planet calls for innovative solutions that promote harmony between humans and nature. Through the three themes have been chosen, we will explore how they can contribute to a sustainable future, through advancements in data analysis, modelling, and simulations. We will also explore how functional and eco-friendly agricultural trends can pave the way towards efficient food and greener food production. Lastly, we will discuss the imperative need for collaboration across different sectors and disciplines to address the challenges of sustainable development.

This seminar provides a unique opportunity for researchers, professionals, and enthusiasts from across the globe to engage in meaningful discussions, exchange knowledge, and foster collaborations. It is through events like these that we can collectively work towards creating a better, more sustainable world for future generations.

I wish all the Speakers, Presenters, and Participants have a pleasant time at our seminar. I would also like to thank the committee and sponsor for their support, and I am confident that our contribution today will be beneficial for a more sustainable life.

Thank you,  
Wassalamu'alaikum WrWb.  
Tangerang Selatan, 19 Oktober 2023

Dean of the Faculty of Science and Technology  
Dr. Subekti Nurmawati, M.Si.



## RECTOR REMARKS

### The 3<sup>rd</sup> International Seminar of Science and Technology "Trends in Science and Technology for Sustainable Living"



Bismillahirrahmanirahim  
*Assalamu'alaikum wa rahmatullahi wa barakatuh,*  
*Om Swastiastu*  
*Namo Budhaya*  
*Salam kebajikan*

Honourable Keynote Speaker:

1. **Dr. H. Sandiaga Salahuddin Uno, B.B.A., M.B.A.** (Minister of Tourism and Creative Economy, Indonesia)
2. **Prof. Dr. Arif Satria, S.P., M.Si.** (Rector of IPB University, Indonesia)

Honorable Plenary Speakers:

- **Prof. Panuwat Suppakul**  
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- **Prof. Mag. Dr. rer. nat Erika Hausenblas**  
Professor Partial Differential Equation at the Montan Universität Leoben, Austria
- **Robert Smith**  
Director of Higher Education & eResearch Microsoft APAC, Singapore.
- **Dr. Vita Elysia, S.T., M.Sc.**  
Lecturer of the Urban and Regional Planning Study Program, Faculty of Science and Technology, Universitas Terbuka, Indonesia

Respected Colleagues,

- **Prof. Ainun Na'im, M.B.A., Ph.D.**, Chairman of the Board of Trustees Universitas Terbuka
- **Prof. Dr. Chanif Nurcholis M.Si.**, Academic Senate Chairman of Universitas Terbuka
- **Vice Rector and all Head of Unit** in Universitas Terbuka
- **Dr. Subekti Nurmawati M.Si**, Dean of the Faculty of Science and Technology
- **Dr. Ernik Yuliana, S.Pi., M.T.**, Chairman of this Seminar

- All professors and lecturers in Universitas Terbuka
- And to all presenters and participants of this seminar

Good morning and a warm welcome to the third (3<sup>rd</sup>) **International Seminar of Science and Technology** (ISST) 2023, organized by Faculty of Science and Technology, Universitas Terbuka. It is an honour for me, as the Rector of Universitas Terbuka, to address this scientific gathering of scientists, lecturers, practitioners, and also students.

This international seminar is our annual event, being held as part of **Universitas Terbuka Anniversary or Dies Natalis**, which is celebrated on the 4th of September every year. In our 39<sup>th</sup> anniversary this year, our DIES NATALIS main theme is entitled: **Novel Innovation in University Management and Work Culture for the Advancement of Indonesia** ("*Tatanan dan Budaya Kerja Baru Wujudkan Indonesia Maju*"). To strengthen this subject, today's international seminar is held with the topic: **"Trends in Science and Technology for Sustainable Living"**

**Distinguished Colleagues and Guests,**

Universities and higher education institutions have a very important role in advancing science and technology for sustainable living in several ways: in **Research and Innovation**, **Education and Training**, and **Community Engagement**. These three aspects are known in Indonesia as *Tri-Dharma* or *Three Dharma*, which are obliged to be performed by all university lecturers and professors in Indonesia. Moreover, other features such as **Interdisciplinary Collaboration**, **Technology Transfer**, **Policy Development**, and **Lifelong Learning** also have a major role in prospering novel scientific and technological findings for human's sustainable living.

Now, I want to emphasize the **Concept of Lifelong Learning**. Universitas Terbuka **has been a pioneer** as an **Open and Distance Learning Higher Education Institution**. Since our establishment in 1984, our vision is to provide higher education learning services open to all Indonesians around the world. Therefore, we are also **at the forefront of implementing the concept of Lifelong Learning for our citizen**, because any Indonesian citizen can become a student of Universitas Terbuka, without any restrictions of entrance selection tests, age, residence, and time of study.

**Ladies and Gentlemen,**

Sustainable living means adopting lifestyle choices and practices that can minimize negative impacts on the environment and society, ensuring a harmonious coexistence with nature and future generations. As we gather here today, we can explore and collaborate on the central theme of **"Trends in Science and Technology for Sustainable Living"**. Our world is at an important time where the intersection of science, technology,



and sustainability is not just a choice but a necessity. Through today's scientific forum, we also hope that we can provide innovative solutions to many challenges we may face in implementing sustainable living.

### Distinguished Colleagues and Guests,

Those are the messages that I want to convey. I pray that all of us are blessed with good health. My gratitude extends to the Faculty of Science and Technology and the ISST committee for their diligent efforts in coordinating this event. To all the invited keynote and plenary speakers, guests, presenters, and participants, I believe this seminar will provide an opportunity for exchanging and developing new ideas.

We wish all of us a very pleasant and wonderful seminar.

Thank you,

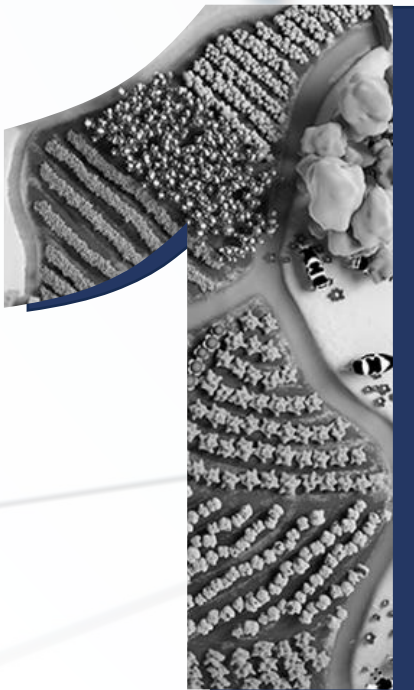
Wassalamu'alaikum Wr.Wb.

Tangerang Selatan, 19<sup>th</sup> of October 2023

Rector of Universitas Terbuka,  
Prof. Ojat Darajat, M.Bus. Ph.D

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# THE 3rd INTERNATIONAL SEMINAR OF SCIENCE AND TECHNOLOGY RUNDOWN



## SEMINAR RUNDOWN

Thursday, 19<sup>th</sup> October 2023  
 08.00 am to 05.00 pm (GMT+7)  
 On-Site UTCC UT and Online Zoom

No	Details	Time (UTC+7; WIB)
1	<p>Registration for Online Presenters and Participants:            Zoom : <a href="https://sl.ut.ac.id/ISST2023">https://sl.ut.ac.id/ISST2023</a>            Youtube : <a href="https://sl.ut.ac.id/ISST2023-UTTV">https://sl.ut.ac.id/ISST2023-UTTV</a></p> <p>Registration for On-Site Presenters and Participants:            Universitas Terbuka Convention Centre (UTCC)            Jl. Pondok Cabe Raya, Kecamatan Pamulang, Tangerang Selatan            (<a href="https://sl.ut.ac.id/UTCC-maps">https://sl.ut.ac.id/UTCC-maps</a>)</p>	07.45 – 08.30
<b>Opening Ceremony</b>		
2	MC opens the event Indonesia Anthem	08.30 – 08.40
3	Opening prayer	08.40 – 08.45
4	Traditional Art Dance Performance	08.45 – 08.55
<b>Welcome Speech</b>		
5	Welcome Speech by <b>Conference Chair</b> Dr. Ernik Yuliana, S.Pi., M.T.	08.55 – 09.00
6	Welcome Speech by <b>Dean of the Faculty of Science and Technology, Universitas Terbuka</b> Dr. Subekti Nurmawati, M.Si.	09.00 – 09.05
7	Welcome Speech by <b>Rector of Universitas Terbuka</b> Prof. Ojat Darajat, M.Bus., Ph.D.	09.05 – 09.10
<b>Keynote Speech</b>		
8	<b>Keynote Speaker 1:</b> Dr. H. Sandiaga Salahuddin Uno, B.B.A., M.B.A Minister of Tourism and Creative Economy of Indonesia	09.10 – 09.30
9	<b>Keynote Speaker 2:</b> Prof. Dr. Arif Satria, SP, M.Si. Rector of IPB University	09.30 – 09.50
10	Faculty of Science and Technology's <b>Book Launching</b>	09.50 – 10.00
<b>Plenary Session 1</b>		

No	Details	Time (UTC+7; WIB)
11	<b>Prof. Panuwat Suppakul</b> Professor in Packaging and Materials Technology Department, Faculty of Agro-Industry, Kasetsart University, Thailand	10.00 – 10.20
12	<b>Prof. Deden Rukmana</b> Professor and the chairperson of the Department of Community and Regional Planning at Alabama A&M University	10.20 – 10.40
13	<b>Robert Smith</b> Director of Higher Education & eResearch Microsoft APAC	10.40 – 11.00
14	<b>Plenary Discussion Session 1</b>	11.00 – 11.20
<b>Plenary Session 2</b>		
15	<b>Dr. Vita Elysia, S.T., M.Sc.</b> Lecturer of the Urban and Regional Planning Study Program, Faculty of Science and Technology, Universitas Terbuka	11.25 – 11.45
16	<b>Prof. Mag. Dr. rer. nat Erika Hausenblas</b> Professor Partial Differential Equation at the Montan Universität Leoben	11.45 – 12.05
17	<b>Plenary Discussion Session 2</b>	12.05 – 12.25
18	Closing of Plenary Session	12.25 – 12.30
<b>BREAK</b>		12.30 – 13.30
19	<b>Parallel Session</b> Participants of this session will present their submitted research paper. Each presenter will deliver his/her talk for 15 minutes.	13.30 – 16.15
20	<b>Closing ceremony</b> Announcement of the Best Paper of ISST 2023	16.15 – 16.30



## KEYNOTE SPEAKERS





## KEYNOTE SPEAKER



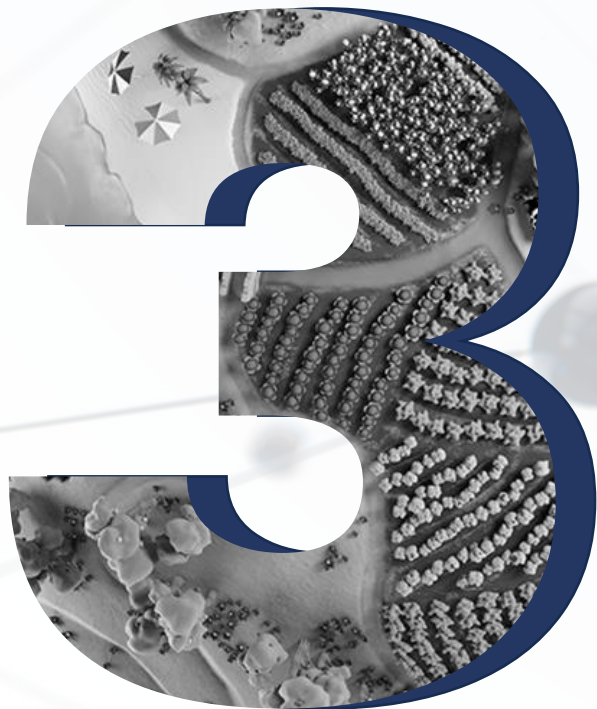
**Dr. H. Sandiaga Salahuddin Uno, B.B.A., M.B.A**  
Ministry of Tourism and Creative Economy

Sandiaga Salahuddin Uno, also known as Sandiaga Uno, was appointed by President Joko Widodo as Minister of Tourism and Creative Economy/Head of the Tourism and Creative Economy Agency on December 23, 2020. Sandiaga Uno holds a Bachelor of Business Administration degree from The Wichita State University, United States, and graduated with Summa Cum Laude honors. Furthermore, he obtained a Master of Business Administration degree from The George Washington University, United States. Sandiaga Uno is known as a prominent entrepreneur with various experiences serving as a director in several companies in different sectors, including: Summa Group, Seapower Asia Investment Limited, MP Holding Limited Group NTI Resources Limited, PT Recapital, PT Saratoga Investama Sedaya.



**Prof. Dr. Arif Satria, SP, M.Si.**  
Rector of IPB University

Dr Arif Satria is the Rector of Institute Pertanian Bogor (IPB), or IPB University. He is a lecturer of FEMA IPB since 2010, after previously serving as a lecturer in the Department of Fisheries Social Economics. He also is an adviser to the Minister of Marine Affairs and Fisheries in 2012. Dr. Arif has been actively involved in drafting of marine and fishery policies since 2002, including the Fisheries Law 31/2004, the Revision of the Law on the Management of Coastal Areas and Small Islands, the Preparation of the Blue Economic Concept as well as a number of Government and Ministerial Regulations.



## PLENARY SPEAKERS



## PLENARY SPEAKERS



### Prof. Panuwat Suppakul

Packaging and Materials Technology Department, Faculty of Agro-Industry, Kasetsart University

Prof. Panuwat Suppakul is a renowned Thai educator and researcher who specializes in packaging technology. He currently works at the Packaging and Materials Technology Department in the Faculty of Agro-Industry at Kasetsart University. Prof. Suppakul's achievements demonstrate his commitment to advancing the industry and finding breakthroughs in packaging technology. He holds a Ph.D. in Packaging Technology from Victoria University in Australia and also obtained a M.Sc.Tech in Engineering Materials from The University of New South Wales, Australia



### Prof. Deden Rukmana

Department of Community and Regional Planning at Alabama A&M University

Prof. Deden Rukmana is a highly accomplished academic and expert in the field of urban planning. Currently serving as the Professor and Chairperson of the Department of Community and Regional Planning at the College of Agricultural, Life and Natural Sciences in Alabama A&M University. His research interests revolve around various aspects of urban planning, including neighborhood planning, international planning, homelessness, and megacities. With a Ph.D. in Urban and Regional Planning from Florida State University, a Master of Planning and Development Studies from the University of Southern California, and a B.S. in Urban and Regional Planning from the Bandung Institute of Technology in Indonesia, Prof. Rukmana's educational background is extensive and diverse.



### Robert Smith

Director of Higher Education & eResearch Microsoft APAC

A technology & Education industry leader with over 20 years' experience in the Asia and Pacific region, including 9 years based in Singapore working in both emerging and mature markets at Microsoft as well as 12+ years in Australia. As Director for Higher Education & eResearch for Asia Pacific at Microsoft, he works with leaders across the sector to accelerate institutional transformation across Academics, Research and Operations for Universities, Research Institutions, Government and affiliated organizations.



### **Dr. Vita Elysia, S.T., M.Sc.**

Urban and Regional Planning Study Program, Faculty Science and Technology, Universitas Terbuka

Vita Elysia holds a position as a lecturer in the Department of Urban and Regional Planning within the Faculty of Science and Technology at Universitas Terbuka in Indonesia. Her research primarily focuses on the urban political ecology of sanitation in Indonesia. Her specific areas of interest revolve around the examination of water and sanitation policies in developing countries, and how various factors, such as the pro-poor approach, gender mainstreaming, and equitable access, influence water and sanitation policy and management. She obtained her Bachelor of Urban and Regional Planning from Universitas Gadjah Mada (UGM) in Indonesia, a master's degree in urban management and development from IHS Erasmus Universiteit Rotterdam (EUR) in The Netherlands, and a Ph.D. from the Australian National University (ANU) in Australia, specializing in Resources, Environment, and Development.



### **Prof. Mag. Dr. rer. nat Erika Hausenblas**

Professor Partial Differential Equation at the Montan Universität Leoben

Erika Hausenblas (Univ.-Prof. Dr. rer. nat. Mag. rer. nat.) studied mathematics at the University of Salzburg. After completing her studies in 1990, she was employed as a research assistant at the Research Institute of Software Technology (RIST) at the University of Salzburg. She pursued doctoral studies and was awarded the Christian Doppler Prize in 2000. In 2003, she completed her habilitation in mathematics. Since 2010, she has been at the Montanuniversität Leoben, where she currently serves as the Chair of Applied Mathematics. Additionally, she has been a long-time guest lecturer at the TU Graz. Her main field of activity is stochastic partial differential equations.



# ON-SITE PARALLEL SESSION PRESENTATION SCHEDULE



## Room A

Subtheme : Agribusiness (Sustainability Living, Management of Natural Resources and Environment, Agricultural Supply Chain, Functional Food for Health and Sustainability)

Moderator : Ir. Endang Indrawati, M.A.

Room Manager : Siti Umamah Naili Muna, M.Si.

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	20101	Susi Riswani Banjarnahor	Universitas Terbuka	The Effect of Brand Positioning and Product Differentiation On Consumer Loyalty of Indomie Instant Noodle
2	13.45 - 14.00	20102	Reynaldy Pakpahan	Universitas Terbuka	The Effect Of Marketing Mix On The Purchase Decision Of Wall's Cornetto Ice Cream
3	14.00 - 14.15	20103	Rina Astarika	Universitas Terbuka	Analysis of Productivity Smallholder Cashew Farming in Commodity Areas Base in North Buton Regency, Southeast Sulawesi
4	14.15 - 14.30	20602	Endang Indrawati	Universitas Terbuka	Prospects of Gedi plant ( <i>Abelmoschus manihot</i> L.) as a Functional Food and Herbal Medicine
5	14.30 - 14.45	20104	Idha Farida	Universitas Terbuka	THE ROLE OF THE AGRICULTURAL EXTENSION CENTER FOR THE STRATEGIC COMMAND FOR AGRICULTURAL DEVELOPMENT
6	14.45 - 15.00	20615	Agung Supriatna	Universitas Terbuka	The effect of processing temperature variation on the vitamin C content of lime ( <i>Citrus aurantifolia</i> ) drink using High Performance Liquid Chromatography (HPLC)
7	15.00 – 15.15	10709	Bakti Viyata Sundawa	Politeknik Negeri Medan	Development of Environmental Detector System (EDS) Application Through Industrial and Vocational Collaboration



## Room B

Subtheme : Agribusiness (Entrepreneurship in Agriculture, Fisheries Sustainability, Entrepreneurship in Agriculture)

Moderator : Dr. Albert Gamot Malau, S.Si., M.Si.

Room Manager : Faizal Maulana

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	20401	Kusmiati	Universitas terbuka	Analysis Of The Feasibility Of Freshwater Ornamental Shrimp Farming Of The Neocaridina Type In Gunung Mulya Village, Tenjolaya Sub- Distric Regency
2	13.45 - 14.00	20501	Jalil Jalil	Universitas Terbuka	Population Dynamics of Indian Makerel ( <i>Rastralliger kanagurta</i> ) in Northern Bone Bay Waters, Indonesia
3	14.00 - 14.15	20502	Jalil Jalil	Universitas Terbuka	Size Composition, Growth Pattern and Condition Factor of <i>Thunnus Albacares</i> in Bone Bay Waters, Indonesia
4	14.15 - 14.30	20503	Albert Gamot Malau	Universitas Terbuka	The Impact of Government Policy on Production, Labor, Poverty and Income of the Fisheries Sub-sector in North Sumatra Province
5	14.30 - 14.45	20407	Andi Suci Anita	Universitas Terbuka	Analysis of Potential and Strategy for Agribusiness Development
6	14.45 - 15.00	20206	Tengku Eduard Azwar Sinar	Universitas Terbuka	Potential of Suji ( <i>Dracaena Angustifolia</i> ) Leaves in Producing Functional Quail Eggs

## Room C

Subtheme : Biology (Biodiversity, Sustainability Living)

Moderator : Diki, S.Si., M.Ed., Ph.D.

Room Manager : Sri Utami, S.ST., M.Kes.

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	30101	Eko Efendi	Universitas Lampung	Derivated Fungi of Sponge from Lampung Coastal as Antibacterial Activity Against Multi Drug Resistance Bacteria
2	13.45 - 14.00	30108	Whika Febria Dewatisari	Universitas Terbuka (academics)	Traditional Activity and Pharmacological of <i>Dracaena liberica</i> (Gérôme & Labroy) Byng & Christenh. : A review
3	14.00 - 14.15	30109	Arun Kumar Namdeo	Barkatullah University, Bhopal	Plankton Diversity and Limnological assessment of a Tropical Reservoir
4	14.15 - 14.30	30110	Budi Prasetyo	Universitas Terbuka	Tree Kangorous ( <i>Dendrolagus</i> sp.) of Papua: Charasteristics and Conservation
5	14.30 - 14.45	30112	Angelia Lailatul Jannah	Universitas Terbuka	Survey of HPV genotypes using PCR-hybridization in Jakarta
6	14.45 - 15.00	30111	Hurip	Universitas Terbuka	Invertebrate diversity in gastrointestinal <i>Fejervarya cancrivora</i> rice fields Ciomas, Bogor Regency

## Room D

Subtheme : Urban and Regional Planning (Environmental Modeling, Sustainability Living, Environmental Geography)

Moderator : Erika Pradana Putri, S.T., M.Sc.

Room Manager : Guntur Bagus Pamungkas, S.T., M.P.W.K.

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	30301	Guntur Bagus Pamungkas	Universitas Terbuka (academics)	The Spatio-Temporal of NO <sub>2</sub> Density Weighting in The Region of Malang, East Java Province, Indonesia
2	13.45 - 14.00	30303	Amanda Christin Dompeipen	IPB University	Oceanographic Study in the Northern Banda Sea
3	14.00 - 14.15	30203	Mawar Putri Wardiana,	Sekolah Tinggi Meteorologi Klimatologi dan Geofisika (STMKG)	Double-difference earthquake relocation, the source mechanism analysis using moment tensor inversion, and the correlation of Vp/Vs variation in Central Sulawesi using BMKG waveform data
4	14.15 - 14.30	30503	Muhammad Najib Syamii Muqtadir	Sekolah Tinggi Meteorologi Klimatologi dan Geofisika (STMKG)	Seismic Hazard Identification around Surabaya City, East Java Indonesia: A Preliminary Result Based on the June 2023 Mojokerto Earthquake

## Room E

Subtheme : Food Technology (Animal Science, Functional Food for Health and Sustainability, Sustainability Living)

Moderator : Adhi Susilo, S.Pt., M.Biotech.St., Ph.D.

Room Manager : Mutiara Ulfah, S.T.P., M.Sc.

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	20201	Adhi Susilo	Universitas Terbuka	A Comprehensive Review of Beef Jerky Products and the Associated Effects and Changes
2	13.45 - 14.00	20601	Mutiara Ulfah	Universitas Terbuka	Microbial Safety Evaluation of Commercial Indonesian Traditional Fermented Shrimp Paste (Terasi) from West Java
3	14.00 - 14.15	20603	Riska Nurul Fauziah	Universitas Terbuka	The Potential of Endog Lewo as a Snack to Aid Weight Loss
4	14.15 - 14.30	20612	FAUZIAH RESTIYANI	Universitas Terbuka	Development of ready-to-serve breadfruit cream soup for the elderly
5	14.30 – 14.45	20613	Naufal Permata Anugrah	Universitas Terbuka	Effects of Suji Leaf Flour Addition on Physical Characteristics of Free Gluten Cookies
6	14.45 – 15.00	20614	Lula Nadia	Universitas Terbuka	POTENTIAL OF SACHA INCHI NUT OIL ( <i>Plukenetia volubilis</i> L.) AS A HIGH NUTRITIONAL FOOD INGREDIENT

## Room F

Subtheme : Mathematics/Information system (Applied Mathematics and Statistics, Computer Science, Data Science, Machine Learning and Artificial Intelligence)

Moderator : Dian Nursantika, S,Kom., M.Cs.

