SAFE2023

chiang mai, thailand

safe-network.org

10

a decade of companionship

May 28-29, 2023
Chiang Mai, Thailand

BOOK of PROGRAMS

International Conference on Sustainable Agriculture, Food, and Energy

THEME : "Lab to Blueprint: Bring Science Closer to the Community"

SAFE 2023

Organizer: SAFE NETWORK Asia Pacific Network for Sustainable Agriculture Food and Energy

HOME FOR CONNECTING PEOPLE.

WELCOME SPEECH FROM THE LOCAL CONFERENCE COORDINATOR

Ass. Prof.Dr. Sermkiat Jomjunyong
Local Conference Coordinator
SAFE-Network Country Coordinator (Thailand

*HE. **Ir. Achmad Wicaksono, M/Eng. Ph.D.**, Indonesian Attache for Education and Culture, Indonesian Embassy. Bangkok*
Keynote speakers and Invited Speakers
Rectors and Universities Leaders from Asian Universities
Distinguished Guests, Ladies and Gentlemen,

We have prepared SAFE2023 to the greatest extent possible. There were two meetings with the President of Maejo University and one with the Maejo University team. I want to express my sincerest appreciation to the President of Maejo University, Dr. Weerapon Thongma, for providing exceptional support for this occasion.

We also held three meetings with colleagues at Chiang May University, particularly with the Agroindustry and Engineering Faculties. On this occasion, I would also like to express my appreciation for the assistance provided. One meeting with the President of Chiang Mai Rajabaha University adds fresh momentum to the SAFE2023 initiative. Additionally, we would like to express our gratitude to the President of Chiang Mai Rajabhat University, **Assoc.Prof. Dr. Chatree Maneekosol**

In particular, I would like to express my gratitude to the Conference Secretary, Dr. Pavalee *Chompoorat Tridtitanakiat,* for their extraordinary hard work in supporting the entire SAFE2023 agenda, even though she was hit by the Covid-19 attack a week before this agenda, she still carrying out the preparation work for SAFE2023 from home. Several virtual meetings were also conducted in preparation for this event. At this time, I would like to express my most profound appreciation for the contribution of my peers from CMU, MJO, CMRU, Phayao University, and Central Bicol State Agricultural University Philippines. I was not forgetting to thank the SAFE-Network secretariat teams from numerous Indonesian universities and Malaysia.

SAFE-Network's 10-year voyage, announced at Andalas University, Indonesia, on May 12, 2023, has positively impacted society. As an independent organization that self-finances its activities, SAFE-Network can serve as a model for creating a sustainable organization based on the philosophy of being l bigger together with a genuine sense of companionship. As part of the SAFE Network's tenth-anniversary celebration, the annual SAFE Conference was followed by several never-before-held events, such as the Product Innovation Competition, Community Service Programme, and University Leader Meeting for establishing an MoU.

Hopefully, the 10th anniversary of SAFE-Network can be an essential milestone for SAFE-Network's journey forward. Ten years is a young age for an organization; the stricter challenge of bringing science to the community with innovations that significantly impact the community needs attention. Happy conference. Please enjoy your friendship and Enjoy Chiang Mai.

Thank you.

Message from SAFE-Network: a decade of companionship

Prof. Dr. Novizar Nazir
Andalas University. Indonesia
SAFE-Network Coordinator

The Asia-Pacific Network for Sustainable Agriculture Food and Energy (SAFE Network) is a network of university and college educators, researchers, and activists who collaborate in analysis, synthesis, connecting, and promoting sustainable agriculture, food, and energy practices in the Asia-Pacific region. We promote research collaboration on sustainable agriculture, foods, and energy production; establish regional networking among participants; increase awareness of the importance of living and working in a manner that enhances the economic, environmental, and social well-being of our community through research education, regional partnerships, and community engagement.

Our Core Value are:
Independence. SAFE-Network do not accept money from governments, corporations or political parties. |
Respect. Respect for differences in countries, ethnicities, religions, cultures
Happiness. We have to make sure that we are the same happiness living in this planet
Bigger together.We must ensure that each member grows and develops together and helps one another in achieving better goals
Friendship. Friendship and working together can be seen as tasks that involve love, community, and making new kinds of sociality. by working together, member can achieve great things and overcome challenges
Innovation. Doing things differently – turning challenges into opportunities and ideas into creative solutions that have social, economic and environmental impact

We are happy that the International Conference on Sustainable Agriculture, Food, and Energy (SAFE2023: International Conference on Sustainable Agriculture, Food, and Energy (SAFE2023): Circular Economy Implementation in Agri-food Energy Production for Community Empowerment which will be held on May 28-29, 2023, in Chiang Mai, Thailand. The co-host institution is Maejo University, Thailand, and ANDALAS University, INDONESIA, supported by Chiang Mai Rajabath University, Chiang Mai University (AAUN), Warmadewa University, Central Bicol State Universityof Agroculture (CBSUA) and Asean Agriculture University Network/ This conference is the 9th conference after the 1st International Conference on Sustainable Agriculture, Food, and Energy (SAFE2013) in Padang, Indonesia (12-14 May 2014), the 2nd conference SAFE2014 in Bali, Indonesia (17-19 September 2014). The 3rd conference SAFE2015 in Ho Chi Minh City, Vietnam (17-19 November 2015), the 4th conference SAFE2016, Colombo, Sri Lanka (October 20-22, 2016), the 5th conferenceSAFE2017, Malaysia, August 22-24, 2017; the 6th conference of SAFE2018, Manila. Philippines [October 19-21, 2018], the 7th conference of SAFE2019, Phuket. Thailand (October 19-21, 2019), the 8th conference of SAFE2020 in Jeju, Korea (October 21, 2020), the 9th conference of SAFE2022 in Istanbul, Tutkey (October 21-22, 2022).

Thanks to Local Conference Coordinator *Dr. Sermkiyat* , the Secretary of Conference *Dr. Pavalee*, Maejo University, Chiang Mai Rajabaht University, Warmadewa University, and all the Committee member for all contribution for this event.

This year IS A DECADE OF OUR COMPANIONSHIP. We are determined to work even harder within the framework of friendship and happiness to realize our vision “Create a better life for people through impactful innovation in sustainable agriculture, food, and energy.

Welcome address: Chiang Mai Rajabaht University, Thailand

Dear Asst. Prof. Dr. Sermkiat Jomjunyong (Local Conference Coordinator SAF
Network Country Coordinator (Thailand))
Prof. Novizar Nazir (SAFE-Network Coordinator, Andalas University. Indonesi
Assoc. Prof. Dr. Weerapon Thongma (President of Maejo University)
Dr. Ir. Achmad Wicaksono (Indonesian Attache for Education and Culture)
Honorable Speakers,
SAFE Delegates,
Distinguished Guests,
Ladies and Gentlemen

It is my great honor to be here and to extend our warmest welcome to you all to t
10th International Conference on Sustainable Agriculture, Food, and Energy and
sign our Letter of Intent (Loi) today. I am confident that through our efforts a
commitment, we will be able to achieve more and to be able to continue to devel
even stronger relationships and friendships among Safe-Member Universities
would like to take this opportunity to assure you that Chiang Mai Rajabh
University will do whatever we can in order to provide a successful and fruitf
implementation of this LoI.
It is also an honor for Chiang Mai Rajabhat University to help organize th
International Conference. Since Chiang Mai Rajabhat University has the academ
cooperation with SAFE Network for many years and we do cherish our partnersh
and collaboration in all endeavors.
May our partnership continue to flourish and benefit among SAFE Netwo
members and SAFE member universities for many years to come.
I wish you a fruitful deliberation in not only identifying information needed b
also have engaging discussions and a great time in this conference together with
delegates. And I hope your stay in Chiang Mai will be fruitful and enjoyable

Assoc. Prof. Dr. Chatree Maneekosol,
Acting President

Welcome address: Maejo University, Thailand

It is my great pleasure to welcome to all participants and delegates to the International Conference on Sustainable Agriculture, Food, and Energy or SAFE2023 and A decade of companionship co-hosted by Maejo University, Thailand. As everyone knows, SAFE2023 is to provide an opportunity for more than 200 of educators, researchers, and scientists from various universities around the globe who share a common goal of addressing major sustainability challenges in agriculture, food, and energy. It also encourages transdisciplinary studies and promotes greater integration of research through a strategic partnership among the SAFE members; and strengthens the relationship between and among the SAFE members. I would like to express my sincere appreciation to all of you who helped make this event come together to become a success.