Room Manager : Lintang Patria, M.Kom

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	10101	Lintang Patria	Universitas Terbuka	Application of Cheng's Fuzzy Time Series in World Crude Oil Price Prediction
2	13.45 - 14.00	10501	Siti Mahmuda	Mulawarman University	Classification of The Human Development Index in Kalimantan using Random Forest Method
3	14.00 - 14.15	10901	Rahma Pitria Ningsih	Politeknik Negeri Banjarmasin	The Impact of Quizlet on the Transferability of Vocabulary in English as a Foreign Language (EFL) Learners: Student Perspectives
4	14.15 - 14.30	10602	Dian Nursantika	Universitas Terbuka	Automatic Presence Design in Virtual Class Using Deep Learning
5	14.30 - 14.45	10902	Selly Anastassia Amellia Kharis	Universitas Terbuka	Unveiling the Potential of Artificial Intelligence in Digital Marketing for Universitas Terbuka
6	14.45 - 15.00	31209	Selly Anastassia Amellia Kharis	Universitas Terbuka	Determinants of Face-to-Face/ Webinar Tutorial Class Scheduling in Universitas Terbuka
7	15.00 - 15.15	10102	Fanny Novika	Trisakti School of Insurance	Clustering Sukuk Using the K-Means Algorithm for Allocation of Investors Based on Investment Risk Profile



# ONLINE PARALLEL SESSION PRESENTATION SCHEDULE





## Breakout Room 1 (Zoom Apps)

Subtheme : Agribusiness (Animal Science, Digitalization in Agribusiness, Entrepreneurship in Agriculture, Fisheries Sustainability, Environmental Pollution)

Moderator : Bayu Eka Wicaksana, M.P.

Room Manager : Venty Fitriany Nurunisa, S.E., M.Si., M.Sc.

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	20204	Fachnia Nur Annisa	Universitas Terbuka	Poultry Feed Fortified with Moringa Leaves and Tumeric Leaves to Produce Functional Eggs : A review
2	13.45 - 14.00	20301	Norbertus Citra Irawan	Gadjah Mada University	Unleashing the Power of Digital Farming: A Young Farmer Perspective on Sustainability Value
3	14.00 - 14.15	20403	Dian Ardifah Iswari	Muhammadiyah University of Madiun	Risk Handling Strategy for Vegetable Business in P2L Ngongak Tanduran
4	14.15 - 14.30	20504	Apriansyah	Tanjungpura University	Shelf Oceanography and Small Pelagic Fisheries in the Java Sea
5	14.30 - 14.45	20506	Mu'amar Abdan	IPB University	Length-Weight Relationship and Condition Factors of Keudawah ( <i>Rasbora</i> sp., Family: Danionidae) in the Krueng Lanca Flows of Nagan Raya Regency, Aceh, Indonesia
6	14.45 - 15.00	30605	Agustinus Mangaratua Samosir	IPB University	Recovery of Fish Community Suffered from Feminization by Endocrine Disrupting Chemicals (EDCs) in Surabaya River, East Java
7	15.00 – 15.15	30803	Rizky Darmawan	IPB University	Potential and strategy for tourism development of Panjang and Lima Islands in Banten Bay

No	Schedule	ID	Presenter	Institution	Title
8	15.15 – 15.30	20205	Wiwit Denny Fitriana	Universitas Pesantren Tinggi Darul Ulum Jombang	Effect of Probiotics Addition on Artificial Feed for Catfish Growth

## Breakout Room 2 (Zoom Apps)

Subtheme : Agribusiness (Entrepreneurship in Agriculture, Fisheries Sustainability, Functional Food for Health and Sustainability, Environmental Policies and Institutions)

Moderator : Dr. Pepi Rospina, S.P., M.Si.

Room Manager : Randy Adhiputra, S.Si.

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	20405	Meri Ariyantini	Universitas Sriwijaya (students)	Income analysis of the processing gambier liquid waste as a natural dye in the jumputan cloth business in Toman Village, Babat Toman District, Musi Banyuasin Regency
2	13.45 - 14.00	20404	Moh. Shohwan Najih	Universitas Terbuka	Enterpreneurship For Making Agro Fertilizers In SolouroVillage, Solokuro District, Lamongan Regency, East Java
3	14.00 - 14.15	20507	Saka Tirta Septya	Universitas Terbuka	Evaluation of Fish Consumption Conditions in Bekasi Regency Communities and Improvement Strategies
4	14.15 - 14.30	20609	Ila Fadila	Universitas Terbuka	Fruit Consumption Improvement as an Effort to Sustainable Lifestyle
5	14.30 - 14.45	30502	Maulidian	Universitas Trilogi	Green Entrepreneurship Incubation Model for Students at Trilogy University Business Incubator: A Literature Review
6	14.45 - 15.00	20406	Agung Grandika Radinata	Universitas Terbuka	Business Model and Feasibility Study Analysis of a Low Glycemic Index Rice – Parboiled Rice
7	15.00 – 15.15	10105	Eli Novita Sari	PTN Banyuwangi	Visual and Pressure Signal Investigations on Bubble Produced by Ejector Bubble Generator

## Breakout Room 3 (Zoom Apps)

Subtheme : Biology (Biodiversity, Environmental Geography)

Moderator : Dr. Elizabeth Novi Kusumaningrum, S.Si., M.Si.

Room Manager : Yudo Ramdhani

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	30104	Aulia Floribunda Harp	Badan Riset dan Inovasi Nasional (BRIN)	Application of Endophytic Bacteria using In vitro Technique to Increase Vigour of Shallots ( <i>Allium cepa</i> L.) based on Inoculation Time
2	13.45 - 14.00	30105	Soraya Habibi	Universitas Terbuka	Study on The Utilization of Weed Plants as Bioherbicides
3	14.00 - 14.15	30106	Isnawati	Universitas Negeri Surabaya	Indigenous Bacteria Diversity of Feed Fermented Fermetodege Based on Molecular Analysis The Next Generation Sequencing (NGS)
4	14.15 - 14.30	30107	Fitriari izzatunnisa Muhaimin.	Universitas Negeri Surabaya	Phylogenetic relationship of indigenous bacteria fermetodege based on next-generation sequencing (NGS) molecular analysis
5	14.30 - 14.45	30201	Agus Prasetya	UNIVERSITAS TERBUKA DAERAH SURABAYA	Building the character of a community concerned with ecology through the Environmental Reforestation program in Madiun City

## Breakout Room 4 (Zoom Apps)

Subtheme : Biology (Animal Science, Fisheries Sustainability, Biodiversity)

Moderator : Mutimanda Dwisatyadini, M.Kep.

Room Manager : Heny Kurniawati, S.ST., M.Kes.

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	20202	Izul Miftakhul Jannah	Universitas Bengkulu	Genetic Variation of Burgo Chicken ( <i>Gallus Gallus</i> ) From Bengkulu Based on Displacement-Loop Genes
2	13.45 - 14.00	20203	Ahmat Fakhri Utama	Universitas Bengkulu	DNA Barcoding of Burgo Chicken of Endemic Bengkulu Origin Based on Cytochrome Oxidase Gene Sub Unit I Mitochondrial DNA
3	14.00 - 14.15	20505	Agustinus Mangaratua Samosir	IPB University	Bioaccumulation of heavy Metals (Cd, Cu) in the flesh of green mussel ( <i>Perna viridis</i> ) in Banten and Jakarta Bays
4	14.15 - 14.30	30102	Ema Pusvita	Universitas Sriwijaya	Economic Study of Agrosilvofishery Model of Meranti-Nanas-Catfish in Oki Regency South Sumatra, Indonesia
5	14.30 - 14.45	30103	Mutia Erti Dwiastuti	National Research and Innovation Agency.	Rhizosphere Fungi Abundance on Acid Dry and Tidal Soils in Borneo Prima Citrus Fields, East Kalimantan
6	14.45 – 15.00	31207	Fajar Agus Saputro	Universitas Terbuka	The Application of Biofertilizer to Realize Sustainable Agricultural Program

## Breakout Room 5 (Zoom Apps)

Subtheme : Urban and Regional Planning (Sustainability Living, Environmental Geography, Environmental Modeling, Environmental Monitoring, Environmental Policies and Institutions)

Moderator : Mirza Permana, S.T., M.Si.

Room Manager : Heri Kurniawan, S.Si., M.Si.

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	31204	Ayu Wulandari	Universitas Lampung	Women's Empowerment in Coastal Areas: Waste Management Based on Circular Economy Paradigm (Study Case on Pasaran Island, Bandar Lampung)
2	13.45 - 14.00	30202	Joni Fitra	Institut Sains dan Teknologi TD. Pardede	Identification of flood vulnerability using the topographic wetness index method in Pantai Labu Baru village, Deli Serdang, North Sumatera
3	14.00 - 14.15	30304	Ismail Nugraha Kadullah	Universitas Terbuka	Developing Gorontalo City Digital Terrain to Analyse Surface Flow Limit
4	14.15 - 14.30	30401	Achmad Syukri Raihan	IPB University	Assessment of Oceanographic Trend and Ocean Health Index in The Gulf of Madura
5	14.30 - 14.45	30501	Lulus Adhitya Kahono	Universitas Terbuka	Enhancing Wildfire Risk Assessment Through Weather Modeling and Machine Learning: A Case Study in Orange County, USA



## Breakout Room 6 (Zoom Apps)

Subtheme : Environment (Sustainability Living, Environmental Modeling, Environmental Pollution)

Moderator : Dr. A. Hadian Pratama Hamzah, S.IP, M.I.L.

Room Manager : Naufal Rifky Cahya, S.Kom

Linj : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	31201	Salsabila Yunaini Siregar	Institut Teknologi Bandung	Financial Feasibility Of Business Towards Application Based Business: A Case Study Of Drykeun
2	13.45 - 14.00	30305	Rudi Walujo Prastianto	Institut Teknologi Sepuluh Nopember Surabaya	The geometrical parameters effects on the degree of bending (DoB) of multi-planar DTKY tubular joints in offshore platforms
3	14.00 - 14.15	30306	Rudi Walujo Prastianto	Institut Teknologi Sepuluh Nopember	Bending load effects on stress concentration factor distribution of multi-planar DTKY tubular joints
4	14.15 - 14.30	30601	Prawira Yudha Kombara	Badan Riset dan Inovasi Nasional (BRIN)	Aerosol Variability over Java Island Based on MERRA-2 Data
5	14.30 - 14.45	30602	Aprilion Krisandi	Brawijaya University	Effect of Mn and Al Co-doping ZnO Nanoparticles in the Photodegradation Process of Congo Red Dye Pollutant in Water
6	14.45 - 15.00	31202	Rizky Amelia	Politeknik Negeri Banjarmasin	Wetland Reading Mobile Application to Help Educate Students and Protect Wetlands in South Kalimantan for Sustainable Living

## Breakout Room 7 (Zoom Apps)

Subtheme : Environment (Sustainability Living, Environmental Monitoring, Environmental Pollution)

Moderator : Shinta Permana Putri, S.T., M.P.W.K.

Room Manager : Ulul Hidayah, S.T., M.Si.

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	31201	Vivi Amalia Famachyuddin	Institut Teknologi Sepuluh Nopember	Performance Analysis of Cooling Pad with Stove Wick Material in Simple Flats for Rent
2	13.45 - 14.00	31205	Galih Taqwatomo	National Research and Innovation Agency	Mechanical Properties of Recycling Mixed Waste Plastic Predicted on Pallet Application Using Finite Element Analysis
3	14.00 - 14.15	30402	Tanti Ardiyati	Badan Riset dan Inovasi Nasional	Prediction on Ozone Formation in the Irradiator Gamma Merah Putih
4	14.15 - 14.30	30403	Boy Marsaputra Panjaitan	National Research and Innovation Agency (BRIN), Indonesia	Synthesis of Bimetallic Gold- Silver Nanoclusters and Its Application as Pb (2) Sensing
5	14.30 - 14.45	30603	Fifia Zulti	Badan Riset dan Inovasi Nasional	Removal Pollutants in Textile Wastewater Using Rice Husk as Adsorbent
6	14.45 - 15.00	30606	Ayu Saka Laksmi W	Universitas Bali Internasional	Identification off Microplastics in Euthynnus affinis in Kedonganan Area, Kuta, Badung, Bali

## Breakout Room 8 (Zoom Apps)

Subtheme : Information System (Cloud computing, Computer Science, Deep Learning, Human-Computer Interaction (HCI) and User Experience (UX))

Moderator : Dra. Dwi Astuti Aprijani, M.Kom.

Room Manager : Dian Nurdiana, S.Kom., M.Kom

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	10301	Syairudin Bambang	Institut Teknologi Sepuluh Nopember	Development Model of Cloud Computing Adoption for Industrial 4.0 Implementation Strategy for Improve MSMEs Performance
2	13.45 - 14.00	10402	M. Robikhul Ikhsan	UGM Yogyakarta	Development of An Information System for The Diagnosis and Management of Thyroid Disorders
3	14.00 - 14.15	10601	Evrita Lusiana Utari	Universitas Respati Yogyakarta	Classification of Covid 19 X-ray Images Using Deep Learning Algorithms
4	14.15 - 14.30	10701	Indah Puji Astuti	Universitas Muhammadiyah Ponorogo	Usability Testing for Learning Media Application Al-Qur'an Hadith
5	14.30 - 14.45	10702	Frans Firmansyah	STIMIK ESQ	Nielsen Versus SMART in Heuristic Evaluation of Online Transportation App
6	14.45 - 15.00	10703	Muhammad Fajar Fiandhika	STIMIK ESQ	System Usability Scale Validation from Expert Perspective
7	15.00 - 15.15	10704	Eem Kurniasih	Universitas Terbuka	Results Testing the Validity of Media Puzzle Digital Game with a Realistic Mathematics Education Approach for Kindergartens
8	15.15 - 15.30	10803	Rika Yunitarini	Universitas Trunojoyo	Analysis and Design of Indonesian Traditional Medicine (Jamu) Information System by Using Prototyping Model (Case Study: Madura Island)

## Breakout Room 9 (Zoom Apps)

- Subtheme : Information System (Human-Computer Interaction (HCI) and User Experience (UX), Information Technology)
- Moderator : Fitria Amastini, S.Kom., M.T.I.
- Room Manager : Siti Hadijah Hasanah, S.Si., M.Si.
- Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	10705	Mudrikah Nasyiah	STIMIK ESQ	System Usability Scale for Measuring Usability of Social Network Application from User Perspective
2	13.45 - 14.00	10706	Lilik Herdiyawati	Institut Teknologi Sepuluh Nopember	Model Development Effect of Emotional Design and Human Performance on The Use of The Teman Bus Application
3	14.00 - 14.15	10707	Angga Yuda Sakti	Institut Teknologi Sepuluh Nopember (ITS)	Analysis of E-Commerce Service Quality Level by Integrating Customer Experience Quality, Importance Performance Analysis and Quality Function Deployment.
4	14.15 - 14.30	10708	Bagas Martinus Rianu	Universitas Merdeka Malang	Hand Gesture Recognition-Based Control System Using Computer Vision for Transporter Robot
5	14.30 - 14.45	10801	Ekojono	Politeknik Negeri Malang	Multi-Criteria Decision Support System Using the AHP Method for Determining Weight of Transformer Paper Insulation Index
6	14.45 - 15.00	10802	Ekojono	Politeknik Negeri Malang	Multi-Expert GMM Decision Support System with AHP Method for Determining Weight of Transformer Oil Insulation Quality Index
7	15.00 – 15.15	10108	Fatia Fatimah	Universitas Terbuka	N-Soft Rough Set Applied to Bipolar Data
8	15.15 – 15.30	10104	Qonita Qurrota A'yun	UNMUL	Application Of Graph To Queue System Models In Max-Plus Algebra

## Breakout Room 10 (Zoom Apps)

Subtheme : Information System (Machine Learning and Artificial Intelligence)

Moderator : Darsih Idayani, M.Si.

Room Manager : Wahyu Hidayat, M.Si.

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	10903	I Made Eka Dwipayana	Udayana University	Time Series Prediction on Population Dynamics
2	13.45 - 14.00	10904	Siska Aprilia Hardiyanti	Politeknik Negeri Banyuwangi	Applying Digital Images to Identify Pavement Damage in Support of The Road Infrastructure Development Program
3	14.00 - 14.15	10905	M. Helmy Noor	Politeknik Negeri Banjarmasin	Design of Learning Media based on Augmented Reality in Physics Subjects
4	14.15 - 14.30	10906	Angelina Amanda	Universitas Pradita	Artificial Intelligence Impact on Postpartum Culture Implementation: Javanese and Chinese Culture
5	14.30 - 14.45	10907	Suharyanto	UGM Yogyakarta	Development of a clinical decision support system for the diagnosis and management of hepatitis
6	14.45 - 15.00	10908	Diana Rinawati	RSA UGM Yogyakarta	Development of a clinical decision support system for the diagnosis and management of dyspepsia
7	15.00 - 15.15	10103	Dini Andiani	UPI	Trends in Research on Mathematical Representational Ability in the Journal of Mathematics Education across Indonesia: from Research Design to Data Analysis
8	15.15 - 15.30	10106	Syamsul Agus	UNHAS	Stability Analysis of Prey-Predator Model Migration with Holling Type-III Response Function In The Presence of Competition and Toxicity

No	Schedule	ID	Presenter	Institution	Title
9	15.30 – 15.45	10107	Wahyu Hidayat	Universitas Terbuka	Characterization of Directed Graphs Representing $C^*$ -Algebra of Complex Matrices

## Breakout Room 11 (Zoom Apps)

Subtheme : Food Technology (Functional Food for Health and Sustainability)

Moderator : Ing. Mohamad Rajih Radiansyah, B.AS., M.Sc.

Room Manager : Ariyanti Hartari, S.Tp., M.Si.

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	20604	Afrida Zahira	Universitas Terbuka	Physiochemical Characteristics of Meat Analog from Sorghum, Oyster Mushroom, and Red Bean Mixture
2	13.45 - 14.00	20605	Ayu Lestari	Universitas Terbuka	Chemical Characteristics of High-Protein Mochi to Prevent Stunting in Children
3	14.00 - 14.15	20606	Roby Muhamad Sopandi	Universitas Terbuka	Formulation Of Cookies With Substitution Of Fish Cork ( <i>Channa striata</i> ) And Moringa Oleifera Flour As Foods Functional Protein Wealthy
4	14.15 - 14.30	20607	Nabila Nuril Azmi	Universitas Terbuka (academics)	Characterization of Iron Fortified Analog Rice Made from Jali and Breadfruit to Prevent Anemia in Pregnant Women
5	14.30 - 14.45	20608	Vionita	Universitas Terbuka	Proximate Analysis Of Tomato Sauce With Added Banana Waste As A Thickener
6	14.45 - 15.00	20610	Ariyanti Hartari	Universitas Terbuka	Cilok: A bibliometric review from 2006-2023
7	15.00 - 15.15	20611	Miftakhul Hajidah	Universitas Terbuka	Prospects of functional food products from seeded bananas ( <i>Musa Balbisiana Colla</i> ) for diabetes.
8	15.15 - 15.30	20402	Shandra Silvia Nugraha	Universitas Terbuka	Physical and Organoleptic Quality Characteristics of Ice Cream Made from Arabica Coffee Grounds

## Breakout Room 12 (Zoom Apps)

Subtheme : Food Technology (Green Food Production, Sustainable Food Packaging, Environmental Pollution, Entrepreneurship in Agriculture)

Moderator : Iffana Dani Maulida, M.Sc.

Room Manager : Rina Rismaya, S.T.P., M.Si.

Link : <https://sl.ut.ac.id/ISST2023>

No	Schedule	ID	Presenter	Institution	Title
1	13.30 - 13.45	20701	Moh. Taufik	UIN Raden Mas Said Surakarta	Fish Processing Waste as an Alternative Source of Peptones: A Systematic Review
2	13.45 - 14.00	20702	Laurentius Dominicus Gadi Djou	Universitas Flores	Improvement of Sorghum Cultivation Technology in Ondorea Barat Village, Ende Regency, Indonesia
3	14.00 - 14.15	20703	Septariawulan Kusumasari	Universitas Sultan Ageng Tirtayasa	Potential Use of Food Waste in Food Processing to Add Nutritional Value
4	14.15 - 14.30	20704	Ita Fatkhur Romadhoni	Universitas Terbuka Daerah Surabaya	Quality Analysis of Herbal Teabags as Functional Drink
5	14.30 - 14.45	20801	Sulistyawati	Universitas Terbuka	The Characteristic of Tapai with Different Packaging Materials: Review
6	14.45 - 15.00	30604	Fifia Zulti	Badan Riset dan Inovasi Nasional (Professional)	Removal Pollutants in Textile Wastewater using Rice Husk as Adsorbent
7	15.00 - 15.15	30802	Nabin Pandey	Tribhuvan University	Mechanistic Interpretation of Corrosion Potential Measurement for Anti-corrosive Competence of Plant-derived Extract on Mild Steel in Concrete Composite
8	15.30 - 15.45	20705	Rina Rismaya	Universitas Terbuka	Evaluation of Chemical and Microbial Quality of Cardamon in Different Drying Methods



No	Schedule	ID	Presenter	Institution	Title
9	15.00 - 15.30	31206	Iffana Dhani Maulida	Universitas Terbuka	Monitoring the Hygiene of Reusable Cutlery as an Effort to Sustainable Lifestyle



## ABSTRACT OF ON-SITE PARALEL SESSION



## Room A

# The Effect of Brand Positioning and Product Differentiation On Consumer Loyalty of Indomie Instant Noodle

Susi Banjarnahor<sup>1\*</sup>, Sry Yuniati P.K Hardini<sup>1</sup>, and Abel Gandhy<sup>2</sup>

<sup>1</sup>Universitas Terbuka, Agribusiness Program, 15437, South Tangerang, Banten, Indonesia

<sup>2</sup>Universitas Surya, Agribusiness Program, Banten, Indonesia

### Abstract

The competition between industry of food sector in modern era were increased significantly. One of major instant noodle brand is Indomie. The companies have to create a good strategy to increase the income, profits and maintain market share products. The purpose of this research is to analyze the effect of product positioning and product differentiation on the consumer loyalty of Indomie instant noodle. This research used a quantitative descriptive study method. The sampel of this research as many as 100 respondents. The sampling technique is non probability sampling used the purposive sampling technique. The data analyze technique is a multiple linier regression analysis using F-test, t-test, classical assumption test and coefficient of determination test. The data processed using the SPSS-25 program. The results shows that the positioning and product differentiation simultaneously has significant to consumer loyalty on Indomie instant noodle. Partially, the positioning has a positive and significant to consumer loyalty of Indomie instant noodle. While the product differentiation has no significant to consumer loyalty. The coefficient of determination test ( $R^2$ ) shows that the positioning and product differentiation have an effect of 50.8% on consumer loyalty while the 49.2% are influenced by other variabels. Companies should continuously create innovations by introducing new variants to interested consumer. Thus can be achieved by attempting instant noodle variants that are made with healthier ingredients without added preservatives. Futhermore, product packaging can also be improved by using environment friendly packaging.