I am thrilled this year's forum is held in person, representing a significant milestone in these post-pandemic times. While virtual engagement has its advantages, nothing compares to the magic of face-to-face interaction. It provides the ideal setting for participants to connect, engage, and network with esteemed colleagues in the Academe—a core objective of the SAFE network. This face-to-face mode conference provides a forum for scholarly discussions on agricultural innovations, sustainability, entrepreneurship, and an excellent venue for networking. It is also relevant for exploring and searching various aspects of innovations through appropriate application in agriculture education, the very heart of the mission of SAFE network. I do hope that the conference involving both oral and poster are extremely beneficial for research scholars, particularly with the knowledge sharing is highly motivating for keen interest participants. I also add in my words to thank the cohesive efforts of a dedicated and committed team from SAFE network and Maejo University for organizing this Conference.

I wish our Conference a success and achieve a milestone for upcoming SAFE conferences, of course we will be working together for success and WiNS. (Wisdom, Innovation, Network, Services) with our society forever.

Wish you best wishes for future upcoming.

Warm Regards,

Associate Professor Dr. Weerapon Thongma
President of Maejo University
President of ASEAN Agricultural University Network (AAUN)

SAFE2023 PROGRAM

DAY 1: (Sunday, May 28, 2023): CONFERENCE AND LEADER'S MEETING

DAY 1: OPENING SESSION

	TIME	Activity
	8.00-8.10	**INTRODUCTION by MC:** Chudapak Chaichompoo and Piyapat Chaichompoo
	8.10-8.15	**Thailand National Anthem**
	8.15.8.20	**Indonesia National Anthem**
	8.20-8.30	**Welcome Speech and Introduction to SAFE2023** **Ass. Prof.Dr. Sermkiat Jomjunyong,** Local Conference Coordinator SAFE-Network Country Coordinator (Thailand)
	8.30-8.40	**SAFE Message:10 Years Companionship** **Prof. Dr. NOVIZAR NAZIR,** SAFE-Network Coordinator Andalas University. Indonesia. Presentation of Lifetime Achievement Award
	8.40-8.50	**Opening Message** **Assoc. Prof. Dr. Weerapon Thongma,** President of Maejo University. Thailand Director of AAUN (Asean Agriculture University Network)
	8.50-8.55	**Opening Message** **Assoc. Prof. Dr. Chatree Maneekosol, Acting President** of Chiang Mai Rajabhat University. Thailand Director of AAUN (Asean Agriculture University Network)
	8.55-9.00	**Opening Message** **Ir. Achmad Wicaksono, M/Eng. PhD,** *Indonesian Attache for Education and Culture, Bangkok Thailand*
	9/00-9.15	SIGNING CEREMONY OF LETTER OF INTENT (LoI) BETWEEN SAFE-MEMBER UNIVERSITY AND MAEJO UNIVERSITY, BETWEEN SAFE-MEMBER UNIVERSITY AND CHIANG MAI RAJABAHT UNIVERSITY; AND BETWEEN SAFE-MEMBER UNIVERSITY AND CHIANG MAI UNIVERSITY. BETWEEN SAFE-MEMBER UNIVERSITY AND USEP (Philippines)
	9.15-9.30	OFFICIAL PHOTO SESSION AND ART PERFORMANCE