**Keywords:** Positioning, Product Differentiation, Consumer Loyalty, Indomie

## The Effect Of Marketing Mix On The Purchase Decision Of Wall's Cornetto Ice Cream

Reynaldy Pakpahan<sup>1\*</sup>, Sri Yuniati P.K Hardini<sup>1</sup>, and Abel Gandhy<sup>2</sup>

<sup>1</sup>Universitas Terbuka, Agribusniss Program, 15437, South Tangerang, Banten, Indonesia

<sup>2</sup>Universitas Surya, Agribusniss Program, Banten, Indonesia

### Abstract

Competition in the food industry is getting tougher. The growth of the food industry in the third quarter of 2022 reached 3.57%. Therefore, companies need marketing strategies that can maintain good relations between corporation and consumers. The marketing strategy that can be used is the marketing mix, which consists of product, price, location, and promotion variables. This study aims to determine the effect of the marketing mix on purchasing decisions of cornetto ice cream. The sample used was 100 people using online questionnaire. The method used in this research is descriptive-quantitative. The data testing in this study using SPSS 25 software. The process of testing the data begins with the validity and reliability tests to obtain valid and reliable results. Then the data were analyzed using simultaneous and partial tests. In the simultaneous test, the results obtained showed that the marketing mix variables simultaneously had a positive effect on the purchasing decision for cornetto ice cream. In the partial test, the results show that all the marketing mix variable partially has a positive effect on the purchasing decision of cornetto ice cream. The coefficient of determination obtained in this study is 0.661, meaning that the dependent variable, namely the purchase decision, is influenced by the independent variable by 66%, while 44% is influenced by other variables. Based on the results of this study, PT. Unilever Indonesia Tbk must continue to improve the quality of cornetto ice cream products, adjust prices appropriately, choose strategic locations, and display attractive promotions.

**Keywords:** purchasing decisions, consumers, marketing mix, es cream cornetto.

## Analysis of Productivity Smallholder Cashew Farming in Commodity Areas Base in North Buton Regency, Southeast Sulawesi

Rina Astarika<sup>1</sup>, La Ode Jabuddin<sup>2</sup>, Deki Zulkarnain<sup>3</sup>, and La Ode Muh. Munadi<sup>3</sup>

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<sup>2</sup>Halu Oleo University, Department of Agribusiness, 93232, Kendari, Southeast Sulawesi, Indonesia.

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### Abstract

The cashew tree is a mainstay plantation commodity in North Buton Regency, which makes an important contribution to farmer household income. The aims of the study were (1) to find out the characteristics of farmers and cashew farming, (2) to analyze the determinants of the productivity of cashew farming carried out in January-April 2023, which were determined purposively using primary data with a total of 60 farmers as respondents. Research variables include the characteristics of farmers, farming, and farming costs. Data were analyzed descriptively using the *Cobb-Douglas* equation. The results of the study (1) The average cashew farmer has a productive age (49 years), has adequate education (9 years), has experience in farming (22 years), has a family of 3 dependents; (2) The average cashew farming business has a medium area (1.3 hectares) with property rights, the number of productive plants is 237 trees/hectare, the total production is 1.5 tons/hectare/year, and the average maintenance cost is Rp. IDR 869,750/hectare/year; (3) The determining factors for the productivity of cashew farming are the farmer's age, the number of productive plants, and maintenance costs. Therefore, it is necessary to regenerate farmers and revitalize farming land with the full support of various relevant stakeholders.

**Keywords:** Production, land area, farming, cashew n

## Prospects of Gedi plant (*Abelmoschus manihot* L.) as a functional food and herbal medicine

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### Abstract

Gedi (*Abelmoschus manihot* L.). It is a plant that grows in tropical climates and is widely used as vegetables and herbal traditional medicine. Many people know gedi as a Japanese papaya. Gedi leaf is very well known by the people of Manado because it is often used as one of the vegetables in Manado porridge. Gedi leaves contain compounds that are anti-bacterial, anti-inflammatory, and antioxidants. This article is written from the results of a literature review to explore the potential and utilizations of Gedi plants. Gedi leaves are widely used as vegetables, and herbal medicinal plants to treat several diseases. Gedi can be planted easily in the yard of the house. Given the potentials and advantages of gedi plants, further research is still needed to be able to explore the use of gedi as a functional food source for every family in Indonesia.

**Keywords:** *Abelmoschus manihot* L., gedi, functional food, herbal medicine

## THE ROLE OF THE AGRICULTURAL EXTENSION CENTER FOR THE STRATEGIC COMMAND FOR AGRICULTURAL DEVELOPMENT

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### Abstract

The Agricultural Extension Center is the primary agricultural institution at the sub-district level. Increasing The Agricultural Extension Center's function and duty involves increasing agricultural development. The Agriculture Development Strategic Command seeks to build and strengthen human agriculture resources for a prosperous and progressive Indonesia by involving all stakeholders from the national to the village levels. The study aims to analyze the role of the agricultural extension center for the strategic command for agricultural development. This research used census design with 35 respondents progressive farmer in Serang City, Banten Province. Data were collected in 2023 through questionnaires and in-depth interviews and analyzed using descriptive statistics. The results showed that the agricultural extension center have a high role in agricultural development movement, learning center, agribusiness consultation center, and partnership network development center.

**Keywords:** role, agricultural extension center, progressive farmers

## The effect of processing temperature variation on the vitamin C content of lime (*Citrus aurantifolia*) drink using High Performance Liquid Chromatography (HPLC)

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### Abstract

Lime is rich in vitamin C. Nevertheless, it is easily degraded by high processing temperatures. The aim of this study was to determine the effect of processing temperature variations on the vitamin C content in lime drinks using the HPLC method. This study used a completely randomized design with one factor, namely different processing temperatures (no processing, 5°C, 28°C, 38°C, and 90°C) with 5 repetitions. The results showed that the processing temperature significantly affected in decreasing vitamin C content of lime drinks. The higher the processing temperature, the lower the measured vitamin C content. Lime drinks without processing have a higher vitamin C content (0.0330%) compared to 5°C temperature (0.0328%), 28°C temperature (0.0318%), 38°C temperature (0.0317%), and 90°C temperature (0.0309%). In conclusion, these findings provide new insights for researchers and the beverage industries in minimizing vitamin C degradation.

**Keywords:** *Citrus aurantifolia*, HPLC, lime drink, vitamin C degradation



## Development of Environmental Detector System (EDS) Application Through Industrial and Vocational Collaboration

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### Abstract

Politeknik Negeri Medan (POLMED) as a vocational institution and PT Berkat Solusi Teknik as a partner have the same responsibility to solve problem that exist in society. Problems in society related to pollution from industrial waste. This is due to many complaints from the public, NGO, and other organization regarding environmental damage due to production and economic activities. Based on the problems above, this study is needed how to detect and monitor environmental parameters such as CO<sub>2</sub> level, lighting, noise, temperature, humidity, and measurement data that can be accessed and displayed in real-time via the internet. This research will be carried out and has been funded by the matching fund program in 2023. The implementation method is strengthening work organization, making EDS prototype brackets, design of an environmental detector system (EDS) prototype, prototype testing, MBKM internship, international conferences, monitoring and coordinating with partner, internal monitoring, and evaluation I and II, and preparation of final report. We innovate in the selection of components and the technology used. This collaboration is a symbiotic mutualism between POLMED and industry. This collaboration will have immediate benefits for society (tangible and intangible).

**Keywords:** vocational institution, industry, environmental detector system (EDS), matching fund program.

## Room B

# Analysis of The Feasibility Of Freshwater Ornamental Shrimp Farming of The Neocaridina Type In Gunung Mulya Village, Tenjolaya Sub- District, Bogor Regency

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### Abstract

Identify costs, revenues, profits, and business feasibility which aims to determine whether or not freshwater ornamental shrimp farming is feasible in Gunung Mulya village, Tenjolaya sub-district, Bogor Regency to run. Based on the results of data analysis it was concluded that the cultivation of the Neocaridina type freshwater ornamental shrimp in Gunung Mulya village, Tenjolaya sub-district, Bogor regency, was profitable, with a total profit obtained in 1 production cycle of Rp. 15,413,334. The financial aspect feasibility indicators obtained show an R/C ratio value of 2.60, and a B/C ratio value of 1.60. Thus it can be concluded that the business of cultivating freshwater ornamental shrimp of the Neocaridina type in Gunung Mulya Village, Tenjolaya sub-district, Bogor Regency is feasible to carry out.

**Key words:** financial analysis, ornamental shrimp business

## Population Dynamics of Indian Mackerel (*Rastralliger kanagurta*) in Northern Bone Bay Waters, Indonesia

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### Abstract.

*Rastralliger kanagurta* has important economic value both locally and nationally. This study aims to analyze the parameters of population dynamics of *Rastralliger kanagurta* in the waters of Northern Bone Bay. To analyze the parameters of population dynamics, measurements were made of the total length of the sample fish in centimeters. The research was conducted in March – September 2022 at the Palopo City Pontap Fish Landing Site. Sampling is carried out every two weeks. The results of the growth parameter analysis obtained each value of growth coefficient = 0.84 per year, asymptotic length = 30.5 cm and  $t_0$  = -0.189 years. Furthermore, for mortality parameters, natural mortality was obtained at 1.64 per year, capture mortality = 2.47 per year, and total mortality at 4.11 per year and exploitation rate at 0.6%. The results of this study show that the growth rate of *Rastralliger kanagurta* is very high and can reach maximum length at a relative age of 15 years. Mortality parameters show that *Rastralliger kanagurta* mortality in northern Bone Bay waters is higher from fishing than natural mortality. The exploitation *Rastralliger kanagurta* in the waters of northern Bone Bay is 60% greater than the maximum exploitation rate of 50%. Based on the results of this study, management of fishery resources is needed so that the population is not disturbed.

**Keywords:** *rastralliger kanagurta*, exploitation rate, population, mortality, Bone Bay

## Size Composition, Growth Pattern and Condition Factor of *Thunnus Albacares* in Bone Bay Waters, Indonesia

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### Abstract

This study aims to analyze the type composition, growth patterns and condition factors of Madidihang tuna caught in the waters of Bone Bay. Sample collection was carried out in July – November 2018 at two stations, each station 1 in Cimpu Luwu regency and station 2 at the Lonrae Fish landing site, Bone regency. At station 1 the number of fish caught as many as 10,366 heads had an average length of 81.19 cm and an average weight of 14.43 kg. Station 2 has an average length of 97.14 cm and an average weight of 27.79 cm Results of Analysis of the length of the weight of Madidihang Tuna during the study. The results of the analysis of tuna growth patterns at station 1 and station 2 obtained values of  $b < 3$  or negative allometric. This means that weight gain is slower when compared to fish length gain. The condition factor values for station 1 averaged  $1.03 \pm 0.25$  and station 2 the condition factor values averaged  $1.07 \pm 0.43$ ; condition factor values varied based on temporal and fish size.

**Keywords:** *Thunnus albacares*, LWRs, Condition Factor, Bone Bay

## The Impact of Government Policy on Production, Labor, Poverty and Income of the Fisheries Sub-sector in North Sumatra Province

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### Abstract

The purpose of this study is the impact of government policies on production, labor, poverty and income of the fisheries sub-sector in North Sumatra Province. Simultaneous equation model, using Time Series data with a time span from 2000-2022. Parameters were estimated using the 2SLS (Two Stage Least Squares) method, and data processing using the SAS/ETS version 9.12 computer program. Forecasting is done to find out government policies in 2025-2030. The research results show that the government's policies on production, labor, poverty and income of the fisheries sub-sector in the province of North Sumatra have not changed. Fishery production in North Sumatra has a significant and significant effect of 1% on the price and area of fishing grounds. Price elastic (responsive) variables affect fishery production in the long run. labor in the fisheries sub-sector has a significant and significant effect of 1% on the income of the fisheries sub-sector. All inelastic variables affect the fishery sub-sector income variables.

**Keywords:** Production, labor, poverty, agricultural sub-sector income

## Analysis of Potential and Strategy for Agribusiness Development

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### Abstract

Village potential is all the natural resources and human resources owned by the village as the basic capital that needs to be managed and developed for the survival and development of the village. Murung Panggang Village is one of the villages located in South Amuntai District, which consists of 30 villages in South Amuntai District, which has the widest potential for agricultural land, so it is necessary to study the potential for natural and human resources and agribusiness development strategies. The aims of the research were (1) to identify the potential of natural resources and agricultural human resources in Murung Panggang Village (2) to analyze internal and external factors and to determine agribusiness development strategies for Murung Panggang Village. The potential of natural resources in Murung Panggang is large agricultural land, the development of local types of chicken livestock, an abundance of aquatic fish catches and a lot of forest products. HR potential, namely the number of productive age workers, and the use of labor in the family. Internal factors: the desire to improve living standards, available human resources and facilities, most of the farmers are members of farmer groups, local potential which is the hallmark of the village, diverse agricultural products, low level of education, institutional capital not affordable by farmers, limited cultivation system not yet modern, land use is still not optimal, livestock production costs are high. External factors: the development of agricultural technology, support from PPL and the government, high demand for food, pests and diseases, the purchase price of animal feed is expensive, flooding often occurs in the field, the length of experience of farmers. The highest QSPM matrix strategy is to expand local potential land by utilizing agricultural technology to increase agricultural yields in Murung Panggang Village.

**Keywords:** Analysis, Potential, Strategy, Agribusiness, Murung Panggang Village

## Potential of Suji (*Dracaena angustifolia*) Leaves in Producing Functional Quail Eggs

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### Abstract

This research is intended to determine the possibility of utilisation of suji leaves in animal feed, especially poultry. In this study, the livestock used was quail because quail is a small poultry that has better protein than chicken or duck. This study used a completely randomised design with 6 (six) treatments and 5 (five) replicates with 16 (sixteen) quails for each replicate. The treatment rations consisted of 6 kinds ranging from control rations to rations with 5% suji leaves. Parameters measured included feed consumption, feed production, feed conversion, mortality. The results obtained were suji leaf flour gave a significant effect ( $p > 0.05$ ) in feed consumption and did not give a significant effect ( $p > 0.05$ ) on egg production, egg weight and feed conversion. Further research needs to be done to see the most optimum level of use of suji leaves.

## Room C

# Derivated Fungi of Sponge from Lampung Coastal As Antibacterial Activity Against Multi Drug Resistance Bacteria

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### Abstract

Sponges are one of the marine invertebrates that produce secondary metabolites including renieron and renieramycins. Sponges generally has a symbiotic relationship with the microbes in their body. A number of active compounds isolated sponges were also found in symbiotic bacteria. The use of antibiotics directly or indirectly will increase the prevalence of resistance from pathogenic bacteria or normal flora which will develop into multi-drug resistant (MDR) strains. The search for new antibiotic compounds as an alternative, for bacteria that have become resistant and has become a task for researchers. The purpose of this study was to determine the microbial symbiont of marine sponge that has antibacterial activity against MDR bacteria, and to determine profile of the bioactive compounds structure contained. The results of this study were obtained 18 types of sponges and 25 fungi from sponges. There were 13 isolates of active fungi indicating the presence of potential metabolites.



## Traditional Activity and Pharmacological of *Dracaena liberica* (Gérôme & Labroy) Byng & Christenh: A review

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### Abstract

*Dracaena liberica*, an ornamental plant found in various African and Asian countries, has a long history of traditional medicinal use. It has been utilized to treat a wide range of ailments including colic, colds, fever, diarrhea, rheumatism, microbial infections, snake bites, gonorrhea, seizures, eczema, menorrhagia, sexual weakness, stomach pain, hypertension, conjunctivitis, asthma, and hemorrhoids. The therapeutic properties of this plant are attributed to the presence of bioactive compounds found in its leaves, rhizomes, and roots. These bioactive compounds encompass alkaloids, saponins, flavonoids, and triterpenoids. This article aims to offer an overview of *D. liberica* by examining its taxonomic characteristics, distribution, habitat, and traditional medicinal applications, while also exploring its therapeutic potential in terms of antioxidant, antibacterial, anticancer, and antitoxicity properties. Furthermore, the article discusses the active compounds that have been identified in previous studies, such as phytol, stigmasterol, linoleic acid, oleic acid, stearic acid, palmitic acid,  $\beta$ -sitosterol, and  $\beta$ -stigmasterol. Recent research has highlighted the roots and leaves of *D. liberica* as particularly promising sources of anticancer and antitoxicity agents. Consequently, *D. liberica* holds great potential for the development of natural medicines.

**Keywords:** *Dracaena liberica* bioactive compound, anticancer, antitoxicity

## Plankton Diversity and Limnological assessment of a Tropical Reservoir

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### Abstract

Planktonic diversity is an indicator tool to evaluate the health of aquatic ecosystem. A healthy ecosystem harbours well nourished flora and fauna. Limnological evaluation of a water resource illustrates the habitat suitability for the existence of certain type of flora & fauna. To assess the diversity of plankton in tropical reservoir, a study was carried out for two years in Barna Reservoir; a reservoir built across the river Barna; a well known tributary of river Narmada in central india. Certain limnological parameters were evaluated and found in normal range as suitable for good growth of planktons. A total of 75 species of phytoplankton belonging to 7 classes were recorded where as 47 species of zooplankton belonging to 5 groups were identified in Barna reservoir. Chlorophyceae the class of phytoplankton and Rotifera group of zooplankton found as dominant during the entire study of two years. The entire study depicts the healthy ecosystem availability required for all life forms in a tropical reservoir.

**Keywords:** Barna Reservoir, Narmada River, Central India, Chlorophyceae, Rotifera

## Tree Kangaroos (*Dendrolagus sp.*) of Papua: Characteristics and Conservation

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### Abstract

Tree kangaroos (*Dendrolagus sp.*) are an endemic mammal species in the Papua region. Tree kangaroos are vulnerable to threats from habitat conditions (forest destruction, illegal logging), predators, and hunting. Meanwhile, according to the IUCN, its conservation status is in crisis category. This paper uses the literature review method to inform the public about the characteristics, behaviour, and conservation of tree kangaroos (*Dendrolagus sp.*) in Papua. Over time, this information can motivate indigenous Papuans to care for and love tree kangaroos so that they continue to exist and sustain their regeneration in the tropical rainforests of Papua. The writing results explain that tree kangaroos have several characteristics, including a body weight of no more than 6-20 kg, even though some are very small, weighing 3 kg. Tree kangaroos tend to live in groups with one dominant male. This marsupialia has a white to yellowish face, the same as the neck to the abdomen, long ears, a tail longer than the body, long limbs and four very strong clawed fingers. Tree kangaroos experience embryonic diapause or delayed birth, allowing females to mate again after giving birth or the baby is still in the pouch. The indigenous Papuan community conducts traditional conservation for the survival of tree kangaroos.

**Keywords:** tree kangaroo, endemic, critical conservation status

## Survey of HPV genotypes using PCR-hybridization in Jakarta

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### Abstract

This is a study to identify genotypes of Human Papilloma Virus (HPV) among women in Jakarta. The virus increases the risk of cervical cancer, which the second highest incident of cancer in Indonesia. Although there is vaccination program to prevent infection of HPV, it must be based on prior screening of recipients based on HPV genotypes. Each genotype has different potential causing premalignant lesion. Most previous studies are not defining the genotypes of HPV. Therefore, this study is conducted to survey genotypes of HPV using PCR hybridization. The PCR hybridization can detect 35 genotypes, consisting of 18 high risk and 17 low risk genotypes. Samples are patients who visit a clinic in Jakarta. Most of them are women who are already married and between 20 and above 50 years of age. Samples are collected between August to November 2022. There are more than 400 samples. The most prevalent high risk genotype is genotype 52 while the most prevalent low risk is genotype 11.

**Keywords:** cancer, human papilloma virus, PCR-hybridization

## Invertebrate diversity in gastrointestinal *Fejervarya cancrivora* rice fields Ciomas, Bogor Regency

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### Abstract

Frogs that live in rice paddy habitats in Indonesia include *Fejervarya limnocharis* and *Fejervarya cancrivora*. Among the two rice frogs, *Fejervarya cancrivora* known as green toad is hunted and consumed by certain ethnic people, its body size is larger than *Fejervarya limnocharis*. The type of invertebrate eaten by *Fejervarya cancrivora* is still little known, so research needs to be done to analyze the type of invertebrate eaten by the frog. Samples of *Fejervarya cancrivora* frogs were randomly captured at two consecutive nights in the rice fields area of Ciomas sub-district, Bogor Regency and then 20% of the total catch was taken to be anesthetized, the rest was released back to the rice fields. The collection of invertebrates is taken from the gastrointestinal part of the toad. Identification of invertebrate species is carried out on some recognizable body remains of invertebrates. Based on the calculation of the Shannon-Winner Diversity Index, the type of invertebrate found in the female gastro intestinal *Fejervarya cancrivora* throughout the night has an index value of  $H^* = 0.948$ , while the invertebrates in the gastrointestinal *Fejervarya cancrivora* male have an index value of  $H^* = 0.845$ . Species of invertebrates found in gastrointestinal *Fejervarya cancrivora* include: *Conocephalus longipenis*, *Panstenon* nr. *Collaris boucek*, *Pachydiplossis oryzae*, *Hydrella philippina*, *Haplothrips aculeatus*, *Microvelia douglasi* (*microvelia*), *Snellenius* (*Microplitis*) *manilae*, *Cnaphalocrosis medinalis*, *Oncomelania* sp., *Chilo supressalis*. *Euborellia stali* (Dohrn), *Gonatocerus* sp., *Di cladispa armigera*, *Oxyopes javanus*, leftover leg crustaceans, *Brachymeria lasus*, *Nilaparvata lugens*.

**Keywords:** *Fejervarya cancrivora*, food, avertebrata, gastrointestinal.

## Room D

### The Spatio-Temporal of NO<sub>2</sub> Density Weighting in The Region of Malang, East Java Province, Indonesia

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#### Abstract.

The paper aimed to present the spatio-temporal of NO<sub>2</sub> Density Weighting during the period April 2022 – March 2023 (1 year) with weighting model in The Region of Malang, East Java Province, Indonesia. It is based on the remote sensing data of Sentinel-5p provided by ESA Copernicus Product. The data have been processed into the following indicators: low, small, and intermediate of NO<sub>2</sub> Density Weighting. During the analysed period, low weight has continuously no constant, so that in the month of November 2022 there are mostly 3470.11 ha in Malang Region Area of which in this region part are raised about 95.83 %. Intermediate weight has significant reduction from 2926.96 ha in the month of July 2022 to 929.39 ha in the month of March 2023, therefore health plant increased considering the reduced area of NO<sub>2</sub>. As a conclusion, The Region of Malang is very closely developed commercial household, industrial processed, and energy production. Therefore, the Malang Region Government needs to be firm regarding the cultivation of protected areas such as Green Space with various types of plant in it. In addition, the local government is also expected to always control industrial activities both on a factory and home scale.

**Keywords:** NO<sub>2</sub> density, sentinel-5p, spatio-temporal, The Region of Malang.

## Oceanographic Study in the Northern Banda Sea

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### Abstract

The Banda Sea has interesting oceanographic characteristics because it is a throughflow-crossing route in Indonesia. This study aimed to investigate oceanographic variable conditions in the Northern Banda Sea. In this case, the physical parameter data were derived from the ocean model output of CROCO between January 2015 and December 2022 at depths of 5m, 25m, and 110m. The results showed that the lowest sea surface temperature (SST) in July 2015 and 2019 (~25°C) and the highest in December 2020 (~30°C). While the lowest salinity in April 2019 is 33.1 psu and the highest in August 2022 (34.9 psu). In interannual variability, SSH and sea surface height (SSH) variations are significantly influenced by the El Niño Southern Oscillation (ENSO) and the Indonesian Ocean Dipole (IOD). During the combined period of El Niño and IOD(+) SST and SSH were observed to decrease in 2015, 2018, and 2019. During the combined period of La Nina and IOD(+) in 2017, the high SST and SSH decreased. Meanwhile, during the combined effects of La Nina and IOD(-) in 2016, temperatures and SSH began to increase from May 2016 to January 2017 and then began to decrease. During, the same period in 2022, temperatures and SSH tend to be stable from September to December.