DAY 1: KEYNOTE SESSION

	TIME	Chairperson: Dr. Ravindra C Joshi (Philippines)
	09.30-09.50	**Prof.Dr. SHABBIR H. GHEEWALA:** *The LCA of Biofuels and Bioproducts* The Joint Graduate School of Energy and Environment (JGSEE), King Mongkut's University of Technology Thonburi (KMUTT), Thailand
	09.50-10.00	**Q and a Session**
	10.00-10.15	**Associate Prof. Dr. Weerapon Thongma:** *The Role of Asean Agriculture Universities to Meet SDGs* President of Maejo University, Thailand President of ASEAN Agriculture University Network (AAUN)
	10.15-10.30	**Assoc. Prof. Nguyen Huy Bich:** *Renewable Energy Development for Net Zero Emission – Case of Vietnam* Faculty of Engineering Nonglam University Ho Chi Mihn City. Vietnam
	10.30-10.40	**Discussion**
	10.40-10.45	**Presentation of Appreciation**

DAY 1:INVITED SPEAKER SESSION 1

	TIME	Chairperson: Dr. Rovina Kobun, *Universiti Malaysia Sabah, Malaysia*
	10.45-10.55	***Assoc. Prof. Dr. Nurul Huda:*** *Sustainable Food Technology Trends* Faculty of Sustainable Agriculture, Universiti Malaysia Sabah, Sandakan, Malaysia.
	10.55-11.05	***Fetriyuna, Ph.D.:*** *Nutritional Composition of Underutilized Local Food Resources for Rice Substitution and Gluten-Free Product* Lecturer and Researcher in the Department of Food Industrial Technology, Padjadjaran University. Indonesia
	11.05-11.15	***Pavalee Chompoorat Tridtitanakiat, Ph.D:*** *Post-harvest Technology and innovation in Thailand* Faculty of Agro-Industry, Chiang Mai University, Thailand
	11.15-11.25	***Prof. Dr. Hanilyn Aguilar Hidalgo:*** *Green Farm Tourism for Livelihood and Community Development* Central Bicol State University of Agriculture, The Philippines
	11.25-11.35	***Discussion***
	11.35-11-40	***Presentation of Appreciation***

DAY 1: INVITED SPEAKER SESSION 2

	TIME	Chairperson: Assoc.Prof. Dr. Siti Norasmah, Universiti Teknologi MARA (UiTM). Malaysia
	11.40-11.55	*Community-based water-energy-food nexus: the case study of the Thai elephant camp* **Dr. Chayanon Sawatdeenarunat** Asian Development College for Community Economy and Technology, Chiang Mai Rajabhat University, Thailand
	11.55-12.10	*Concerns of Developing Countries and the Sustainable Development Goals: A study with special reference to India* **Prof. Manoj K S Chhangani, Ph.D.** Government Meera Girls College, Udaipur-(Rajasthan) INDIA
	12.10-12.25	*Resources speaker: Renewable Energy Applications in the Agricultural Field and Natural Resource Technology* **Asst. Prof. Dr Yuwalee Unpaprom** *Deputy Director of Academic Administration* and Development, Maejo University, Thailand
	12.25-12.40	Collaboration Initiative for Innovation of Sustainable of Sustainable Agriculture by Proton Mutation Technology. **Dr. Surapol Dumronggittigule,** Phayao University. Thailand
	12.40.-12.50	*Discussion*
	12.50-13.00	***Presentation of Appreciation***