**Keywords:** Banda Sea, ENSO, IOD, CROCO Model, Sea Water Variability

## Double-difference earthquake relocation, the source mechanism analysis using moment tensor inversion, and the correlation of Vp/Vs variation in Central Sulawesi using BMKG waveform data

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### Abstract

Central Sulawesi has relatively high seismic rates and many devastating earthquakes have occurred. Generally, Central Sulawesi could be divided into Western Sulawesi Province. The border of Western and Northern Sulawesi province is a particularly interesting area because 2019 through 2022 had low seismicity, while 2023 saw two earthquakes in close proximity, namely, the 2023 Sigi earthquake (MLv 5.3) and the Palu earthquake (M 5.1). This study aims to analyze the pattern of seismic distribution using HypoDD, analyze earthquake sources using the MTTime program, and infer the physical properties of subsurface materials using the Vp/Vs ratio. The earthquake data used arrival times from (BMKG) of the Indonesia earthquake network during the period January 2019-August 2023 with a minimum magnitude value of Mw 3.0 and a maximum depth of 100 km at the boundaries of 0.95°S – 1.43°S and 120.06°E – 120.62°E. Overall, the seismicity from 2019 to 2022 shows the level of seismicity in the study area, the southeast tends to have more active seismicity than the northwest. The inversion result for M>4.5 earthquakes showed a normal fault. These earthquakes were probably generated by locally reactivated faults. The average Vp/Vs ratio value was found to be 1.72. The maximum and minimum value of the Vp/Vs ratio was found to be 2.03 and 1.53.

Keywords: Relocation, Moment Tensor Inversion, Vp/Vs ratio, Central Sulawesi



## Seismic Hazard Identification around Surabaya City, East Java Indonesia: A Preliminary Result Based on the June 2023 Mojokerto Earthquake

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### Abstract

A felt earthquake occurred in the Mojokerto area of East Java (Indonesia) with a magnitude of M 4.4. The area has a low level of seismicity according to a recent earthquake catalog. In this study, we conducted a study to determine the direction of fault movement in the area. The moment tensor inversion results show the Strike/Dip/Rake values in each nodal plane are 257/88/4 and 167/86/175. To determine the direction of fault movement, we prefer to strike 167 degrees for this earthquake, following the direction of deformation around the area from the northeast of Java Island. From the results of the moment tensor solution and the history of seismicity that has occurred in the area around Surabaya, it can be shown that the city of Surabaya is a city that is close to seismic activity, although it tends to have little activity it needs to be considered considering that Surabaya is one of the cities with the highest population density in Indonesia. Further research is needed related to disaster vulnerability around the city of Surabaya. From the results of the source mechanism and seismicity in the Surabaya area, it can be concluded that the Surabaya area has a risk of disaster, there is a need for further research that discusses disaster in the Surabaya area, from other methods. Our study is necessary for further discussion about the possibility of disasters in the Surabaya area..

**Keywords:** Moment tensor, Surabaya, Earthquake, Source Analysis

## Room E

# A Comprehensive Review of Beef Jerky Products and the Associated Effects and Changes

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### Abstract

Dried meat preservation is crucial in combating global food scarcity and offers long shelf life, flavor, and health benefits. Global demand for processed beef products is expanding as a result of rapid urbanization, rising living standards, and changing lifestyles. Processed meat products provide meat customers with tasty and easy dishes. Beef jerky, biltong, cured ham, and pastirma are examples of air-dried meat products that are most found these days. This paper aims to review the literature on manufacturing conditions, biochemical changes, and sensory qualities of beef jerky. The sensory properties of beef jerky are also reviewed, emphasizing texture and market preference. Understanding the impact of microbial enzymes and microorganisms on flavor preservation and addressing customer preferences and health concerns is essential for ensuring the safety of beef jerky products. Future research should focus on improving beef jerky production efficiency to provide a safer range of products.

**Keywords:** Beef jerky, health benefits, sensory and functional attributes, safety, biochemical and nutritional compositions

## Microbial Safety Evaluation of Commercial Indonesian Traditional Fermented Shrimp Paste (*Terasi*) from West Java

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### Abstract

One of the traditional seasonings that are popularly used in various dishes in Indonesia is fermented shrimp paste or *terasi*. The fermentation process of shrimp paste is natural without adding a starter. That process makes the microbial conditions in the fermented shrimp paste is variety and affects the taste of the shrimp paste. The traditional process of making fermented shrimp paste requires more attention to food safety, especially on the potential for pathogenic microbial contamination in the product. It is important to ensure that the shrimp paste on the market is safe for consumption. This study conducted a microbial contamination test on fermented shrimp paste products originating from West Java. Fermented shrimp paste samples were obtained from e-commerce from four cities/regencies in West Java (Cirebon, Indramayu, Pangandaran, and Garut). Two samples of fermented shrimp paste product were taken from each region, with eight samples tested (AB, AC, BD, BE, CF, CG, DH, and DI). The fermented shrimp paste samples obtained were tested in the laboratory with several parameters: Total Plate Count (TPC), *Escherichia coli*, and *Salmonella*. The analysis results obtained are compared with the shrimp paste quality requirements according to the SNI 2716: 2016 standard of fermented shrimp paste (*terasi*).

**Keywords:** fermented shrimp paste, microbial pathogen, *E. coli*, *Salmonella*

## The Potential of Endog Lewo as a Snack to Aid Weight Loss

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### Abstract

Snacks are popular foods due to their practical and satisfying nature. Currently, the snack trend has shifted towards functional foods with health benefits. One of these functional components is resistant starch, which resists digestion by digestive enzymes and gastric acid. Resistant starch has the ability to reduce glycemic and insulin responses, thereby lowering glucose absorption in the blood. In Garut Regency, Indonesia, there is a much-loved snack called "Camilan Endog Lewo." This snack is made from cassava and tapioca flour, providing a crunchy texture due to the high content of amylopectin in cassava starch. This makes the Camilan Endog Lewo difficult to digest, and it has the potential to prevent diabetes and aid in weight loss. Such functional snacks are a healthier choice for health-conscious communities.

**Keywords:** *snacks, resistant starch, cassava*

## Development of ready-to-serve breadfruit cream soup for the elderly

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### Abstract

The number of elderly people in 2022 is 10.48% of the total population in Indonesia. The health condition of the elderly is determined by the quality and quantity of nutritional intake. To obtain sufficient nutritional intake, commodities are needed that meet the nutritional needs of the elderly. One of the commodities that is rich in nutrition for the elderly is breadfruit (*Artocarpus altilis*). Breadfruit cream is a processed product that is practical for the elderly. The purpose of this study was to make a ready-to-serve breadfruit cream soup for the elderly which is practical in serving and has nutritional content. The method used is trial and error to determine the formulation of breadfruit cream soup. Furthermore, the calculation of nutrient content in the breadfruit cream soup. The results of the study obtained a formula with energy content 106 KCal. This energy content fulfills the 0,06% nutritional adequacy of the elderly.

**Keywords:** breadfruit, breadfruit cream soup, energy content breadfruit cream soup.

## Effects of Suji Leaf Flour Addition on Physical Characteristics of Free Gluten Cookies

Naufal Permata Anugrah, *Rahayu Sukma, Nadhifatun Niza, Marita Ester Christiana, Vionita, and Rina Rismaya\**

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### Abstract

Today's modern society is increasingly concerned about the food consumed. Cookies, which are generally made from wheat, are now starting to be developed into non-gluten products from local flour which are considered healthier. This study aims to determine the effect of adding suji leaf flour on the physical characteristics of cookies. The method used in this study was a completely randomized design with different concentrations of suji leaf powder, namely 0%, 2%, 4%, 6%, 8%. The physical parameters evaluated were texture (hardness) and colour ( $L^*$ ,  $a^*$ ,  $b^*$ , and hue). The results showed that the concentration of the addition of suji leaf powder significantly affected the increase in hardness and  $a^*$  values, and decreased the brightness of  $L^*$ ,  $b^*$  and hue. In conclusion, the addition of suji leaf flour to the cookie formula provides new insights for developing healthier cookies from local source ingredients.

**Keywords:** cookies, free gluten, healthy cookies, local ingredients, suji flour

## POTENTIAL OF SACHA INCHI NUT OIL (*Plukenetia volubilis* L.) AS A HIGH NUTRITIONAL FOOD INGREDIENT

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### ABSTRACT

Sacha inchi (*Plukenetia volubilis* L.) is a plant that grows widely in the Amazon tropical forests and in the highlands of Peru and is in the Euphorbiaceae family. Currently sacha inchi nuts have been cultivated in China, Malaysia, Thailand and recently in Indonesia. Sacha inchi beans have such great nutritional potential that in 2016 these beans were named a "Super Food" by the World Food Organization (FAO). The purpose of this paper is to determine the nutritional potential of sacha inchi oil as a food ingredient and its health benefits. Sacha inchi contains many nutrients that are good for health such as monounsaturated fatty acids (MUFA) and polyunsaturated fatty acids (PUFA) consisting of omega 3, omega 6 and omega 9. Apart from that, it also contains antioxidant compounds such as vitamin E, carotenoids and phenolic acids which are also very beneficial for health.

**Keyword:** *Sacha Inchi Nut, Nutrition, MUFA, PUFA, Plukenetia volubilis L.*

## Room F

# Application of Cheng's Fuzzy Time Series in World Crude Oil Price Prediction

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### Abstract

Fuzzy time series is a new concept that can be used to predict an event using historical data. Historical data is processed using the principles and logic of fuzzy sets. The main objective of this study is to predict world oil prices. The data used was from 3 January 2022 to 30 June 2023. This article discusses Cheng's Fuzzy Time Series application. Determining the number of fuzzy class intervals uses 3 approaches, namely using the Sturges formula, average-based and partial frequency density. The 3 approaches used will be compared. Fuzzy Time Series with the Sturges formula produces a MAPE of 10.54%. Average-based Fuzzy Time Series produces a MAPE of 7.64%. Partial Frequency Density Fuzzy Time Series produces a MAPE of 8.09%. The results of this study state that Chen's Average based Fuzzy Time Series has the best accuracy in forecasting world oil price.

**Keywords:** Average-based, fuzzy time series, partial frequency density, Sturges, world crude oil.



## Classification of The Human Development Index in Kalimantan using Random Forest Method

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<sup>1</sup>Mulawarman University, Statistics Program, 75123, Samarinda, East Kalimantan, Indonesia

### Abstract

Random Forest is an ensemble classifier in machine learning algorithm. The ensemble classifier aimed to improve model accuracy and classification performance. Based on accuracy measure, Random Forest show the best performance with existing ensemble classifier like Support Vector Machine (SVM) and AdaBoost. Hence, this research will classify Human Development Index in Kalimantan use Random Forest classifier. The predictor variables of classification are average length of schooling, adjusted per capita additions, life expectancy, and length of school expectations. The Random Forest showed that the number of trees selected was 500, the  $m$  being tried was 2, and *OOB* estimate of error rate was 12,82%. Adjusted per capita additions was the most influential variable in the increase of Human Development Index with an impotence of 9,25%. The Accuracy of classification was 79%.

**Keywords:** Random forest, ensemble classifier, human development index, accuracy.

## The Impact of Quizlet on the Transferability of Vocabulary in English as a Foreign Language (EFL) Learners: Student Perspectives

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### Abstract

Developing English vocabulary proficiency is vital for students studying English, particularly those in the Mechanical Engineering Department. Proficiency in vocabulary is a crucial skill for engineering students as it facilitates comprehension of engineering manuals and other literature predominantly composed in English. The efficacy of the classical method in enhancing vocabulary proficiency leads to the development of an Android-based Quizlet application as a potential solution to address this issue. This study aims to examine students' perceptions regarding the effectiveness of Quizlet as a self-study tool for enhancing their proficiency in Engineering English vocabulary. The research utilized a quantitative descriptive methodology. The study employed questionnaires administered through Google Forms as the primary instruments. These questionnaires were distributed to twenty-five students enrolled in the Mechanical Engineering program at Banjarmasin State Polytechnic. The present study employed a descriptive approach to analyze the data, utilizing the Likert scale as a measurement tool. According to the study's findings, it has been established that most students exhibit a favorable reaction toward using the Quizlet application. Approximately 48.7% of the respondents' answers agreed with each posed question, while a mere 1.4% expressed a strong disagreement. The findings indicate that using the Quizlet application as a learning tool on the Android platform can enhance vocabulary retention. Hence, it is imperative to undergo a paradigmatic transformation in the instructional methods employed for students, considering the factor of learning interaction.

**Keywords:** learning media, quizlet, student perspectives, transferability vocabulary

## Automatic Presence Design in Virtual Class Using Deep Learning

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### Abstract

The Universitas Terbuka is a pioneer in distance learning, it is required to always innovate, especially in the mode of learning. There are many learning modes that have been developed by the Universitas Terbuka, one of which is learning through virtual classes or what is known as web tutorials. In this virtual class the tutor as a teacher provides direction and assistance to students as participants. Tutor and student attendance can be written directly by the tutor or through the attendance link, this tends to have a lack of human error, either the tutor forgets to write down the participants who were present or the attendance link filled in by participants who were not present, because the link can be accessed by anyone. Based on this, we try to design an automatic presence that is carried out in a virtual class. Through this attendance, it is hoped that tutors and students can fill in attendance just by showing their faces to the camera while in virtual class on going. The method used to detect the faces of tutors and students is the deep learning method, because facial recognition is carried out in real time for all participants who present in the virtual class. The data used is facial data of students and tutors, which are processed by digital image processing. Further learning and training will be carried out using deep learning method. The research design result database, user interface, and learning engine. The results of database testing show that every table in the database is normal and there is a logical relationship between tables. The user interface test results are proven to be able to accommodate the database and engine display deep learning method. The results of the learning engine show the creation of a deep learning method architecture in accordance with the needs of face recognition in the virtual class.

**Keywords:** virtual class, synchronous, face recognition, deep learning.

## Unveiling the Potential of Artificial Intelligence in Digital Marketing for Universitas Terbuka

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### Abstract

The rapid advancement of digital technology and artificial intelligence (AI) moving at an incredibly fast pace. AI have revolutionized various industries and the field of marketing is no exception. This study aim to explore the potential advantages of utilizing AI in the digital marketing strategies of Universitas Terbuka. The study explores the personalization, predictive analytics, sentiment analysis, segmentation and targeting using AI in digital marketing of Universitas Terbuka. Universitas Terbuka can gain valuable insights into student preferences, behaviours, trends to create digital marketing strategies efficiently. Based on the trends in Google search engine over a year, the peak of searched the most for Universitas Terbuka on Google were North Kalimantan, Bengkulu, Bangka Belitung, Papua, and East Kalimantan. The cities that searched the most for Universitas Terbuka on Google were Bontang, Tarakan, Pangkal Pinang, Cibinong, and Balikpapan. Embracing AI-driven approaches can enhance student engagement, improve marketing effectiveness, and ultimately fulfill the university's mission of providing accessible and high quality education to learners from all walks of life.

**Keywords:** artificial intelligence, digital marketing, Universitas Terbuk

## Determinants of Face-to-Face/ Webinar Tutorial Class Scheduling at Universitas Terbuka

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### Abstract

Scheduling of courses is a highly important activity for face-to-face or webinar tutorials at the Universitas Terbuka. The process of face-to-face or webinar tutorials is conducted by students who have registered and undergone the course scheduling process for these tutorials. The scheduling must be designed to facilitate the interests of the students and maximize the capacity of tutors to conduct the courses. If certain scheduling constraints are not considered properly, it can lead to difficulties in course scheduling, schedule conflicts, and the late issuance of class permits. Scheduling issues at the Universitas Terbuka can be minimized through accurate scheduling calculations that consider all aspects related to the teaching and learning activities at the Universitas Terbuka. The complexity of scheduling issues serves as a rationale for seeking the determinants of course scheduling for face-to-face or webinar tutorials at the Universitas Terbuka. The research conducted is empirical in nature. Scheduling determinants are identified through interviews, and the impact of these factors is further examined using questionnaires. The research results indicate that course scheduling is influenced by student registration and payment, tutors, scheduling staff, and application.

**Keywords:** face-to-face tutorial, webinar tutorial, class scheduling.

## Clustering Sukuk Using the K-Means Algorithm for Allocation of Investors Based on Investment Risk Profile

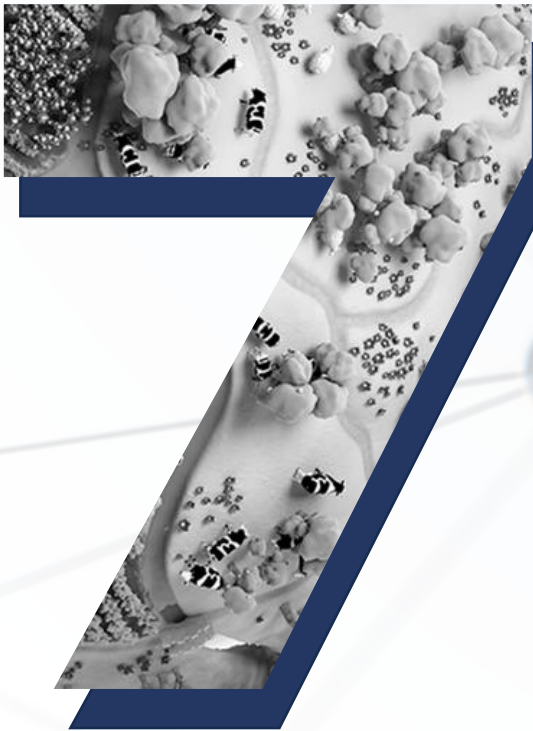
Fanny Novika, Sri Rahayu<sup>2</sup>

<sup>1,2</sup> Trisakti School of Insurance, Actuary, 13210, East Jakarta, DKI Jakarta, Indonesia

### Abstract

The number of capital market investors has increased by 33.53% from 7,489,337 at the end of 2021 to 10,000,628 on 3 November 2022. One of the most popular Islamic capital markets today is sukuk with high yields, lower taxes and short returns. Investors consider four main factors that affect the issuance of sukuk, namely the type of sharia contract, yield, effective term, and nominal value of the sukuk. Investors will find it very difficult to decide on their investment because they will face a lot of data and variables. The solution to this problem can be done by perform multivariate analysis by grouping sukuk based on the investor's risk profile, namely defensive, conservative, balanced, moderately aggressive, aggressive using the k-means machine learning compile with phyton. Sukuk data used are from Financial Services Authority and PT Kustodian Sentral Efek Indonesia. From the results, 3 clusters were obtained cluster 1 (65 sukuk), cluster 2 (68 sukuk) and cluster 3 (20 sukuk). The results investor risk profile classification are the defensive and conservative types investor can invest in cluster 3, the balanced type investor can invest in cluster 2, the moderately aggressive and aggressive investor can invest in cluster 1.

**Keywords:** Clustering Analysis, Investment Risk Profile, K-Means Algorithm, Sukuk



# ABSTRACT OF ONLINE PARALEL SESSION



## Room 1

### Poultry Feed Fortified with Moringa Leaves and Tumeric Leaves to Produce Functional Eggs : A review

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#### Abstract

The number of human beings on world is growing every day. Human diets often contain considerably fewer daily consumption of protein than is recommended. Due to the limited supply and expensive price of chicken feeds, which are responsible for between 60 and 80 percent of the total cost of poultry products, the poultry industry has experienced problems, particularly in the tropics and in developing countries. This is a result of both the reasonably low price and the demand for these high-quality and secure products on the part of the buyer. One food that's high in protein are eggs. Egg protein contains a high degree of digestibility compared to other protein sources, which means that every gram that is absorbed will be perfectly digested through the body. Increasing the intrinsic antioxidant content through dietary insertion of natural antioxidants, such as feed fortification with a combination of moringa leaves and turmeric leaves, is a typical technique to counteract these adverse effects. Moringa oleifera is now mostly used on farm animals to improve their productivity and well-being. considering their well-established, beneficial effects on hen health and egg quality, that resulted in the production of eggs that were higher in carotene and lower in cholesterol than the control eggs, moringa leaves are commonly used as functional components for the production of poultry feed. The Zingiberaceae family contains the yellow spice turmeric (genus: Curcuma), a plant which has many medical use. Many research investigations have shown the medicinal benefits of turmeric, especially its antioxidant capabilities. The purpose of this review was to analyze the antioxidant activity and cholesterol-lowering characteristics of functional eggs prepared from enriched turmeric and moringa leaves.



## Unleashing the Power of Digital Farming: A Young Farmer Perspective on Sustainability Value

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### Abstract

Agricultural innovation is a problem that needs to find a solution, and this can be started with the youth farmer initiative. The growth of digital technologies has opened up new opportunities within the agricultural sector, enabling the integration of information and communication technologies into agricultural practices. This study aims to determine the perceptions of young farmers towards integrating digital technology in various aspects of farming from upstream to downstream, influencing the formation of sustainability values. This research uses the basic method of a case study. The location determination was carried out purposively, with 80 respondents. The data analysis method used the structural model equation and used the partial least squares. Using the theory of Innovation Diffusion Theory, the results show that knowledge, decision, implementation, and confirmation from young farmers have a significant and positive effect on the value of sustainability. Meanwhile, persuasion has no significant effect on the value of sustainability.

**Keywords:** digital farming, innovation diffusion theory, persuasion problem, technology adoption, the young farmer

## Risk handling strategy for vegetable business in P2L Ngongak Tanduran

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<sup>2</sup>Muhammadiyah University of Surakarta, Management Departement, 57162, Sukoharjo, Central Java, Indonesia

### Abstract

Sustainable Food Yard or P2L is one of the programs from the Madiun City Food Security Service for residents of Madiun City to take advantage of their vacant land to improve the post-pandemic community economy. In 2022, all financing will be funded by DKPP, but in 2023, P2L will start using its own capital. In the management of a business certainly can not be separated from the risk. Identified risks are caused by five things, namely man, machine, money, material, and method. The highest risk experienced by P2L Ngongak Tanduran is that they do not have contracts with workers, lack of working capital, and unskilled workers. In dealing with these risks, a strategy is formulated that will be processed using the Analytical Hierarchy Process (AHP) method. The result is strategies formulated to minimize the risks that occur at P2L Ngongak Tanduran include training for workers, establishing communication with third parties, scheduling, and establishing Standard Operational Processes

**Keywords:** Analytical Hierarchy Process, business, entrepreneurship, risk, strate

## Shelf Oceanography and Small Pelagic Fisheries in the Java Sea

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### Abstract

The optimization of small pelagic fisheries in the Java Sea could be enhanced by providing oceanographic information for analysis and determining potential fishing ground. This study aims to investigate shelf oceanographic factors on influencing small pelagic fisheries using multi-datasets of sea surface temperature and surface salinity CROCO ocean model output (2010-2020), distribution of light-fishing vessel position of VIIRS satellite, and small pelagic fish catches landing data (*Decapterus* spp. and *Amblygaster sirm*) at Pekalongan Fishing Port, Central Java. The results showed that peak of fishing season for *Amblygaster sirm* occurs during the northwest monsoon period, in which the eastward monsoon current brings warmer (~28.5 °C) and fresher (~32.4 psu) water into the Java Sea. In contrast, peak of fishing season for *Decapterus* spp. is associated with cooler (<28.5 °C) and saltier (>33 psu) water supplied by the westward monsoon current during the southeast monsoon period. Alternating intensification monsoonal current along the northern Java and the along the southern Kalimantan coast during different monsoon period, is associated with higher abundance of neritic and oceanic small pelagic fishes, respectively.

**Keywords:** Java Sea, oceanography, CROCO model, VBD data, fish landing data, small pelagic fish.

## Length-Weight Relationship and Condition Factors of Keudawah (*Rasbora* sp., Family: Danionidae) in the Krueng Lanca Flows of Nagan Raya Regency, Aceh, Indonesia

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### Abstract

*Keudawah* (*Rasbora* sp) is a native species found in freshwater, especially Krueng Lanca of Aceh Province, Indonesia. Length-Weight Relationships (L-WR) and condition factor studies are very important in the field of fisheries, as they offer invaluable insights into fish growth, general welfare, and fitness, especially in freshwater habitats. This study aims to evaluate length-weight relationship and condition factor of the fish which can be used to establish a monitoring and management systems for this species. Sampling was purposively carried out monthly (January - June 2023) at six stations using gill nets (mesh sizes: 0.5, 1.0, and 1.5 inches) and cast nets (diameter: 6 m, mesh size: 0.5 inches). A total of 1118 fish individuals (632 males and 486 females) were collected from Krueng Lanca, Aceh Province with a length range of 34-112 mm (males) and 46-135 mm (females). The findings showed that *keudawah* had negative allometric growth (both males and females), with  $b$  values ranging from 2.307 to 2.962 (for males) and 1.731 to 2.669 (for females). The condition factor (Kn) fluctuated between 0.84 and 0.93 (for males) and 0.82 to 0.94 (for females), indicating good conditions for this species.

**Keywords:** native spesies, L-W Relationship, fisheries management

## Bioaccumulation of heavy Metals (Cd, Cu) in the flesh of green mussel (*Perna viridis*) in Banten and Jakarta Bays

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### Abstract

Banten Bay is one of the waters that is quite busy with various activities, including fisheries, ports, settlements and industry. In addition, this area is also known for its marine products such as green mussel (*Perna viridis*). The study was conducted in March-September 2019 in Banten Bay and Jakarta Bay, aiming to estimate the bioaccumulation of heavy metals (Cd and Cu) in green mussel flesh in both waters, using the AAS method. According to study, concentration of Cd and Cu in green mussel flesh both in Banten Bay and Jakarta Bay were still below the quality standard stipulated by SNI 2009, Regulation of BPOM No. 5 of 2018, and Health Ministry Decree of the Republic of Indonesia No. 03725 of 1989. The safety level consumption for the green mussels in Banten Bay and Jakarta Bay were 0.91 kg/week and 0.51 kg/week (for children) and 3.04 kg/week and 1.72 kg/week (for adults), respectively. Green mussel found in Banten Bay and Jakarta Bay was still suitable for consumption as long as it does not exceed the established limit.

**Keywords:** Bioaccumulation, heavy metal, *Perna viridis*

## Potential and strategy for tourism development of Panjang and Lima Islands in Banten Bay

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### Abstract

Panjang Island and Lima Island as island tourism areas with coastal and marine resources. Tourism resources must be well developed because they are a community income source. This study aims to analyze, map the island's resource potential and design alternative development strategies in Banten Bay. The research was conducted from October 2022 to December 2022. Data collection was carried out using field observations and interviews with questionnaires. Data analysis includes regional carrying capacity (DDK), Willingness to pay (WTP), Travel Cost Method (TCM), and SWOT analysis. The results showed that DDK Panjang Island and Lima Island obtained 283 people/day and 116 people/day. The average WTP of Panjang Island and Lima Island is Rp. 5,000, and Rp. 5,277.78. The average TCM tourist visitor to Panjang Island and Lima Island earns Rp. 110,500, and Rp. 102,987. The alternative strategy for Long Island is to provide diving and snorkelling services for marine tourism and underwater archaeology and use the beaches around Panjang Island as a tourist attraction. While the alternative strategy for Pulau Lima is to utilize the ecosystem around Lima Island to become a tourist attraction, arrange facilities and provide photo spots around Lima Island.

**Keywords:** carrying capacity, potential, island, strategy

## Effect of Probiotics Addition on Artificial Feed for catfish Growth

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### Abstract

The research aimed to investigate the impact of probiotics supplementation in artificial feed on the growth of catfish (*Clarias gariepinus*). Catfish farming is a vital component of aquaculture, and optimizing feed formulations can enhance both the economic and environmental sustainability of the industry. In this study, probiotics were incorporated into the catfish feed to assess their potential benefits on growth performance. A fully randomized design was employed, encompassing four distinct treatment groups denoted as follows: P0, representing the control group without any treatment; P1, involving the incorporation of 2 cc/kg of probiotic into the feed; P2, entailing the inclusion of 4 cc/kg of probiotic in the feed; and P3, comprising the use of 6 cc/kg of probiotic in the feed. Data analysis was conducted using analysis of variance with a confidence level set at 5%. The growth parameters, including weight gain, length increase, and feed conversion ratio (FCR), were monitored over 2 months. The results revealed a significant improvement in the growth performance of catfish in the probiotics-supplemented group compared to the control group. Catfish fed with probiotics exhibited a higher average weight gain and increased length, indicating better growth. Moreover, the FCR was notably improved in the probiotics-treated group, suggesting enhanced feed utilization efficiency. This study highlights the positive effects of probiotics supplementation in artificial feed on the growth of catfish.

**Keywords:** Probiotic, Fish farming, Catfish, Composition, Aquaculture

## Room 2

### Analyzing income from the processing of gambier liquid waste as a natural dye in the jumputan cloth business in Toman Village, Tripe Toman District, Musi Banyuasin Regency

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#### Abstract

Toman Village is the only village that produces gambier plants in South Sumatra Province and produces liquid waste which is used as a natural dye from the typical Musi Banyuasin jumputan cloth. The jumputan cloth business in Toman Village is a relatively new business, even though the Gambir jumputan business is currently starting to increase and the demand for it has increased quite a bit from year to year. The purpose of this study was to analyze the income from processing gambier liquid waste as a natural dye in the jumputan cloth business in Toman Village, Babat Toman District, Musi Banyuasin Regency. The research method used is survey method. The respondents of this research were four jumputan craftsmen who used saturated sampling technique as a sampling method. The results of this study are the average jumputan business income of Rp. 115,898,400 per year or Rp. 9,658,200 per month. Based on the results of the analysis of legal aspects, technical and technological aspects, the environment for the four jumputan businesses is appropriate because the legal aspects already have business licenses, the market and marketing aspects have gone well because of increased production from the previous year, from the technical and technology has no production constraints, and from the environmental aspect it has also shown that this business is feasible to run because it does not leave waste that can damage the environmental ecosystem, both air, air and soil, as well as from the aspect of the financial business jumputan in Toman Village produces Net B /C of 1.18-1.64. Factors that can affect the sustainability of the jumputan business from a financial perspective are the operational and production costs of jumputan.

**Keywords:** Income, natural dyes, jumputan, profits



## Entrepreneurship For Making Agro Fertilizers In Solouro Village, Solokuro District, Lamongan Regency, East Java

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### Abstract

This study aims to determine the use of Agro fertilizers in adding soil nutrients and business prospects for Agro fertilizers. This study was carried out directly at the production site using interview, observation and documentation methods. The results of the study show that agro fertilizers are produced using goat livestock waste raw materials which are processed using certain techniques to produce fertilizer that is smooth and easy to apply. Agro fertilizers are also produced continuously for application on own land as a substitute for synthetic chemical fertilizers. The observation result show that the soil that is given ogro plant fertilizer grow well. To expand the benefits of agro fertilizers have packaged agro fertilizers into 3 kg and 6 kg packages which are sold to consumers around the production site with a selling price of 12,000 and 20,000 rupiah.

**Keywords:** entrepreneurship, agro fertilizer, benefits.

## Evaluation of Fish Consumption Conditions in Bekasi Regency Communities and Improvement Strategies

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### Abstract

The awareness of the people of Bekasi to consume fish is still very low. Even though fish is one of the cheap foods, easy to find, and has a high nutritional content. The purpose of this study was to analyze fish consumption patterns, analyze respondents' perceptions and preferences for fish and improve fish consumption strategies. The study was conducted by analyzing primary data regarding fish consumption patterns which are influenced by perceptions and preferences for fish products through direct interviews with 110 household members. The methods used in this research are descriptive analysis, logit analysis, quantitative analysis using Chi-square test, SWOT analysis and Analytical Hierarchy Process (AHP) analysis. Referring to the results found in this study, strategies to increase fish consumption that need to be in the Bekasi Regency area include: 1) Increasing knowledge to community groups about fishery products about good GMP handling and processing through socialization or training, 2) Implementing a system quality assurance of safe and healthy fishery products through hygienic processing methods in accordance with GMP, SSOP, 3) Promotion of more efficient and effective use of production and marketing technology through existing promotional media, 4) Training and education of fishermen, cultivators and Fish-processed MSME actors, 5) Foster technological innovation of processed fishery products, especially for products that do not have economic value.

**Keywords:** improved strategies, logit, fish consumption, bekasi district

## Fruit Consumption Improvement as an Effort to Sustainable Lifestyle

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### Abstract

The implementation of healthy diets is a part sustainable lifestyle. As a modern lifestyle spreads, people often neglect their healthy diet. The World Health Organization (WHO) generally recommends 150 grams of fruit per capita per day (equivalent to 3 medium-sized Ambon bananas) for a healthy diet. However, data from Statistics Indonesia (2021) shows that the average Indonesian fruit consumption reaches only 81.14 grams per capita per day, which only fulfill 54.09% of the minimum nutritional adequacy limit of the WHO. This study aims to analyze various factors shaping Indonesia's fruit consumption pattern. The research was conducted through a comprehensive literature study using the Bibliometric approach, which further analyzes descriptively. Further, questionnaires capturing Indonesia's current fruit consumption patterns were distributed to more than 100 respondents. Results show that Indonesian fruit consumption is still below the WHO recommendation. Eating fruit more than five times a week is categorized as very low, namely 26%. Actually, from the aspect of knowledge and attitude towards the importance of fruit consumption, it shows quite high results (> 80 %).

The efforts and roles of the entire community involved in increasing fruit consumption to improve overall sustainable living are urgently needed.

**Keywords:** bibliometric, fruit consumption, healthy diet

## Green Entrepreneurship Incubation Model for Students at Trilogy University Business Incubator: A Literature Review

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### Abstract

The rise of green entrepreneurship represents a transformative shift towards sustainable business practices, and institutions of higher learning play a pivotal role in this transition. This literature study delves into the intricacies of incubation models that foster green entrepreneurship, focusing on their applicability to Universitas Trilogi's business incubator. Drawing from a comprehensive review of global practices, this study seeks to understand the symbiosis between academic settings and sustainable business incubation, while also highlighting the nuances and challenges specific to Universitas Trilogi. The culmination of this exploration offers insights for institutions aiming to harness the potential of green entrepreneurship within their ecosystems.

**Keywords:** Academic settings, Business incubation, Green entrepreneurship, Sustainable practices, Universitas Trilogi.

## Business Model and Feasibility Study Analysis of a Low Glycemic Index Rice – Parboiled Rice

Agung Grandika Radinata<sup>1</sup>, Venty Fitriany Nurunisa<sup>2\*</sup>

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### Abstract

Diabetes mellitus is caused by low insulin production or reduced effectiveness of insulin use in the glucose metabolism process, making it difficult for glucose to be broken down optimally. The spread of diabetes mellitus has now reached the epidemic stage in several developing countries, including Indonesia. Indonesia is one of the countries in Southeast Asia that is experiencing a high increase in the number of people with diabetes. This cannot be separated from the habit of Indonesian people who make rice as a staple food. In terms of tradition, it will be very difficult to change Indonesian's habit of eating rice. However, from the aspect of processing technology, rice can still be a healthy and low-sugar consumption ingredient when the rice consumed undergoes a pre-cooking process or can be called Parboiled Rice. Parboiled Rice is rice formulated with a pre-cooked system that produces rice with a low glycemic index. Thus, this research aims to analyze the business model of parboiled rice - low glycemic index rice, and the feasibility study of the parboiled rice business. The research is conducted by using the nine elements of Business Model Canvas, and calculate the NVP, IRR and BEP of parboiled rice business to analyze the financial feasibility study. The results shows that parboiled rice is a potential product to be developed since the market in Indonesia especially is huge. Targeted potential customers are not only people with Diabetic Mellitus, but also people which eager to have a healthy lifestyle. With a strong partnership built with farmers, and government, the parboiled rice business is feasible to be conducted. This also strengthens by the value of NVP, IRR, BEP and PP which reaches 599.200, 1,3%, 517.000, and 1,2 years.

**Keywords:** Diabetes Melitus, Rice, Parboiled Rice, Model business

## Visual and Pressure Signal Investigations on Bubble Produced by Ejector Bubble Generator

Eli Novita Sari<sup>1</sup>, Anggra Fiveriati<sup>1</sup>, Nanda Rusti<sup>2</sup>, Jangka Rulianto<sup>1</sup>, and IGNB. Catrawedarma<sup>1\*</sup>

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### Abstract

This study aims to investigate the pattern of bubble flow coming out of the ejector bubble generator (EBG). The flow pattern was captured using a high-speed camera. The pressure signal on the bubble generator outlet was also recorded using a differential pressure transducer, which was then processed to obtain a probability density function (PDF) and Power Spectrum Density (PSD). It indicates the flow pattern flowing at the bubble generator outlet. The results of this study occurred a time delay in the production of bubbles coming out of the EBG. The greater the air flow rate, the lower the time delay for bubble production. The bubble flow region produced by EBG was classified into the entrance, developed, and fully developed regions. In the fully developed region, large and small bubbles are separated. The greater the air flow rate, the higher the two-phase flow pressure at the EBG outlet and the PDF has one peak with a skewness value that tends to be positive (shift to the right side). The maximum value of the spectrum is at a low frequency (<100Hz) with a low magnitude as an indicator of the bubble flow pattern in the EBG outlet.

**Keywords:** Ejector bubble generator, the time delay of bubble production, PDF, PSD

## Room 3

### Application of Endophytic Bacteria using In vitro Technique to Increase Vigour of Shallots (*Allium cepa* L.) based on Inoculation Time

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#### Abstract

Shallot is one of the important horticultural commodities in Indonesia. Besides having many benefits, shallot is also the main ingredient in various traditional dishes in Indonesia. A significant increase in healthy shallot production is needed to meet the increasing demand every year. The aimed of this study was to obtain the best strain endophytic bacteria and inoculation time for increasing shallot vigour through in vitro. This study used a factorial completely randomized design with two factors, the type of bacteria and the time of inoculation which was divided into 3 stages. The first stage consisted of three collections of bacteria (GO53, IB15, S12) with 12 and 24 hours of inoculation. The second stage consisted of two collections bacteria (GO53, IB15) with 4 and 6 hours of inoculation. The third stage consisted of one collection bacteria (GO53) and 4 bacterial strains isolated from shallot (T4(2), T5, T8(1), T8(2)) with 2 and 4 hours of inoculation. The results showed that the best types of endophytic bacteria to increase vigour were GO53 and T4(2) with 2 hours of inoculation. The explants in this treatment survived the longest, had more shoots and leaves compared to the control, and induced root formation more quickly.

**Keywords:** Production, healthy, strain, shoot, induced root formation.

## Study on The Utilization of Weed Plants as Bioherbicides

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### Abstract

Weeds are plants that are detrimental to cultivated plants if they live in the same scope of life. The losses caused by weeds are that they can lead to a decrease in the production of cultivated plants both in terms of quantity and quality. Therefore weeds are considered as nuisance plants because their presence in cultivated plants is not expected. With the presence of weeds in the scope of cultivated plants, cultivated plants must compete with weeds in obtaining nutrients, absorption of water and light, growing space requirements, and being affected by allelochemical compounds produced by weeds that affect the growth of cultivated plants. Inhibition of growth can occur through the mechanism of inhibition of cytokinin synthesis, inhibition of photosynthesis and respiration processes, disruption of the process of absorption of water and nutrients. The potential of weed allelopathic compounds in inhibiting growth has been used as the basis for developing bioherbicides. The advantages of bioherbicides compared to synthetic herbicides are that they are easily degraded in the soil so that they are safer because they do not leave residues. While synthetic herbicides if used in excess can cause problems because they can reduce soil fertility, increase weed resistance to herbicides and leave residues that can be absorbed by plants and if plants are eaten by humans, they can settle in the body and cause disease. For this reason, many researchers have conducted studies to examine the potential of weeds as bioherbicides as discussed in this article.

**Keywords:** weeds, bioherbicide, allelopathic, utilization



## Indigenous Bacteria Diversity of Feed Fermented Fermetodege Based on Molecular Analysis The Next Generation Sequencing (NGS)

*Isnawati Isnawati<sup>1</sup>, and Fitriari Izzatunnisa Muhaimin<sup>2</sup>*

<sup>1,2</sup> Universitas Negeri Surabaya, Biology S1 Program, 60231, Surabaya, East Java, Country

### Abstract

The objective of this study was to reveal the diversity of indigenous bacteria in a fermented feed is called Fermetodege. Fermetodege is made from fermented water hyacinth (*Eichhornia crassipes*), corn (*Zea mays*) cobs and rice (*Oryza sativa*) bran. This mixture is rich in cellulose and a good source of cellulolytic bacterial isolates. The cellulolytic bacteria is source of cellulase enzyme. Revealing of bacterial diversity is carried out through a series of procedures which include making a fermethodege, fermenting it and taking samples in the mesophilic I, thermophilic, mesophilic II and maturing phase. The bacterial community in the feed was dominated by groups (from the most to the least), namely *Bacilli*, *Clostridia*, *Gammaproteobacteria*, *Bacteroidia*, *Negativicutes*, *Actinobacteria* and *Desulfovibrionia*, *Alfaproteobacteria* and *Coriobacteria*. Based on the NGS results, it was found that there were 9 groups of bacterial communities in the fermented feed.

**Keywords:** Feed Fermented, Cellulolytic Bacteria, Next Generation Sequencing

## Phylogenetic relationship of indigenous bacteria fermetodege based on next-generation sequencing (NGS) molecular analysis

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### Abstract

The objective of this study was to reveal the phylogenetic relationship of indigenous bacteria in a fermented feed called Fermetodege using a phylogenetic tree. Fermetodege is made from fermented water hyacinth (*Eichhornia crassipes*), corn (*Zea mays*) cobs and rice (*Oryza sativa*) bran. This mixture is rich in cellulose and a good source of cellulolytic bacterial isolates. Phylogenetic trees can provide important information, including the evolutionary processes, characteristics similarity, and their bioprosects. Several steps were conducted to investigate the phylogenetic relationship of indigenous bacteria fermetodege, including fermetodege formulation, fermenting it and sample isolation in the mesophilic I, thermophilic, mesophilic II and maturing phases. The sample was then analyzed using Next Generation Sequencing (NGS) and bioinformatic software. Based on the Unpair Group with Arithmetic Mean (UPGMA) analysis, 10 defined phylum and one undefined group were identified. Defined phylum consisted of Firmicutes, Bacteroidota, Proteobacteria, Actinobacteriota, Desulfobacteriota, Cyanobacteria, Chloroflexi, Campilobacteriota, Acidobacteriota, Synergistota and other groups. Based on the results, it was found that Proteobacteria are closely relationship to Actinobacteriota, and both are more closely related to Firmicutes than to Bacteroidota.

**Keywords:** Phylogenetic relationship, indigenous Bacteria, Next Generation sequencing

## Building the character of a community concerned with ecology through the Environmental Reforestation program in Madiun City

Agus Prasetya, Marti Winarni, and Sri Astutik Handayani

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### Abstract

Environmental damage in urban areas is getting worse due to physical development, motorcycle and car pollution and air pollution, noise pollution, garbage pollution and lack of green open space (RTH). Gap Research in this study, air pollution causes an unhealthy urban environment, emission gases from cars, motorcycles, dirty air, reduced oxygen (O<sub>2</sub>), causing hot air to lack of greenery. Reforestation (Reforestation) aims to create a healthy, pollution-free, beautiful environment, reduce the emission gas pollution of motorcycle cars which are increasing in number. The purpose of greening/reforestation in the city is for the health of city residents, because it can produce O<sub>2</sub> (Oxygen) gas. This research is a qualitative research with descriptions in the form of narratives, stories, words to the subjects studied. Methods of data collection through observation, in-depth interviews, as well as documentation, data sources obtained from primary data, namely the community, while secondary sources are environmental NGOs, students, community leaders. Data analysis using the Interactive Miles and Huberman model which includes the Data Collection, Data Reduction, Data Display, and Data Conclusion stages. The validity of the data through triangulation both method, source, time. To explore the data, the researcher used the study of L. Berger, T. Luckman's Social Construction Action theory, which is a theory that focuses on human social actions in social interaction. The results of the study show that the community construction process is needed so that social change is obtained in society, creating environmental awareness, with large trees that produce O<sub>2</sub>.

Kata Kunci : Penghijauan, Konstruksi Sosial, Pencemaran udara.

**Keywords:** Greening, Social Construction, Air Pollution.

## Room 4

# GENETIC VARIATION OF BURGO CHICKEN (*Gallus gallus*) FROM BENGKULU BASED ON DISPLACEMENT-LOOP GENES

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### Abstract

Burgo chicken is the result of a cross between red jungle chicken and jungle chicken. This study aims to reveal the genetic variation of burgo chicken (F1) using the Mitochondrial DNA D-Loop gene. Blood samples were collected (n=15) from a community of burgo chicken lovers from Bengkulu Province. Total DNA isolation followed the Dneasy® Blood and Tissue Kit procedure based on Qiagen's Spin-Column Protocol procedure. DNA replication using PCR techniques with specific primers was carried out in the Biotechnology and Genetics laboratory, Department of Biology, Faculty of Mathematics and Natural Sciences, Bengkulu University. Furthermore, PCR products were electrophoresed with 1.2% agarose gel and visualized using Gel Document System Axygen. Samples with bright DNA bands were continued during the sequencing process. The nucleotide sequence of sequencing results was analyzed using MEGA 11.0 software. The results obtained a target sequence length of 573 pb from 15 burgo chicken samples. The number of conservative sites is 569 sites, informative parsimony sites, as many as 2 sites, variations of 4 sites, 2 singleton sites, and the highest nucleotide composition on cytosine bases with an average of 32.3%, while the lowest is on guanine bases with an average of 17.5%. SNPs were found at 4 sites, namely sequence numbers 54, 86, 93 and 175. The addition of several species and family level individuals from Genbank to see their kinship resulted in a phylogeny tree using the NJ bootstrap model consisting of 3 main groups in group 1 consisting of 15 research samples, in group 2 consisting of 20 species and sub-species and group 3 consisting of the Phasainidae family outgroup. The intrapopulation genetic distance studied was 0.5%. Burgo chicken samples (n=15) showed 5 haplotypes with a haplotype diversity value of 0.7333 and a nucleotide diversity value of 0.001828.

**Keywords:** Bengkulu, Gen D-Loop, *Gallus gallus*, Mitochondrial DNA

## DNA BARCODING OF BURGO CHICKEN OF ENDEMIC BENGKULU ORIGIN BASED ON CYTOCHROME OXIDASE GENE SUB UNIT I MITOCHONDRIAL DNA

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### Abstract

Burgo chicken is one of the germplasm sources found in Bengkulu Province. However, genetic information on burgo chickens is not yet available. DNA barcoding was carried out using the Cytochrome oxidase subunit I MtDNA gene. The purpose was to obtain a DNA barcode of burgo chicken kinship with other chicken species based on the Mitochondrial DNA COI gene. Samples were obtained from the Bengkulu burgo chicken lovers community. Blood was isolated following the Dneasy® Blood and Tissue Kit protocol based on Qiagen's Spin-Column Protocol procedure. Then amplified using PCR. Then it was electrophoresed with 1.2% agarose gel. Samples with bright DNA bands proceeded to the sequencing process. Sequencing results were analyzed using MEGA 11.0. The results, the target length of the Burgo chicken band was determined in accordance with the primer design used (752 bp). SNPs were obtained at as many as 10 specific sites in Burgo chicken and had a species barcode on site 746. The intraspecies genetic distance is 0.6%, the interspecies is 1.2%, and the outgroup is 14.5%. There are 12 haplotypes from all samples. Based on the construction of the phylogeny tree, burgo chickens are closely related to red jungle chickens compared to other chicken species.