DAY 1:LUNCH BREAK AND PRODUCT INNOVATION EXHIBITION

	13.00-14.00	***Lunch and Prayer***

DAY 1: : PARALLEL SESSION 1

	14.00-15.30	**Room 1** **Chairman:** Prof.Novizar Nazir (Indonesia); **Co-Chairman:** Prof. Sermikiat J.(Thailand); **Secretary:** Dr. Ravindra Joshi (Philippines) **Leader's Networking Meeting** Topics: Collaboration (MoU), Innovation Center, SAFE-Network University	**Room 2** **Chairperson: Prof. Dr. Haslina,** *Universitas Semarang. Indonesia*	**Room 3** **Chairperson: Anggela Wulansari, ST, MP** *Universitas Khairun. Indonesia*	**Room 4** **Chairperson: Dr. Ni Luh Suriati.** Universitas Warmadewa. Indonesia	**Room 5** **Chairperson: Dr. Naksit Panoyai.** *Chiang Mai Rajabhat University. Thailand*	**Room 6 Virtual Room** **Chairperson: Prof. Dr. Amelia Nicolas,** *Central Bicol State University of Agriculture, Philippines.*	**Room 7 Virtual Room** **Chairperson: Dr. Mia Bella R. Fresnido** *Central Bicol State University of Agriculture, Philippines.*
	14.00-14.05		Food-05	Food-29	Development-07	Presenter-01	Social-01	Agriculture-01
	14.05-14.10		Food-06	Food-32	Development-08	Presenter-02	Social-02	Agriculture-05
	14.10-14.15		Food-09	Food-37	Development-09	Presenter-03	Social-03	Agriculture-06
	14.15-14.20		Food-10	Food-39	Development-11	Presenter-04	Social-07	Agriculture-07
	14.20-14.25		Food-12	Food-40	Development-12	Presenter-05	Social-08	Agriculture-08
	14.25-14.30		Food-13	Food-41	Development-14	Presenter-06	Social-11	Agriculture-09
	14.30-14.35		Food-14	Food-42	Development-15	Presenter-07	Social-20	Agriculture-10
	14.35-14.40		Food-15	Food-43	Development-16	Presenter-08	Social-21	Agriculture-11
	14.40-14.45		Food-16	Food-44	Development-17	Presenter-09	Social-22	Agriculture-12
	14.45-14.50		Food-17	Food-45	Development-19	Presenter-10	Social-23	Agriculture-13
	14.50-14.55		Food-18	Development-04	Development-20	Presenter-11	Social-25	Agriculture-17

	14.55-15.00		Food-19	Development-05	Development-22	Presenter-12	Social-26	Agriculture-21
	15.00-15.05		Food-24	Development-06		Presenter-13	Social-33	Agriculture-29
	15.05-15.10		Food-27			Presenter-14	Agriculture-42	Agriculture—32
	15.10-15.30		Discussion	Discussion	Discussion	Discussion	Discussion	Discussion

DAY L PARALEL SESSION 2

	TIME	**Room 1 Chairperson: Prof. Dr. Endang Sulistyowati University of Bengkulu (UNIB). Indonesia**	**Room 2 Chairperson: Assoc. Prof. Dr.** Rameshprabu Ramaraj.. Maejo University. Thailand	**Room 3 Chairperson: Tri Indrarini Wirjantoro, Chiang Mai University. Thailand**	**Room 4 Chairperson: Prof. Dr. Normalina Arpi. Universitas Syiah Kuala (USK). Indonesia**	**Room 5 Chairperson: Dr. Pragya Sharma,** *V.K.B Govt. Girls College. Dungarpur (India)*	**Room 6 Virtual Room Chairperson: Dr. Amelia Nicolas, Central Bicol State University of Agriculture, Philippines.**	**Room 7 Virtual Room Chairperson: Dr. Mia Bella R. Fresnido** *Central Bicol State University of Agriculture, Philippines*
	15.30-15.35	Food-28	Energy-01	Agriculture-02	Agriculture-23	Agriculture-40	Product-1	Agriculture-47
	15.35-15/40	Food-29	Energy-02	Agriculture-03	Agriculture-24	Agriculture-41	Product-05	Agriculture-51
	15.40-15.45	Food-30	Energy-03	Agriculture-04	Agriculture-25	Agriculture-43	Product-06	Agriculture-54
	15.45-15.50	Food-31	Energy-04	Agriculture-14	Agriculture-26	Agriculture-44	Product-07	Food-01
	15.50-15.55	Food-32	Energy-05	Agriculture-15	Agriculture-27	Agriculture-45	Product-11	Food-02

	15.55-14.00	Social-34	Energy-06	Agriculture-16	Agriculture-28	Agriculture-46	Product-24	Food-04
	16.00-16.05	Social-35	Energy-08	Agriculture-18	Agriculture-30	Agriculture-48	Product-28	Food-07
	16.05-16.10	Social-36	Energy-09	Agriculture-19	Agriculture-31	Agriculture-49	Product-32	Food-13
	16.10-16.15	Social-37	Energy-10	Agriculture-20	Agriculture-33	Agriculture-50	Product-36	Food-14
	16.15-16.20		Energy-13	Agriculture-22	Agriculture-34	Agriculture -52	Product-39	Food-15
	16.20-16.25		Energy-14	Agriculture-37	Agriculture-35	Agriculture -53	Energy-07	Food-18
	16.25-16.30			Agriculture-38	Agriculture-36	Agriculture -12	Energy-12	Food-24
	16.30-16.35			Agriculture-39			Development-02	Food-25
	16.35-16.40						Development-03	Food-28
	16.40-16.45						Development-10	Development-21
	16.45-16.50	Discussion	Discussion	Discussion	Discussion	Discussion	Development-13	

DAY 1-CLOSING

16.55-17.15	Closing Ceremony	

DAY 2 (Monday, May 29, 2023): COMMUNITY SERVICES AND SITE VISIT:

Time	Activity	Description
8.00-12.00	Departure from Empress Hotel	Cannabis Industrial Farm, Vermi Farm, Organic Seed Bank Center,
12.00-13.30	Visit Maejo University	Lunch and Art Performance

13.30-14.30	Departure from MJO to Chiang Mai University	Science and Technology Park (STeP) at Chiang Mai University
14.30-15.30	Visit STEP	**The Northern Science Park (NSP)** is one of the projects under the "Regional Science Park" (RSP) program, launched by Science Park Promotion Agency (SPA), Thai Ministry of Science and Technology (MOST) in 2012. The NSP is one of three regional science parks in Thailand. Northern Science Park has been operated by Chiang Mai University's Science and Technology Park (STeP) and other six networked universities in Northern Thailand since 2013 under the Ministry of Science and Technology's Science Park Promotion Agency (SPA) support. It aims to stimulate the creation of new technology businesses and be the linkage to build the ecosystem to promote innovation development between the academy, government and private sector. SPA also provides financial support for the three (Northern, North-Eastern, Southern) RSPs' physical facilities. The NSP building was constructed entirely at the end of 2017 and used as the STeP's office, the headquarter of NSP.
15.30-16.00	Prayer	Central Mosque Hidayatul Islam at Night Bazaar Area
16.00-18.00	Community-Based Water Tretment Project	**Creating a Sustainable Future of Mae Kha Canal in Chiang Mai, Thailand** Having roles as a city guardian, cultural features, and irrigation system, Mae Kha Canal was one of the most important components of Chiang Mai water system. Unfortunately, the unregulated growth due to a rapid urbanization since 1985 has caused the canal to suffer with massive amounts of pollution. Consequently, the city turns its back on the canal, making it a dumping site. This project provides a comprehensive study and thorough historical, environmental, and planning analysis. The proposal aims to revitalize the image as well as reestablish a relationship between people and nature. To achieve a sustainable development of Chiang Mai, three water treatment methods are proposed in accordance with the existing land use planning aiming to create a linear park framework along the canal. Moreover, an urban landscape infrastructure is proposed as a pilot wetland water treatment project. The design demonstrates the strong capability of landscape intervention to resolve the severe water quality problems and bring about quality of life.