**Keywords:** Bengkulu, Burgo chicken, Cytochrome Oxidase I, Mitochondrial DNA

## Bioaccumulation of heavy Metals (Cd, Cu) in the flesh of green mussel (*Perna viridis*) in Banten and Jakarta Bays

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### Abstract

Banten Bay is one of the waters that is quite busy with various activities, including fisheries, ports, settlements and industry. In addition, this area is also known for its marine products such as green mussel (*Perna viridis*). The study was conducted in March-September 2019 in Banten Bay and Jakarta Bay, aiming to estimate the bioaccumulation of heavy metals (Cd and Cu) in green mussel flesh in both waters, using the AAS method. According to study, concentration of Cd and Cu in green mussel flesh both in Banten Bay and Jakarta Bay were still below the quality standard stipulated by SNI 2009, Regulation of BPOM No. 5 of 2018, and Health Ministry Decree of the Republic of Indonesia No. 03725 of 1989. The safety level consumption for the green mussels in Banten Bay and Jakarta Bay were 0.91 kg/week and 0.51 kg/week (for children) and 3.04 kg/week and 1.72 kg/week (for adults), respectively. Green mussel found in Banten Bay and Jakarta Bay was still suitable for consumption as long as it does not exceed the established limit.

**Keywords:** Bioaccumulation, heavy metal, *Perna viridis*

## Economic Study of Agrosilvofishery Model Of Meranti-Nanas-Catfish In Oki Regency South Sumatra, Indonesia

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### Abstract

The sustainability of peatlands required sustainable thinking to protect the existing ecosystem. One of the restoration efforts was the application agrosilvofishery model with 3R (Rewetting, Revegetation and Revitalization) on peatlands. The research objective was to examine the economic value of application agrosilvofishery model on peatlands with a combination of meranti, pineapple and catfish. The research method was purposive sampling method where the location was chosen because South Sumatra had extensive peatlands, especially in OKI Regency. The sample was farmers who have degraded peatlands where the management had not been proper and had not been used optimally and then empowerment was carried out to process the peatlands properly so as to gain profits. The results of research obtained the acceptance value of the agrosilvofishery model, namely meranti was Rp. 201,930,000/m<sup>3</sup>/10 years, an average of pineapple first harvested was Rp. 20,045,200/year, second harvested was Rp. 30,926,880/year and third harvested was Rp. 20,045,200/year, and then, the average of catfish income was Rp. 1,560,600,000/year. Financial agrosilvofishery analysis of meranti-pineapple-catfish obtained NPV of 634,462,233, IRR (+) 61%, Net B/C 8.41, Gross B/C 1.06, and PP (year) 2.33. Based on the result of research, farming with the agrosilvofishery model was feasible, and this research illustrated that in order to provide a decent life, farmers need to think about short, medium and long of businesses period.

**Keywords:** Agrosilvofishery, catfish, meranti, pineapple

## Rhizosphere fungi abundance on acid dry and tidal soils in Borneo Prima citrus fields, East Kalimantan

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### Abstract

Acid dry and Tidal land in East Kalimantan is one of the suboptimal land ecosystems, that needs to increase the quality of its fertility in order to support the production of citrus of the Borneo Prima variety. One of them with rhizosphere microbes can increase fertility and decomposition process. In addition, it can also be used to control plant diseases. The aim of the study was to determine the abundance of rhizosphere fungi on citrus trees on dry acid and tidal soils and their relationship with soil physico-chemical factors. Rhizosphere fungi was isolated from the soil around citrus plant roots, East Kalimantan were analyzed for their abundance and their correlation with soil physico-chemical factors. The results showed that found 29 rhizosphere fungi. The highest importance value index was found TR25 rhizosphere fungi isolates in the acid dry land block A and TR 17 in block B. The highest importance value index is at TR1 in block A tidal land, and TR23 in block B. Principal Component Analysis results showed that there is a strong relationship between the abundance of rhizosphere fungi and soil physico-chemistry. The highest number of rhizosphere fungal colonies was on tidal land B. The number of colonies was directly proportional to humidity

**Keywords:** Borneo Prima, Citrus, Rhizosphere fungi, acid dry and tidal soils



## The Application of Biofertilizer to Realize Sustainable Agricultural Program

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### Abstract

The agricultural sector is a force to encourage the rise in the economic level of an agricultural country, such as Indonesia. However, agricultural program which are not followed with caution may destroy the order of agrarian country. Therefore concept of sustainable agriculture was introduced and has been a commitment for many countries in the world. One of the implementation of sustainable agriculture is the use of effective and environmentally friendly fertilizer. Biofertilizer is considered as alternative of chemical fertilizer which has more advantages. Biofertilizer contains beneficial microbial consortium for plant. In addition, biofertilizer can enhance soil fertility. Many studied proved the effectiveness of bio fertilizer to increase plant yield. Nowadays, biofertilizer has widely used in Indonesia but sometime potency of laboratory tested biofertilizer can't be found in the fields. Another issue is the shelf life. This review was focused on effectiveness and shelf life of biofertilizer. In this review we tried to collect data from previous studies and arranged it into a framework that could help to overcome the constraints of biofertilizer application. The analysis was carried out with the introduction of biofertilizers, constraints in the practice of their use, and strategies to overcome these obstacles. Obstacles in the use of biofertilizers can be overcome by selecting potential microbes so that they can survive in the soil. The use of antimicrobial substances can also be done to reduce competitor microbes. The addition of organic matter can also be done to add nutrients to the soil. In addition, storage of products under customized conditions can maintain their effectiveness.

**Keywords:** biofertilizer, sustainable agriculture, microbes, soil health, crop productivity.

## Room 5

### Women's empowerment in coastal areas: waste management based on circular economy paradigm (study case on pasarán island, bandar lampung)

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#### Abstract

Coastal areas have potential resources and are projected as tourist attractions because they are the meeting point between land and sea. However, this potential is threatened by pollution and damage in coastal and marine areas originating from human activities. Marine debris causes marine pollution, damages marine ecosystems and coastal areas, and can even endanger human health. In 2021, approximately 2,864 kg of waste accumulated on Pasarán Island, of which more than 64% was residual and low-value waste. The circular economy is a new paradigm that is widely adopted in sustainability-based waste management in Indonesia. The role of the community in the implementation of the circular economy is very important, one of which is through women's empowerment. This research aims to describe the importance of women's role in waste management through empowerment schemes. This research uses a qualitative approach through observation, interviews, and literature studies to obtain information. The results showed that through the empowerment of women and the implementation of the circular economy in Pasarán Island, more than 29,000 kg of household waste could be reduced, new employment alternatives could be created, and the community in Pasarán Island increased its awareness of managing household waste.

**Keywords:** Women's Empowerment, Circular Economy, Waste Management, Pasarán Island, Coastal Area.

## Identification of flood vulnerability using the topographic wetness index method in Pantai Labu Baru village, Deli Serdang, North Sumatera

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<sup>2</sup>Universitas Darma Agung, Civil Engineering, 20152, Medan, North Sumatera, Indonesia

### Abstract

Soil characteristics that are unique and have the potential for flooding can provide information about a condition of flood vulnerability related to various factors. These factors are interrelated to one another. This study aims to detect Flood Vulnerability through the Topographic Wetness Index (TWI) Method Using a Geographic Information System (GIS) in Pantai Labu Baru Village. This study focuses on knowing the spatial distribution of flood-prone areas based on the TWI value and the accuracy of using the TWI value in determining flood vulnerability in Pantai Labu Baru Village, Deli Serdang Regency, which is one of the areas in North Sumatra Province with a fairly high level of flood vulnerability. Pantai Labu Baru Village is 5 kilometers from the beach. The area of Pantai Labu Baru Village is 1512239.15197 m<sup>2</sup>, according to the administrative map of the community. Paddy fields, plantations, and fields make up the majority of the land use in Pantai Labu Baru Village. The slope angle ranges from 0° to 19.9°. The TWI value falls between -8.3898 to 10.8494. The degree of slope also suggests a greater TWI value along with the lower slope angle. The degree of vulnerability to floods increases with the TWI value.

**Keywords:** TWI, GIS, Flood, Slope, Vulnerability

## DEVELOPING GORONTALO CITY DIGITAL TERRAIN MODEL TO ANALYZSE SURFACE FLOW LIMIT

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### Abstract

Imbalance of hydrological cycle in the Gorontalo City can cause flooding in some areas. Heavy rainfall potential, and terrain structure are thought to be the main factor. The immediate objective of the study is to analyse surface flow limit which cause flooding. The property of surface flow limit that can be computed from the minimum value of Shallow Flow Rate. Therefore, this study develop a Digital Terrain Model (DTM) based on Elevation elevation numerical, and transformed it into Surface Flow Weight Numerical by using vector analysis & and geometry to identify the surface flow area. The result show that the highest flood vulnerable is located at coordinate (0.51o N, 123.0519o W) with the surface flow height not exceeding 6 *m* and Flow Rate cannot reach 195.885 *m*<sup>3</sup>/*s*. Regardless of other factors, the Surface Flow Rate is relatively smaller than the rainfall levels that often occurred in Gorontalo City.

**Keywords:** Elevation, Digital Terrain Model, surface Flowflow.

## Assessment of Oceanographic Trend and Ocean Health Index in The Gulf of Madura

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<sup>1</sup>IPB University, Marine Science and Technology Department, 16680, Bogor Regency, West Java, Indonesia

<sup>2</sup>Faculty of Science and Technology, Open University, 15437, Kota Tangerang Selatan, Banten, Indonesia

### Abstract

The Gulf of Madura (GM) is situated between southern Madura Island and the mainland of eastern Java, where high marine activities take place in the region, such as shipping lines, coastal fishing, coastal industry and ports, and power plants that may impact on ocean/coastal health and environment. This study aims to analyze oceanographic characteristics and its trends, and to estimate oceanographic-based ocean health index (OHI) in the GM area. The validated daily-averaged model datasets from INDESO and COPERNICUS (2008-2019) were used in this study. Time-series analysis and estimates of its trend and OHI were employed to the datasets. It is shown that strong seasonal reversal surface circulation is found in the GM. The flow is mainly eastward (westward) during the northwest (southeast) monsoon period, associated with warmer (colder) and saltier (less salty) water. During the NWM period, strong eastward flow in the upper 20 m depth is compensated with westward flow beneath it, which may potentially create coastal upwelling in the southern area of the gulf. Trend of 6 oceanographic parameters is fluctuating. For example, trend of temperature, chlorophyll-a, dissolved oxygen, and phosphate is decrease slowly, but trend of salinity and nitrate is increase. Estimate of OHI in the study area is about 0.63, which is categorized as a moderate level.

**Keywords:** Gulf of Madura, oceanographic characteristics, variability, trend analysis, Ocean Health Index (OHI)

## Enhancing Wildfire Risk Assessment through Weather Modeling and Machine Learning: A Case Study in Orange County, USA

Lulus Kahono

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### Abstract

Forest wildfires are a significant threat, causing extensive environmental damage and loss of life. Accurate and effective risk assessments are essential for better understanding and mitigating this risk. In this study, we propose a novel approach that combines weather modeling and machine learning for improved wildfire risk assessment. Our case study focuses on Orange County, USA, known for its high wildfire susceptibility. The methodology involves collecting historical weather and wildfire data in the region. We employ a machine learning model that integrates weather data with other factors, including vegetation and topography, to predict wildfire risk. Through machine learning techniques, we analyze the relationships among these variables and generate accurate risk predictions for Orange County. Results indicate a significant enhancement in wildfire risk assessment with this approach. The developed model provides valuable insights into the factors influencing wildfires, aiding authorities and policymakers in implementing effective mitigation strategies. By leveraging weather modeling and machine learning, we can enhance our understanding and management of wildfire risks, safeguarding the environment and communities. This research showcases the potential of these technologies to improve wildfire mitigation efforts. The findings contribute to a proactive approach in addressing the serious threat posed by forest wildfires.

**Keywords:** wildfire, weather modelling, machine learning

## Room 6

# Financial Feasibility of Business Towards Application Based Business: A Case Study Of Drykeun

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### Abstract

Drykeun, an e-commerce startup established in 2022, focuses on the laundry industry in Indonesia. Drykeun aims to become the country's leading laundry service provider by utilizing technology, innovation, and exceptional customer service. Drykeun partners with existing laundries to ensure standardized quality control and deliver top-notch services to households and businesses across the nation. Its mission is to provide reliable, affordable, and high-quality services, making laundry day hassle-free for all people. However, facing low sales in the B2C sector, Drykeun plans to pivot to the B2B target market. To determine the viability of this shift, a feasibility analysis will be conducted. This quantitative study will utilize historical company data, as well as secondary data from literature reviews, journals, and books. It will involve a comprehensive analysis of the industry through PESTEL analysis and Porter's Five Forces, along with a SWOT analysis and evaluation of financial reports to assess the company's performance. Additionally, a root-cause analysis will be utilized to address existing issues. The research will also assess the financial feasibility of the company's strategy using measures such as the payback period, net present value, and internal rate of return.

**Keywords:** Laundry Industry, Feasibility Study, Financial Projection.

## The geometrical parameters effects on the degree of bending (DoB) of multi-planar DTKY tubular joints in offshore platforms

Rudi Walujo Prastianto<sup>1</sup>, Daniel Mohammad Rosyid<sup>1</sup>, Ferdita Syalsabila<sup>1</sup>, and Alviani Rahma Rizkhita<sup>1</sup>

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### Abstract

The service life of an offshore structure is an important variable to consider in the sustainability of an infrastructure. The service life could be assessed through fatigue life analysis of the critical tubular joint considering the hot-spot stress near the weld of the joint. Another important parameter in assessing the fatigue is Degree of Bending (DoB) of the joint which represents the stress distribution beneath the thickness. Finite Element Method (FEM)-based analysis makes structure modelling more advanced and detailed for complex structures. In this study, a case of jacket offshore structure tubular joint, DTKY-type, is modelled by using FEM-based software. Stresses in the tubular joint model will be evaluated for axial load acting on the brace members in a tension-compression combination mode. Non-dimensional geometry parameters such as  $\beta$ ,  $\gamma$ , and  $\tau$  are varied to determine their effects on the DoB of the joint. The results show that stress distribution could be well obtained at the critical points of the joint and  $\beta$  generally decreases the degree of bending of the joint at the saddle and crown positions. Meanwhile,  $\gamma$  and  $\tau$  both, generally increases the degree of bending at the saddle and crown positions.

**Keywords:** Degree of bending, Finite element analysis, Multiplanar tubular joint, Geometrical parameters.



## The geometrical parameters effects on the degree of bending (DoB) of multi-planar DTKY tubular joints in offshore platforms

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### Abstract

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**Keywords:** Degree of bending, Finite element analysis, Multiplanar tubular joint, Geometrical parameters.

## Aerosol Variability over Java Island Based on MERRA-2 Data

Prawira Yudha Last Kombar<sup>1</sup>, and Ridha Fatony Iswahyudi<sup>2</sup>

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<sup>2</sup>Bandung Institute of Technology, Meteorology Department, Bandung, West Java, Indonesia

### Abstract

Aerosol has become an essential component in climate variability and can influence the weather and climate pattern. The Java Island is one the quickest development region in Indonesia that influence the aerosol variability. Therefore, in this study we used Aerosol Optical Depth (AOD) parameter from MERRA-2 Reanalysis Data for 30 years (1990-2019) to analyze the variability in Java Island. In this study, we used the exploratory data analysis (EDA) method to process the data. From EDA method we obtain the result that the AOD in Java Island has two peaks in one year. The first peak occurs in October and the second peak in April. Based on spatial analysis, the maximum AOD magnitude occurs in Banten region that be located the western of Java Island.

**Keywords:** Aerosol, MERRA-2 Data, EDA, Java Island

## Effect of Mn and Al co-doping ZnO nanoparticles in the photodegradation process of Congo Red dye pollutant in water

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<sup>2</sup>Research Center for Photonics, National Research and Innovation Agency, Kawasan PUSPIPTEK Gd. 442, Tangerang Selatan, Indonesia

### Abstract

ZnO nanoparticles with co-doping of Mn and Al will be synthesized using the bottom-up coprecipitation method. The molar variations made fulfill the equation  $Zn_{0.95-x}Al_{0.05}Mn_xO$  with varying values of  $x = (0, 0.01, 0.02, 0.03, 0.04)$ . The coprecipitation process will be carried out under alkaline conditions with the help of a NaOH precipitator to reach pH 11 with a temperature of 60 oC. Nanoparticle samples will be dried first using an oven at 100 oC and then calcined at 700 oC. After that, the nanoparticle samples will be reacted with water preparation that has been contaminated by Congo Red textile dye with a concentration of 100 ppm. The samples were exposed to ultraviolet radiation for 30 minutes and then optically tested using a Uv-Vis spectrometer to determine changes in radiation absorption due to the addition of Mn and Al co-doping.

**Keywords:** ZnO Nanoparticle, Mn and Al Co-doping, Photodegradation, Dye Pollutant, Congo Red

## Wetland Reading Mobile Application to Help Educate Students and Protect Wetlands in South Kalimantan for Sustainable Living

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<sup>3,4</sup>Universitas Lambung Mangkurat, English Language Education, 70123, Banjarmasin, South Kalimantan, Indonesia

### Abstract

The Peat and Mangrove Restoration Agency of Indonesia currently focuses on peat restoration areas in six provinces in Indonesia, including South Kalimantan, to accelerate the restoration and return of damaged peat functions. Trying to present a small but meaningful effort in the educational field, this study aims to examine the use of a wetland reading mobile application to educate students aiming to finally protect wetlands in South Kalimantan. It employed a quasi-experimental study in English Department Study Programs in South Kalimantan. The data was analyzed using an independent t-test. Results of the students in the control and experimental groups reading ability with case-method learning were established. Students in the experimental group are becoming more aware of the importance of the wetlands around them. Through discussions on wetland cases provided on the wetland reading mobile application, students understand more comprehensively and interestingly about the condition and existence of the area around them. They are further expected to actively participate in sustainable living to protect and maintain the existence of wetlands. Wetlands must be returned to a wet ecosystem as before so that they can mitigate climate change and minimize the risk of peatland fires, the release of carbon emissions, and mangroves.

**Keywords:** Wetland, reading, mobile application, educate, sustainable living

## Room 7

### Performance analysis of cooling pad with stove wick material in simple flats for rent

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#### Abstract

Population growth is increasing rapidly every year, so the city government presents a program of affordable housing at affordable costs. Rusunawa Indrapura is one of the Simple Rent Flats that has just been inaugurated and chosen to be the research object. The reason for choosing a room with a west orientation on the 2nd floor is that the west orientation is the most exposed to sunlight. This study focuses on applying a passive strategy in the building, namely a direct evaporative cooling system with wet media (cooling pad). It aims to analyze the decrease in the daily average temperature in the room. The cooling pad material used is the stove wick with a length of 200 meters with a water requirement of  $\pm 800$ ml per hour. This study used an experimental method observed directly in the field for five consecutive days at a critical time, namely 12.00 - 15.00 WIB. The application of direct evaporative cooling works well in lowering the room temperature by 1.94-2.08oC per hour but there has been no decrease in humidity.

**Keywords:** Direct evaporative cooling, cooling pad, stove wick, flat.

## Mechanical Properties of Compressed Recycling Plastic Predicted on Pallet Application Utilizing Finite Element Analysis

*Galih Taqwatomo*<sup>1\*</sup>, *Dwi Novriadi*<sup>2</sup>, *Boy Marsaputra Panjaitan*<sup>1</sup>, *Hariaman Prasetyo*<sup>1</sup>, *Yusuf Subagyo*<sup>3</sup>, *Aditya Eka Mulyono*<sup>1</sup>, *Sri Rahayu*<sup>1</sup>, *Dewi Kusuma Arti*<sup>1</sup>, *Oka Pradipta Arjasa Putra*<sup>1</sup>

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### Abstract

The enormous use of plastic in any live sector will impact the waste plastic escalation. Unsorted and uncollected wasted plastic properly leads to the creation of mixed waste plastic in landfills. Therefore, mechanical recycling technology for processing mixed waste plastic into pasta phase has been developed. In this research, four sources of mixed waste plastic were implemented derived from household plastic bags (WPB), waste of plastic sack (WPS), waste of used carton beverage (WPAL) and waste plastic from drum pulper in pulp industry (WPI). Those materials were transformed into specimens through extrusion and compression molding, then tested for investigation the mechanical properties. A comparison of density, tensile strength, and compressive strength from each material was exposed comprehensively. Furthermore, finite element analysis (FEA) was employed to compute the reliability of recycle material properties in the pallet application under the racking condition test following ISO 8611 standard. Surprisingly, It was reported a potential performances with a maximum racking load until 700 kg for employed pallet designs. The maximum capacity was obtained based on consideration of the FEA result exhibited in tresca or maximum shear stress, total deformation, and factor of safety design.

**Keywords:** Mixed waste plastic, mechanical properties, FEA.

## Prediction on Ozone Formation in the Irradiator Gamma Merah Putih

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### Abstract

Radiation exposures of gamma rays toward water in the irradiation room can produce several toxic gases which the most dominant is Ozone. When the Ozone concentration exceeds 0.1 ppm, it will be dangerous for the human life. The purpose of this research is to predict the amount of Ozone concentration that is formed when the Irradiator Gamma Merah Putih (IGMP) is operated at normal condition, so that the quality of air concentration contained in the room can be known. The calculation of Ozone concentration in the irradiation room of IGMP used differential equation of Ozone buildup-decomposition. This mathematical model should be checked for its validity by comparing it to Ozone formation data from IR 206 Irradiator in Egypt. This research concluded that the mathematical model can be used to calculate Ozone concentration in the irradiation room. The result of Ozone calculation shows that the longer the irradiator operation time, the more the increase of Ozone concentration formed in the irradiation room. Dose rate, G-value, and irradiation time also influenced the amount of Ozone concentration before equilibrium condition achieved. Ozone concentration will be produced proportionally to irradiation time until equilibrium condition is achieved.

**Keywords:** *Gamma rays; Ozone concentration; Radiation exposure.*

## Synthesis of Bimetallic Gold-Silver Nanoclusters and Its Application as Pb (2) Sensing

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<sup>1</sup>Research Center for Advanced Materials, National Research and Innovation Agency (BRIN), Indonesia

### Abstract

Many research has been done on protein-stabilized gold nanoclusters because of their remarkable fluorescence properties and potential biological applications. Here we synthesis bimetallic gold-silver nanoclusters in protein template using Nanoclusters-Nanoclusters Interaction Method. The bimetallic gold-silver nanoclusters were characterized using uv-vis spectroscopy, fluorolog (Fluorescence Spectrometer), and Time Correlated Single Photon Counting (TCSPC) lifetime kit. It is found that the bimetallic gold silver nanoclusters emit bright red fluorescent with long fluorescence lifetime in range of microsecond. The nanoclusters show good stability when keep for month. The bimetallic gold nanoclusters were used for Pb (2) detection using fluorescence technique. The fluorescence intensity of nanoclusters decreased as the concentration of added Pb (2) increased. The fluorescence lifetime value of the nanoclusters is unchanged in presence and absence of Pb (2). This unchanged fluorescence lifetime obeyed a simple static quenching mechanism and indicated the aggregation of the sample. This work suggest that bimetallic gold silver nanoclusters can be used for glucose detection with a detection limit of  $10 \times 10^{-9}$  mol/L.

**Keywords:** Fluorescence, gold nanoclusters, lead (Pb) sensing, environment monitoring



## Removal Pollutants in Textile Wastewater using Rice Husk as Adsorbent

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### Abstract

You Textile effluent contains high levels of agents that harm the environment and human health. Rice husk is a by product of rice milling and is readily available in large quantities for adsorbent. The goal of this study was to evaluate rice husks' potential to decrease both organic and inorganic contaminants from textile effluent. Rice husks were added in quantities up to 38% of the adsorption bath's total capacity. Using a submerged flow system with a three-day HRT, the native textile effluent (diluted to 75%) was constantly pumped at a rate of 15 ml/minute. In-situ and laboratory analyses of the water quality parameters were conducted. The treated water by rice husk has met the requirements for river ecosystems with parameter values such as pH and Temperature is normal, TSS 65 mg/L, TDS 400mg/L, DO 4 mg/L, COD 200 mg/L, TN 5 mg/L, and TP 2 mg/L. TSS, COD, Ammonium, TP, and TN efficiency of removal were 86.94%, 84.19%, 67.25%, 61.24%, and 48.71%, respectively. The difference in removal efficiency can be attributed to various factors such as the nature of the pollutant, the adsorption capacity of the adsorbent, the concentration of the pollutant, and the interaction between the adsorbent and the pollutant. The wastewater treatment with rice husk is a promising approach for industrial-scale applications due to its adsorption properties and cost-effectiveness.

**Keywords:** Textile wastewater, rice husk, adsorption, pollutant removal

## Identification off Microplastics in *Euthynnus affinis* in Kedonganan Area, Kuta, Badung, Bali

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### Abstract

Plastic waste pollution in the ocean can compromise food safety for the community. One of the most dangerous pollution today is microplastics. Microplastics are plastic particles that are  $\leq 5 \mu\text{m}$  in size and cannot dissolve in water. Fish is one of the important foodstuffs that is often consumed by humans because, besides its delicious taste, fish also has good nutritional value. The presence of microplastic contamination in fish consumed by humans will certainly be very detrimental to humans. The purpose of this study was to determine the type and abundance of microplastics in *Euthynnus affinis* fish in the Kedonganan area, Kuta, Badung, Bali. This study was conducted from April to May 2023. The fish samples used were 30 samples with descriptive qualitative analysis. Microplastic particles were extracted first for further analysis. The results showed the types of microplastics found in *Euthynnus affinis*, namely film, fibre, and fragment types. While the abundance of microplastics in *Euthynnus affinis*, the fibre type is the most common type of microplastics found at 2.1 particles/individual followed by fragment and film types at 1.1 particles/individual and 0.8 particles/individual respectively

**Keywords:** microplastic, abundance, *Euthynnus affinis*, Bali

## Room 8

### Development Model of Cloud Computing Adoption for Industrial 4.0 Implementation Strategy for Improve MSMEs Performance

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#### Abstract

The presence of Industry 4.0, along with the emergence of the Covid-19 outbreak, has brought radical changes to Micro, Small and Medium Enterprises (MSMEs). Many MSMEs have experienced disruption due to shifts in lifestyle, work patterns, and business strategies, which resulted in a 94.69% decrease in sales during the pandemic. The Indonesian government designed Making Indonesia 4.0 to empower MSMEs to adopt digital technology to increase productivity, flexibility, and competitiveness. The adoption of digital technology is low among Indonesian MSMEs (12.5%). There are barriers among lack of capital, human resources, technology readiness, security to use, knowledge of the benefits, and unsure which technology to adopt. Cloud computing technology can be a solution for MSMEs that can offer products and services online, support planning and utilisation of shared resources, control processes, evaluate performance, enhance collaboration, and succeed in increasing sales by 163%. This study aims to examine the intentions of MSMEs on factors that affect the use of cloud computing and investigate its relationship to business performance. The research was analysed using the PLS-SEM method from questionnaire distribution data to 60 MSMEs. The results of the hypothesis analysis found that knowledge acquisition, sharing, perceived usefulness, ease of use, risk, and cost had no significant effect on behavioural intention to adopt cloud computing. Meanwhile, behavioural intention significantly affects cloud computing adoption and performance by improving productivity and flexibility. The research implications can assist researchers, owners/managers, and policymakers by offering valuable insights regarding cloud computing adoption decisions in MSMEs.

**Keywords:** Cloud Computing Adoption, Industry 4.0, Business Performance, MSMEs, PLS-SEM.

## Development of An Information System for The Diagnosis and Management of Thyroid Disorders

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### Abstract

Thyroid disorder is a condition experienced by patients due to abnormalities in the thyroid gland. Thyroid gland disorders are caused by several factors. There are thyroid disorders caused by impaired thyroid function, infection, autoimmune and malignancy. Diagnostic process and good management of thyroid disorders are needed to reduce the severity of the disease. The development of an information system can assist in the process of diagnosing and managing thyroid disorders. The purpose of this research is to develop an information system that can increase knowledge about thyroid disorders. Results: Development of an information system that can increase knowledge about the diagnosis and management of thyroid disorders. The developed system has been valuated with a total of 60 respondents and more than 90 percent stated that the information system can increase knowledge about thyroid disorders. Conclusion: the developed information system can increase knowledge about the diagnosis and management of thyroid disorders.

**Keywords:** information system, diagnostics, management, thyroid disease.

## Classification of covid 19 x-ray images using deep learning algorithms

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### Abstract

The representation of an object that is rewritten on a medium with a certain value (intensity) that has x and y coordinates is the meaning of the image. Rontgent is one type of medical image that is used to detect an abnormality. However, on X-ray images it sometimes looks unclear so that it can make it difficult for the medical team to interpret the image. Moreover, there is a different attenuation of X-rays between glands in normal tissue and those exposed to the disease. By implementing deep learning with the image classification method, it is possible to sort images based on feature extraction and weights on artificial neural networks. The steps taken include pre-processing, feature extraction using the VGG16 ANN layer without a classifier layer with convolution and pooling which produces bottleneck.npy, then creating its own classifier layer to train the classification of covid and normal classes using bottleneck.npy data. The accuracy levels obtained are 99%, 97%, and 94% respectively. Furthermore, when evaluated with the F1 score, the result is 0.939.

**Keywords:** Deep Learning, Image Processing, Classification, Lung X-Ray, F1 Score Method

## Usability Testing for Learning Media Application Al-Qur'an Hadith

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### Abstract

The ever-developing technology has an impact on all aspects of life, including education. One of the innovations in the field of education is the adoption of multimedia concepts in the teaching and learning process. Why multimedia? because with multimedia we can combine several elements at once including text, images, sound, video, and animation. An interactive multimedia-based learning application has been developed for Al-Qur'an Hadith subjects. Applications are made to attract interest in learning and make the learning process of teaching fun. The objective of this study is to get evaluations from users in terms of user satisfaction using the application with a usability test. Usability testing is carried out using the SUS (System Usability Scale) approach. The results of this study show that an interactive multimedia learning media application for learning the Al-Qur'an Hadith based on usability testing by 20 respondents, using the SUS approach, got an SUS Score is 81. The grade scale application is "A" and also application gets "acceptable" in acceptability ranges.

**Keywords:** education, interactive multimedia, SUS (System Usability Scale), usability testing

## Nielsen versus SMART in Heuristic Evaluation of Online Transportation App

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### Abstract

The increase in the number of users of online transportation apps is accompanied by a high number of complaints regarding usability issues. Meanwhile, there is the SMART method beside Nielsen's method for heuristic evaluation that provides more emphasis on mobile apps. The purpose of the research is to determine the fittest method in the heuristic evaluation of one of the online transportation apps in Indonesia. The research used a comparative study approach by comparing the number of obtained usability issues from Nielsen's method and the SMART method. The evaluation process involved three usability experts who identify the usability issues in two types of frameworks, which are Nielsen's and SMART. The findings of this study indicate that the SMART method discovers a higher number of issues around 7.7% (not significant) compared to the Nielsen method. The SMART method is also able to identify more issues across severity levels 2, 3, and 4. Based on these results, the SMART method is considered may fitter than Nielsen's method in evaluating online transportation apps in Indonesia. The research is expected to serve as a reference for conducting evaluations on mobile devices in Indonesia.

**Keywords:** Heuristic evaluation, Nielsen, SMART, Online Transportation, Usability

## System Usability Scale Validation from Expert Perspective

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### Abstract

The System Usability Scale (SUS) is a well-known method for quickly evaluating usability. Although SUS corresponds more strongly with user preference, quantitative data like SUS score is difficult to express in absolute terms. Therefore, the research aims to explore problems in the validity of SUS, by validating its results by usability experts, in the usability evaluation of e-Budgeting. With a comparative study approach, the research compared each of the 10 SUS statements' scores with the result of the qualitative usability evaluation. Data were obtained from three usability experts, who conduct Nielsen's heuristic evaluation, the SUS measurement, and interviews. The study obtained two main findings. Firstly, no entirely valid SUS scores were found from three evaluations of the three usability experts. Secondly, only the SUS score of the statement 3, 7, 9, and 10 show significant relevance to the interview result. Those findings may provide new insights when evaluating usability.

**Keywords:** System Usability Scale, Heuristic Evaluation, Interview, Usability



## Results Testing the Validity of Media Puzzle Digital Game with a Realistic Mathematics Education Approach for Kindergartens

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### Abstract

Learning in kindergarten now has entered the era of digital development. Kindergarten students are in a unique process of growth and development because they are a golden generation. So the use of media is important because it can increase children's learning motivation. The purpose of the results of this study is to produce a product in the form of a digital puzzle game media with a Realistic Mathematics Education (RME) approach for Kindergartens. The method in this article uses 4 stages, namely 1) potential and problems, 2) data collection, 3) product design, 4) design validation. The output that has been achieved in this study is that a valid digital puzzle game based of RME product is produced on validity tests from material experts and media experts. Based on the results of the average assessment obtained from material experts that is equal to 88.61% and the average assessment of media experts is equal to 91.39%. From the results of the two validators, a total average of 90% was obtained, so it can be concluded that the digital puzzle game based of RME media is suitable for use by kindergarten students.

**Keywords:** digital puzzle game, kindergarten, realistic mathematics education

## Analysis and Design of Indonesian Traditional Medicine (Jamu) Information System by using Prototyping Model (Case Study: Madura Island)

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### Abstract

The rapid growth of traditional medicine among Indonesian has encouraged the emergence of various production and utilization of herbal medicine. Madura herbs has various types, ranging from herbs for women's health to herbs for married couples. Considering the various types of Madurese herbal medicine, it is necessary to manage Madura herbs data including aspects of location, ingredient, side effects, etc. It is necessary to analyze and design an information system for Madurese herbs as an media to provide more complete and faster access to Madurese herbs information. In this study, the authors will discuss the analysis and unified modeling language (UML) design of the Madura herbal medicine information system by taking case studies in Bangkalan and Sampang (Madura). The analysis phase uses the PIECES analysis approach by describing the current conditions of Madurese herbal medicine. UML design, represented by use case diagram, will explain the functionality of the system based on PIECES analysis. From the PIECES analysis and UML design, we can determine what features are needed in the information system so it's able to assist the development and implementation of the Madura herbs information system. This information system developed by using prototyping model that describes the system so that the client or system owner has a clear picture of the system that built.

**Keywords:** Information System, Madura Herbs, Prototyping Model, PIECES, Unified Modelling Language (UML)

## Room 9

### System Usability Scale for Measuring Usability of Social Network Application from User Perspective

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#### Abstract

Based on its questionnaire style, there are two common methods of the System Usability Scale (SUS) in quantitative usability evaluation, namely Sauro & Lewis's and Riihiaho's methods. The research aims to find the fittest SUS methods for usability evaluation of a social network application from those two methods. Using a comparative study approach, the research compared the relevant result number of each of the 10 SUS questionnaire statements between those two methods. The relevant result of each SUS questionnaire statement is obtained if the data of the SUS survey and the qualitative usability evaluation support each other. Qualitative data which was collected from five ordinary users for each SUS method by usability testing and interviews had been analysed using a top-down analysis approach. The research obtained two main findings. Firstly, Sauro & Lewis's method is more relevant than Riihiaho's method from the comparison between the survey and interview results. Secondly, the two methods have the same strength of relevance when the SUS survey result is compared with the usability testing result. Based on those findings, Sauro & Lewis's method may be fitter than Riihiaho's method for evaluating the usability of a social network application, from user perspective.

**Keywords:** System Usability Scale, Usability Evaluation, Usability Testing, Interview

## Model Development Effect of Emotional Design and Human Performance on The Use of The Teman Bus Application

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### Abstract

Teman Bus is a bus transportation service established by the Ministry of Transportation of the Republic of Indonesia to improve the safety, security, and convenience of mobilization. Teman Bus services can be accessed through the Teman Bua application which can be downloaded for free on the Google Play Store to make it easier for consumers to find bus information. However, the design of the Teman Bus application is not good, this has an impact on reducing consumer interest in continuing to use the application. The concept of emotional design and human performance has an influence on consumers' desire to use technology. This study offers the development of a model of the influence of emotional design and human performance on consumers' desire to use the Teman Bus application using PLS-SEM analysis. The purpose of developing this model is to determine the effect of each emotional design indicator on consumer desire to use the Teman Bus application and the effect of human performance on consumer confidence in using the Teman Bus application. Data collection was carried out by distributing questionnaires online and completing tasks for students who live in Surabaya and have used the Teman Bus application.

**Keywords:** Teman Bus application, emotional design, human performance, intention to use, PLS-SEM analysis.

## Analysis of E-Commerce Service Quality Level By Integrating Customer Experience Quality, Importance Performance Analysis and Quality Function Deployment.

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### Abstract

The purpose of this study is to measure the level of service quality of ecommerce applications to users and provide suggestions for improvements to improve the quality of e-commerce application services in accordance with the wishes and needs of users. Service quality is improved based on the Customer Experience Quality model integrated with the Importance Performance Analysis (IPA) and Quality Function Deployment (QFD) methods. This research was conducted on one of the companies engaged in E-commerce whose number of service users has decreased. Data is taken by distributing online questionnaires (Google Forms) to people who already shop online. This research yielded, 1). The level of service quality in the dimension of Customer / Service Experience Quality whose service quality is considered low but very important for customers as many as 8 attributes that will be improved and are priority attributes (Quadrant 1) and input from customer requirements in QFD. 2). There are 3 priority technical responses and proposed improvements. The quality of service in one of the ecommerce in accordance with the results obtained still needs to be improved, especially in quadrant 1 so that the company must make the best possible improvements to improve service to customers.

**Keywords:** Customer Experience Quality, Importance Performance Analysis, Quality Function Deployment.

## Hand Gesture Recognition-Based Control System Using Computer Vision for Transporter Robot

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### Abstract

Robotics is a discipline that has experienced rapid development in recent decades. One of the main focuses in robotics development is the advancement of control systems. The primary objective is to create control systems that are more natural, easily understood, easily operated by humans, thereby enabling more intuitive interactions between humans and robots. To achieve this goal, research based on hand gesture recognition has been conducted by adapting computer vision methods as the control system for controlling a transporter robot. In this paper, computer vision methods are employed using the image processing framework called Mediapipe. Mediapipe is used to recognize and comprehend hand gesture movements, as well as display hand landmarks. The research utilizes two hand landmark functions: "Finger Up" for the right hand to control the wheel movement, and "Range Gesture" for the left hand to control the arm and gripper of the transporter robot. The testing results indicate that "Finger Up" function for the right hand successfully controls robot transporter's wheels with a success rate of 100%. Meanwhile, "Range Gesture" function for the left hand effectively controls the transporter robot's arm and gripper with a success rate of 97%, with a total average error of 3%.

**Keywords:** robotic, computer vision, hand gesture recognition, mediapipe, control system

## Multi-Criteria Decision Support System Using the AHP Method for Determining Weight of Transformer Paper Insulation Index

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### Abstract

The transformer is an electrical device that operates based on the principle of electromagnetic induction without altering the frequency, capable of transmitting electric energy from one or more electrical circuits to other circuits through magnetic connections. The equipment utilized to safeguard electrical devices is insulation material. The resistance of each insulation has an impact on the functioning of the system. Apart from providing mechanical strength and distance, paper insulation serves as a dielectric medium. The quality of paper insulation deteriorates due to excessive heat from oil oxidation, leading to a degradation process known as depolymerization. In addressing this issue, a Decision Support System is required to aid in calculating the condition index of the paper based on given parameters. The method employed is the Analytic Hierarchy Process (AHP) with multiple criteria. The results obtained through this method indicate that the entire system is operational as intended, and the calculation process using the chosen method yields appropriate outcomes. Testing outcomes, as measured against manual calculations using the Confusion Matrix, achieved a 100% accuracy rate. Furthermore, user testing yielded an average satisfaction rating of 90.97%. In conclusion, this system fulfills the necessary requirements and assists in determining the quality index of paper insulation in transformers.

**Keywords:** Transformer, Transformer Paper Insulation, Decision Support System, AHP, Multi Criteria.

## Multi-Expert GMM Decision Support System with AHP Method for Determining Weight of Transformer Oil Insulation Quality Index

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### Abstract

The transformer is very important and quite central in the power system for distributing energy from generators to consumers through electrical substations. Good transformer oil isolation is needed to protect the transformer to function optimally and prevent fatal interference. Over time, insulating oil experiences aging which can cause transformer damage and disruption in energy distribution to consumers. There are three things that affect the condition of transformer oil insulation, namely chemically testing for acidity, sediment or sediment (SED) and water content, from an electrical point of view testing for breakdown voltage (BDV) and factor testing dielectric dissipation or dielectric dissipation factor (DDF), and from a physical point of view, color and interfacial tension (IFT) tests are carried out. In dealing with this problem, a decision support system is needed to calculate the oil quality index based on the given parameters. The method used is AHP with multi-expert GMM. The results show that the system is running well, and the calculation method is appropriate. Tests show 100% accuracy in comparing manual calculations with the Confusion Matrix system. Users give an average satisfaction of 92.94%. In conclusion, this system effectively meets the needs and helps to determine the quality index of insulating oil in transformers.

**Keywords:** Transformer, Transformer Oil Insulation, Decision Support System, AHP, Multi-Expert



## N-Soft Rough Set Applied to Bipolar Data

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### Abstract

This paper used a new approach of the bipolar N-soft rough set to bipolar data. This study is based on a literature review. We define some basic rules in this new concept and give simulation bipolar data in distance education practice.

**Keywords:** N-soft set; bipolar; rough set; N-soft rough set

## APPLICATION OF GRAPH TO QUEUE SYSTEM MODELS IN MAX-PLUS ALGEBRA

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### Abstract

Graphs in Mathematics are defined as the set of non-empty points along with the set of edges connected by those points. One application of graphs is to solve network problems, such as queues. In this study, the graph concept will be applied to the queuing system model. Queuing system model solutions are sought by utilizing max and plus operations on max-plus algebra so that periodic queue times are obtained. The stages of application study research consist of collecting queue data, creating graphs that represent queues, building queuing system models and finding solutions with max-plus algebra. There are two case models in this study, namely the max plus algebraic model in the tax payment office service queue system and the vehicle queue system at the intersection.

**Keywords:** Graph, Max-plus algebra, Queuing system model

## Room 10

### Time series prediction on population dynamics

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#### Abstract

Predicting the time series is a challenging topic mainly on the era of big data. In this research, data taken from population dynamics of one dimension of logistic map with various parameters that leading the system into chaos. Various machine learning methods is employed for predicting the time series data such as Long Short-Term Memory (LSTM), Gated Recurrent Unit (GRU) and 1 Dimension of Convolution Neural Network (1D CNN). Three data sizes were considered: 1000, 100000 and 1 million points of time series data. As evaluation metric, Root Means Square Error (RMSE) is used to assess the accuracy of each method. The result indicating that the LSTM has the smallest RMSE value among all the three machine learning methods.

**Keywords:** time series, prediction, LSTM, GRU, 1D C

## Applying Digital Images to Identify Pavement Damage in Support of The Road Infrastructure Development Program

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### Abstract

Road damage can make driving uncomfortable and potentially result in accidents. The East Java region's roads have 288 kilometers of heavy and medium damage, according to data from the National Road Network Condition Map from 2017. Based on this, it is vital to routinely examine road upkeep and conditions in order to reduce damage. In order to promote the development of the road infrastructure, efforts must be made to maintain the roads. In order to decide what steps need to be performed, the first stage in road maintenance is to assess damage to a road. In this investigation, road pavement deterioration was identified using the Yolov3, Yolov4, Yolov5, and Yolov7 methods.

**Keywords:** Road infrastructure, yolo method, digital image, road pavement

## Design of Learning Media based on Augmented Reality in Physics Subjects

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### Abstract

Physics subject is one of the lessons that is quite complex for students in understanding physics concepts, namely the material of rigid body equilibrium. The purpose of this research was: showed design of learning media based on augmented reality (AR) in physics subjects that was rigid body equilibrium. This research is a qualitative research that was describe learning media based on AR. The AR-based Physics learning media created includes learning media that can be applied to students' smartphones. The physics material used is rigid body equilibrium. The smartphone application contains: 1) subject matter, 2) AR barcode scans, and 3) quizzes. The AR barcode is also made on the academic calendar so that it becomes an attraction for students. It is hoped that this learning media can be tested for its feasibility so that it can be disseminated to schools

**Keywords:** Learning media, augmented reality, and rigid body equilibrium.

## Artificial Intelligence Impact on Postpartum Culture Implementation: Javanese and Chinese Culture

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### Abstract

After giving birth, maternal care still continues. Keeping tabs on women's mental well-being is crucial for creating a conducive surrounding needed for both the mother and her baby. Neglecting the mother's emotional health can produce certain negative side effects starting from Baby Blues (postpartum depression) to the extent of physical bleeding. Consequently, these side effects need to be mitigated by society adopting the proper knowledge on the matter. Sadly, today's practice of treating mothers during this period may differ due to cultural varieties across nations. Indonesia is home to thousands of cultures, that being said, Javanese and Chinese are two ethnicities that populate Java Island. Both have their ways of caring for mothers during postpartum. However, many cultural practices have been concluded to be misconduct in the mother's care. Among many mistreatments, the urge to be completely immobile is still encouraged in these two cultures along with some irrational taboos. In the dawn of Artificial Intelligence (IoT), mothers can benefit from the use of technology. AI has the potential to be an epoch-making development in maternal care. By utilizing researched medical findings and interviews, it is found that AI can help to alternate society's belief towards old postpartum care traditions.

**Keywords:** Postpartum, Javanese culture, Chinese culture, IoT, Maternal Car

## Development of a clinical decision support system for the diagnosis and management of hepatitis

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### Abstract

Hepatitis is an inflammation of the liver caused by several factors including viruses, drugs, chemicals, autoimmune and bacteria. Prevention of chronic liver disease can be done with effective treatment. Hepatitis that causes a big problem in the health sector is the hepatitis B virus. This hepatitis infects many people in various cities. This hepatitis is a disease that can become chronic hepatitis. To improve the effective management of hepatitis, it is necessary to create a clinical decision support system for the diagnosis and management of hepatitis. The purpose of this research is to develop a clinical decision support system for the diagnosis and management of hepatitis. This research method uses water fall desain. The results of the study have developed a clinical decision support system for diagnosis and management of hepatitis. The system used databases and algorithms to diagnostic procces. The system testing was carried out by 100 participants. The system testing was carried out by 100 participants with 95 percent results according to existing diagnostic. Conclusion The developed clinical decision support system has good capabilities for the diagnosis and management of hepatitis.

**Keywords:** DSS; diagnosis and management; hepatitis

## Development of a clinical decision support system for the diagnosis and management of dyspepsia

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### Abstract

Dyspepsia is a common health disorder and can be experienced by anyone. Dyspepsia should not be underestimated considering that this syndrome can cause more serious complications for sufferers. Dyspepsia is a disorder of the upper digestive tract caused by an increase in stomach acid. Prevention of dyspepsia can be done with effective management of dyspepsia. To increase knowledge and effective management of dyspepsia, it is necessary to create a clinical decision support system for the diagnosis and management of dyspepsia. The purpose of this study was to develop a clinical decision support system for the diagnosis and management of dyspepsia syndromes. This research method SDLC (Systems Development Life Cycle) The results of the study have developed a clinical decision support system for the diagnosis and management of dyspepsia and trials have been carried out on the system with excellent results of more than 97 test results according to the gold diagnostic standard.

Conclusion The developed clinical decision support system has good capabilities for diagnosing and managing dyspepsia.

**Keywords:** DSS; diagnosis and management; dyspepsia.



## Trends in Research on Mathematical Representational Ability in the Journal of Mathematics Education across Indonesia: from Research Design to Data Analysis

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### Abstract

Empowerment of mathematical representation ability is one of the goals of 21st century education. This research uses content analysis on a number of articles that have been published in Mathematics education journals throughout Indonesia from 2014 to 2022, with the ability of mathematical representation as the main focus of the research. The current study has revealed that in the last three years, the number of publications focusing on mathematical representation ability has increased. Among these publications, the most dominant research design is quantitative. In addition, high school tenth graders and 'Geometry' respectively were the most coveted subjects and materials. Serial test and t-test are the most commonly used data analysis instruments and methods. Few articles related to computer science as a new digital era, not even one related to sustainable living. In relation to the findings of this study, several recommendations have been put forward for future research that underlies the ability of mathematical representation as the main focus. Some of these recommendations include increasing the diversity of types of research and research related to sustainable living.

**Keywords:** Mathematic educational journals, mathematical representation ability, data analysis, sustainable living, computer science

## Stability Analysis of Prey-Predator Model Migration with Holling Type-III Response Function In The Presence of Competition and Toxycity

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### Abstract

In this paper, we propose and investigate a prey-predator model with two zones contaminated with heavy metal toxicity, especially mercury (Hg), which enter the reservation zone and the unreserved zone in the aquatic environment. The dynamics of the prey population in the ecosystem can migrate from the reservation zone to the unreserved zone or vice versa, while predators are assumed to look for prey in the unreserved zone. The dynamic behavior of the population is expressed as a system of differential equations based on food intake capacity and other factors. We introduce a predator population with a Holling type III predation response function, coupled with inter-specific competition among prey due to overlapping diets and assuming the prey is contaminated with mercury metal toxicity. The presence of a positive equilibrium point, namely the interior equilibrium point, is analyzed and investigated for its stability using the Routh-Hurwitz stability test. Numerical simulations are carried out to verify the results of the analysis and dynamics of the system solution. The results of the analysis of the interior equilibrium point T3 in each case is a stable focal point. This indicates a change in the balance of prey populations and predator populations.

Keywords: Migration, Holling Type-III, Competition, Toxycity.

## Characterization of Directed Graphs Representing $C^*$ -Algebra of Complex Matrices

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### Abstract

Quantum mechanics is a study that plays a major role in determining the biological intelligence of Artificial Intelligence (AI). Point particle systems in quantum mechanics can be explained using  $C^*$ -Algebra which is called CAR-algebra. There is a special case in the CAR-algebra which is isomorphic to the  $C^*$ -algebra of complex matrices. On the other hand,  $C^*$ -algebras of direct sum of complex matrix spaces is isomorphic to  $C^*$ -algebra constructed by orthogonal projection and partial isometries operators via the Cuntz-Krieger relations of a directed graph. This article will provide a basis for the relationship between quantum mechanics and graphs through a discussion of the characterization of graphs that can represent  $C^*$ -algebra of complex matrices. It is found that  $C^*$ -algebra complex matrices  $n \times n$  is a directed graph without cycles with  $n - 1$  arrows, a single source, and has  $n$  path from the source.

**Keywords:**  $C^*$ -algebra, complex matrix, Cuntz-Krieger relations, directed graph, path

## Room 11

### Physiochemical Characteristics of Meat Analog from Sorghum, Oyster Mushroom, and Red Bean

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#### Abstract

Meat and animal meals are generally connected with a greater environmental effect in global greenhouse gases. Consumption heavy in red meat and processed meat have also been identified as risk factors. One of the solution is developing meat analogues or meat substitutes, which are plant-derived food products that are typically processed to mimic the flavour, texture, and appearance of meat. This study aims to determine physiochemical characteristic of meat analogues from sorghum, oyster mushroom, and red bean. This research consisting of 4 treatments with the ratio of sorghum, oyster mushroom, and red bean (%) i.e. P1 (20:55:25), P2 (15:65:20), P3 (10:75:15), dan P4 (5:85:10). Meat analogue was analyzed such us water content, ash, fat, protein, carbohydrate, fiber, and Fe content. The results showed that the best treatment for physicochemical characteristic was P1 (20% sorghum:55% oyster mushroom:25% red bean) which contain fiber 3.99%, ash 0.90%, protein 7.02%, carbohydrate 42.34%, fat 1.35%, water 43.13%, and Fe 21.81%.

**Keywords:** Physiochemical Characteristic, Meat Analog, Sorghum, Oyster Mushroom, Red Bean

## Chemical characteristics of high-protein mochi to prevent stunting in children

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### Abstract

Stunting and Malnutrsi are still polemics in Indonesia. This is due to low access to nutritious food intake, low intake of vitamins and minerals and poor sanitation in the neighborhood. One of the efforts to help prevent stunting in children is to meet the needs of protein and antioxidants. Agricultural commodities that have high potential for protein and antioxidants are moringa (*moringa oleifera*), brown rice (*Oryza nivera*), and soybeans. Making snacks for children by combining these three ingredients is expected to be a good source of protein and antioxidants for children. This study aims to determine the formulation of mochi made from modified brown rice flour Heat Moisture Treatment and Moringa leaf flour, as a snack that is high in protein and antioxidants as an effort to prevent stunting. This study used a randomized design complete with one variable. Treatment of adding glutinous rice flour, HMT modified brown rice flour and moringa flour formula A (100 : 0 : 0 ); formula B (77 : 20 : 3); formula C (57 : 40 : 3 ). The results are then tested for proximate content. The data obtained was continued with statistical analysis with the Ducan Multiple Range Test (DMRT).

**Keyword:** Inovation, Heat Moisture Treatment, Mochi, Moringa, Brown Rice.

## FORMULATION OF COOKIES WITH SUBSTITUTION OF FISH CORK (CHANNA STRIATA) AND MORINGA OLEIFERA FLOUR AS FOODS FUNCTIONAL PROTEIN WEALTHY

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### Abstract

The aim of this research is to develop cookies with fish meal supplementation cork and moringa for protein-wealthy functional food. The formulations of cookies with percentage variations, namely in F1 (70% wheat flour: 30% cork fish flour), F2 (60% wheat flour: 40% cork fish meal), F3 (50% wheat flour: 50% cork fish meal). All the treatment using the addition of 2.5% moringa flour. The analysis are protein, fat, moisture content, ash, and crude fiber. The data was analyzed using One-Way ANOVA and a differential test using Duncan's Post Hoc. The result showed cork fish substitution significantly affect protein, water content, and carbohydrate. The organoleptic test show combination 70% what flour and 30% cork fish meal high acceptance in texture and taste. The best combination was cookies F3 with 50% wheat flour and 50% cork fish meal that have  $17.40 \pm 0.06\%$  protein content;  $15.47 \pm 0.02$  fat;  $2.28 \pm 0.23$  water content;  $1.54 \pm 0.04$  ash;  $63.31$  carbohydrate; and  $1.96 \pm 0.03\%$  crude fiber.

**Keywords:** Cork fish, Cookies, Moringa, Protein

## Characterization of Iron Fortified Analog Rice Made from Jali and Breadfruit to Prevent Anemia in Pregnant Women

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### Abstract

Anemia occurs due to iron needs that are not fulfilled in the body. Anemia in the mother pregnancy has an impact on the baby and can increase the risk of death. In order overcoming iron deficiency cases in Indonesia requires efforts aimed at increasing the intake of macro and micro nutrients for the community. One of these efforts is to fortify micronutrients, vitamins, and minerals through analogue rice. Jali (*Coix lacrima-jobi* L.) and breadfruit (*Artocarpus altilis*) are foods high in iron. This study aims to determine the formulation of high-iron analogue rice made from jali flour and breadfruit flour. The combination of these two foods is expected to be an alternative source of staple food to prevent anemia. This study used a complete randomized design with a ratio of jali flour (A) and breadfruit flour (B) respectively 60:40, 50:50, 40:60, and 20:80. This research consists of three stages, namely the provision of Heat Moisture Treatment (HMT) treatment on jali flour, making analogue rice, and analyzing iron levels. Keywords: Analogue rice, anemia, jali, breadfruit.

## Proximate Analysis Of Tomato Sauce With Added Banana Waste As A Thickener

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### Abstract

Tomato sauce is a condiment that has become indispensable to be used in our cuisine. However, tomato sauce itself has a high sugar content, which can lead to an increase in blood sugar levels. The banana peels are included in tomato sauce as a natural thickening agent with functional value, including as an antioxidant and an alpha-glucosidase enzyme inhibitor which indicates that this sauce is suitable for diabetics. The goal of this study is to determine the result of the proximate test, total dissolved solids test, and physical analysis test of tomato sauce with the addition of banana peel waste. In this study, 5 different treatments were used, with the percentage of tomato sauce and banana peels varying as much as 60%:40%, 50%:50%, 40%:60%, 30%:70% and 20%:80%. Based on the proximate test, P5 has the highest water content (83% moisture content) and the highest ash content (5% ash content). The pH test revealed that the higher the tomato concentration, the sourer the sauce.

**Keywords:** Banana peel, diabetics, proximate, tomato sauce.



## Cilok: A bibliometric review from 2006-2023

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### Abstract

One of the basic needs of people is food. In order to support life and promote health, food must be safe and nutritious. In elementary schools, junior and senior high schools, as well as campus settings, various groups frequently consume snacks. Food and beverages prepared or sold by street vendors on the streets and in public areas, which are eaten or consumed immediately without further processing or preparation, are referred to as street food or snack food. Cilok is an example of a processed sago/tapioca snack. The current investigation employs bibliometric analysis on cilok to examine trends over the last ten years and identify the most popular search terms. Scopus and Google Scholar are utilized as sources of information for this bibliometric analysis. A total of 139 papers, comprising 57 journal articles, 42 theses, 10 conference articles, 8 research reports, 8 books, 8 book chapters, 7 diploma final projects, 3 dissertations, 2 theses, and 2 reports, were collected from 10 different sources. The most frequently occurring terms include borax, formalin, meatballs, and cilok. This overview aims to contribute to the advancement of cilok research.

**Keywords:** cilok, snack food

## Prospects of functional food products from seeded bananas (*Musa Balbisiana Colla*) for diabetes.

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### Abstract

Cases of obesity and diabetes currently continue to increase due to unhealthy lifestyles and a shift in healthy food consumption to fast food. Bananas are the most commonly consumed fruit in society, but seeded bananas (*Musa Balbisiana Colla*) are one type of banana that is rarely used because it contains many seeds. Seeded bananas have bioactive components such as flavonoids, polyphenols, tannins, monoterpenoids, sesquiterpenoids, quinones, saponins, fiber and carbohydrates. The purpose of this review examines the nutritional and pharmacological aspects of seeded banana (*Musa Balbisiana Colla*) and its potential applications in food and pharmaceutical products. The research method used is literature review using journal bases from Science Direct, Wiley, and Google scholar. The results of this review show that phenolic compounds and saponins contained in *Musa Balbisiana Colla* can inhibit the activity of  $\alpha$ -amylase and  $\alpha$ -glucosidase enzymes one of the causes of hyperglycemia in diabetics, high levels of resistant starch can be used as food additives to diet. Bioactive components contained in seeded bananas can be used as additional ingredients for dietary supplements and anti-diabetic drugs.

**Keyword:** *Musa Balbisiana Colla*, antidiabeti

## Physical and organoleptic quality characteristics of ice cream made from Arabica coffee grounds

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### Abstract

Coffee has become one of the drink trends in the millennial generation of coffee lovers where nowadays there are many coffee shops or coffee shops on every street corner. This causes a lot of coffee grounds to be wasted and not used by every coffee shop and coffee shop. Coffee grounds have many benefits, especially Arabica coffee grounds have a very distinctive aroma, making them suitable as an innovative additive in making ice cream. The purpose of this study was to determine the level of preference of the panelists and to determine the melting power test on the Arabica coffee grounds ice cream. In this research method, each ice cream mixture was divided into three concentrations of Arabica coffee grounds using: 40, 30, and 20 grams respectively. Samples of wet coffee grounds from espresso machine brewing will be dried first with 3 types of treatment, namely: drying in the oven, drying with a roast, and drying in the sun. Data collection was carried out by organoleptic tests by 30 semitrained panelists which included analysis of color, aroma, taste and texture. The preference level of the panelists, especially in drying Arabica coffee grounds in the sun, was found to be the most favorable with a concentration of 20 grams of Arabica coffee grounds. And in the test of the melting power of Arabica coffee dregs ice cream with the resulting ratio values ranging from 10.30 minutes to 40.03 minutes. So it can be concluded that the addition of arabica coffee grounds powder to ice cream has a significant effect on the hedonic test value, hedonic quality test and melting power.

**Keywords:** Arabica coffee grounds, ice cream, waste, utilization.

## Room 12

### Fish Processing Waste as an Alternative Source of Peptones: A Systematic Review

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#### Abstract

Peptone is a microorganism growth medium derived from the hydrolysis of a nitrogen-rich source. Fish is one of the probable sources of peptone, and the halal part is unimportant. The purpose of this study was to examine the peptone properties produced by hydrolysis of various fish wastes. A systematic review was used to conduct this study. The procedure of systematic review followed PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines for identification, screening, eligibility, and article inclusion. Article sources include Google Scholar, Science Direct, Wiley Online Library, Taylor & Francis Online, and Proquest. Some of the parameters reviewed were peptone characterization, and testing the effect of peptone on bacterial growth.

**Keywords:** Peptone, Fish Waste, Halal, Systematic Review

## Improvement of Sorghum Cultivation Technology in Ondorea Barat Village, Ende Regency, Indonesia

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### Abstract

Sorghum has the potential to be developed in Ende Regency, because it has wide adaptability, and is tolerant to drought and pests and diseases. This commodity can be used as an alternative food for the people of East Nusa Tenggara through proper processing. Sorghum contains fibre that the body needs. Contains enough carbohydrates, nutrients, protein, and vitamins. The main problem for members of the farmer groups in West Ondorea Village is the low productivity and income of sorghum farmers. This is because the cultivation technology is still conventional. Methods used: counselling, training, and mentoring. Technological improvements include tillage by ploughing once or twice and making drainage channels. The varieties used are Numbu, Suri 4, Super 1, Super 2, Soper 7 and Soper 9. Plant spacing is 75 x 25 cm or 75 x 20 cm. Number of seeds 2-3 per planting hole, embroidery is done if the sorghum seeds don't grow. Fertilizers used, include urea, TSP, and those containing potassium elements, weeding at 10-15 days, second weeding together with hilling, after the second fertilization. Pest and disease control is carried out effectively. Sorghum is harvested,  $\pm$  45 days after the ovule is formed.

**Keywords:** Improvements, techniques, cultivation, crops, sorghum

## Potential use of food waste in food processing to add nutritional value

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### Abstract

Every year the waste from leftover food increases. Based on the United Nation Environment Program (UNEP) in 2021, 20.9 million tonnes of food waste is produced per year. One of the largest contributors to food waste in Southeast Asia is Indonesia. Most of the waste is generated from the household sector. Examples of food waste generated by the household sector are fruit peels, eggshells and bones. Fruit peels contain good nutrition for the body, such as starch, fiber, polyphenols, etc. Banana peel has a calcium content of 715 mg/100 g and a high starch content of 10.32%. Durian peel contains a lot of lignin, cellulose and starch. Red dragon peel has the potential to be developed as an antioxidant source. Red dragon peel is rich in polyphenols and antioxidants. Eggshell and bone waste has a high content of calcium which is good for health. Duck eggshells contain 10.11% calcium, 6.41% chicken eggs and 9.69% quail eggs. Judging from the nutritional content, food waste such as fruit peels, egg shells and bones have the potential to be used as additives in food processing to increase the nutritional value.

**Keywords:** food waste, nutritional value, fruit peels, eggshells, bones

## Quality Analysis of Herbal Teabags as Functional Drink

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### Abstract

The purpose of this study was to determine the effect of variations in the addition of moringa leaves and flour with different bread flour on the acceptability of milkfish fish-stick. The main ingredients used were milkfish meat, bread flour, moringa leaves, ground pepper, garlic powder, salt, block broth, yuba, ice water, and eggs. The parameters observed were sensory quality (colour, aroma, taste, texture, and overall acceptability). Hedonic test data were analysed by analysis of variance in a completely randomised design in a unidirectional pattern. Differences in means were tested with Duncan's New Multiple Range Test (DMRT). The results showed that the addition of moringa leaves and bread flour had a significant effect on colour, taste, texture, and acceptability. In conclusion, the addition of moringa leaves and bread flour as much as 12.5% and 17.5% did not change the sensory quality of milkfish fish sticks so that it is still acceptable to consumers in general.

**Keywords:** Moringa leaves, milkfish, hedonic test, breadcrumbs

## The Characteristic of *Tapai* with Different Packaging Materials: Review

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### Abstract

*Tapai* is a traditional Indonesian fermented food made from cassava or glutinous rice. *Tapai* is usually presented at special events in various regions of Indonesia. *Tapai* is generally wrapped and packaged traditionally using leaves. Nowadays, *tapai* is also packaged in plastic and cardboard boxes. Based on traditional packaging using natural packaging materials, several types of leaves are used as *tapai* wrappers, but the most used are banana leaves and guava leaves. This study aims to determine the effect of the use of *tapai* packaging materials on the characteristics of the *tapai*. The method used is a systematic review by collecting scientific article from Scopus, Research Gate, and Google Scholar by focusing on the keywords *tapai*, wrapping food, and plant packaging. From the total number of articles obtained, some relevant paper was selected for discussion in this study. The information used focuses on the effect of packaging on the characteristics of the *tapai* produced, the organoleptic properties of the *tapai*, and the shelf life of the *tapai*. The study's results found several types of packaging used in packing *tapai*, including banana leaves, guava leaves, pandan leaves, woven bamboo, cardboard boxes, and plastic. The difference in the packaging used affects the sensory properties of the *tapai* produced, such as *tapai* color, aroma, and taste.

**Keywords:** *tapai*, fermented food, food wrapping, leaves packaging



## Removal Pollutants in Textile Wastewater using Rice Husk as Adsorbent

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### Abstract

You Textile effluent contains high levels of agents that harm the environment and human health. Rice husk is a by product of rice milling and is readily available in large quantities for adsorbent. The goal of this study was to evaluate rice husks' potential to decrease both organic and inorganic contaminants from textile effluent. Rice husks were added in quantities up to 38% of the adsorption bath's total capacity. Using a submerged flow system with a three-day HRT, the native textile effluent (diluted to 75%) was constantly pumped at a rate of 15 ml/minute. In-situ and laboratory analyses of the water quality parameters were conducted. The treated water by rice husk has met the requirements for river ecosystems with parameter values such as pH and Temperature is normal, TSS 65 mg/L, TDS 400mg/L, DO 4 mg/L, COD 200 mg/L, TN 5 mg/L, and TP 2 mg/L. TSS, COD, Ammonium, TP, and TN efficiency of removal were 86.94%, 84.19%, 67.25%, 61.24%, and 48.71%, respectively. The difference in removal efficiency can be attributed to various factors such as the nature of the pollutant, the adsorption capacity of the adsorbent, the concentration of the pollutant, and the interaction between the adsorbent and the pollutant. The wastewater treatment with rice husk is a promising approach for industrial-scale applications due to its adsorption properties and cost-effectiveness.

**Keywords:** Textile wastewater, rice husk, adsorption, pollutant removal

## Mechanistic Interpretation of Corrosion Potential Measurement for Anti-corrosive Competence of Plant-derived Extract on Mild Steel in Concrete Composite

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### Abstract

The exploration of the cost effective and eco-friendly plant-derived secondary metabolites has been recently exploited as an anticorrosive additive in concrete composite. The present work is focused to take advantage of leaf extracts of *Chromolaena odorata* (CoE) and *Arachis hypogaea* (AhE) plants for controlling the corrosion of reinforced-steel (ReS) in concrete. For the purposes, a mechanistic interpretation of the corrosion potential measurement was performed to examine the corrosion inhibitory actions of both the CoE and AhE using a non-destructive half-cell potential method. Different concentrations of each plant extract were utilized to study their anti-corrosive performance to the ReS. The plant-derived CoE and AhE extracts were characterized using phytochemical screening, gas chromatography (GC), and FTIR tests. The experimental consequence of the corrosion tendency of the ReS in control concrete composite (C3) is found to be increased with exposure period until 6 months at ambient condition. However, the additions of 500-4000 ppm CoE or AhE extract exhibited an impressive corrosion inhibiting effect to control the corrosion of the ReS. The optimum concentration of both the plant extracts was in the range of 2000-4000 ppm. The outcomes of the present study would be a milestone in understanding the fundamental protection procedure and employment of noble green anti-corrosive agents to increase the service life of reinforced concrete structures.

**Keywords:** Corrosion, concrete additive, mild steel, plant-based inhibitor, half-cell potential

## Evaluation of Chemical and Microbial Quality of Cardamon in Different Drying Methods

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### Abstract

Cardamom is known as a spice in Indonesia which has quite high economic value. Fresh cardamom needs to be dried immediately for preservation and long-term use. However, the use of different drying methods may have a significant effect on the quality. This study aims to determine the effect of different drying methods, namely sun drying and modified drying by roasting at temperature of  $\pm 60$  °C on the chemical and microbiological quality of cardamom. The results showed that the type of drying significantly affected the value of water content, protein, carbohydrates, total plate count, mold and yeast content. Cardamom with roasting drying at  $\pm 60$  °C had better microbiological quality but decreased in chemical quality. In conclusion, this study provided new insights into the effect of drying method on chemical and microbial quality of cardamom.

**Keywords:** cardamom, drying method, modified drying, spice, sun drying.

## Monitoring the Hygiene of Reusable Cutlery asan Effort to Sustainable Lifestyle

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### Abstract

Efforts to live healthy and implement sustainable living can be achieved in many ways, one of which is by using reusable cutlery when eating. Contamination of cutlery can cause disease and poisoning. The purpose of this study was to determine the feasibility of cutlery to be used in terms of hygiene, namely, to see the presence of *E. coli* and *Salmonella* bacteria found in cutlery in a canteen in industrial areas. The research method used is qualitative and quantitative analysis using the swab technique. The samples used were 6 samples, consisting of 2 spoons, 2 plates, 2 glasses. From testing the samples of cutlery in the canteen, all of them showed the presence of *E. coli* and *Salmonella* bacteria contamination. Therefore, it can be concluded that all samples of cutlery that can be reused in a canteen do not meet the eligibility requirements as cutlery due to contamination by *E. coli* and *Salmonella* bacteria which can pose a risk of disease and even poisoning.

**Keywords:** reusable cutlery, hygiene, bacteria



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