PARTICIPANT BY CATEGORY

'Socio-Economic

Social-1	**AN OVERVIEW CONTRACT FARMING ON SMALLHOLDERSOCIAL BUSINESS: THE IMPLEMENTATION TRIPLE BOTTOM LINE AND ISLAMIC SOCIAL FINANCE** **Hasrul Hashom [1,]a, Ahmad Shabudin Ariffin [2,]b, Muhammad Husni Hasbullah[3,] c,[4,] d Muhammad Aizat Md Sin** [1,4] Faculty of Business & Science Management, Kolej Universiti Islam Perlis, Malaysia [2] Centre of Language & General Studies, Kolej Universiti Islam Perlis, Malaysia [3] Faculty of Muamalat & Islamic Banking, Kolej Universiti Islam Perlis, Malaysia Corresponding Author: a)hasrul@kuips.edu.my b)shabudin@kuips.edu.my c)husni@kuips.edu.my d)aizatmdsin@kuips.edu.my
Social-2	**Supply Chain Risk Management: A Conceptual Study in Livestock Industry in Malaysia** **Muhammad Aizat Md Sin[1,] Ahmad Shabudin Ariffin[2,] Mona Fairuz Ramli[3,] Hasrul Hashom[4,] Shaharul Akmar Talib[5]** [1,2,3,] Faculty of Business and Management Science, Kolej Universiti Islam Perlis, Malaysia [4]Centre of Language & General Studies, Kolej Universiti Islam Perlis, Malaysia [5]Veterinary Services Department, Kedah, Malaysia Corresponding Author: [1]aizatmdsin@kuips.edu.my [2]shabudinkuips.edu.my [3]monakuips.edu.my [4]hasrulkuips.edu.my [5]shaharultalib@kedah.gov.my
Social-3	**Welfare Level of Goat Farmers Using Farmer's Exchange Rate Approach in Sidoarjo Regency** **Pawana Nur Indah[1]Risqi Firdaus Setiawan[2,] and Nisa Hafi Idhoh Fitriana[3]** *UPN Veteran Jawa Timur, Surabaya Indonesia.* *Coresponding Author :pawana_ni@upnjatim.ac.id*
Social-4	**Present scenario of solid waste management in india and lessons for developing countries** Ms Pragya Sharma Assistant Professor, Government Girls College, Dungarpur, India
Social-5	**Evaluation of Yield and Artemisinin Content of Six Polyploid Accessions of Artemisia annua Grown in Tawangmangu Region Indonesia** **Usman Siswanto[1,] Dyah Subositi[2,] Ani Isnawati[2,] Yuli Widiyastuti[2]** [1]Agriculture Faculty, University of Tidar Jl. Barito No. 2, Kedung Sari, Kecamatan Magelang Utara, Magelang Jawa Tengah [2]Research Center for Pharmaceutical Ingredients and Traditional Medicine, Medicinal Plant and Traditional Medicine Research and Development CenterNational Research and Innovation Agency, Indonesia, Jl. Raya Lawu 11, Tawangmangu, Karanganyar, Jawa Tengah 57792 Email usiswanto@yahoo.com
Social-6	**Sustainable Agriculture and Food Education (SAFE) for Thai School Lunch Programme** Supot Boonraeng, Chatree Maneekosol, Tanyawan Sridechakul, Piluntasoot Suwannalert, and Naksit Panyoyai Chiang Mai Rajabhat University, Mae-Rim Campus, Saluang Sub-district, Mae-Rim District, Chiang Mai Province 50330 *Corresponding author E-mail: naksit_pan@cmru.ac.th
Social-7	**RISK ANALYSIS OF VANNAMEI SHRIMP CULTIVATION** Endang Yektiningsih[1,] Syihabuddin Ahmad Al Abid[1,] Sri Widayanti[1] [1]Faculty of Agriculture, University of Pembangunan Nasional "Veteran" Jawa Timur Email endangyn@gmail.com
Social-8	**Multidimensional Poverty across Agroecologies in Occidental Mindoro, Philippines** Charles Allen Herpacio[1,] Irham Irham[2,,]Lestari Rahayu Waluyati[2]

	[1]Department of Agricultural Socioeconomics, Faculty of Agriculture, Gadjah Mada University, Yogyakarta 55281, Indonesia [2]Department of Agricultural Socioeconomics, Faculty of Agriculture, Gadjah Mada University, Yogyakarta 55281, Indonesia Corresponding author: charles.a.h@mail.ugm.ac.id
Social-9	**Analysis Sustainability of Coconut Farming (Cocos nucifera Linn) in Indragiri Hilir District, Riau Province, Indonesia** Sisca Vaulina[1,] Elinur[1,] Ilma Satriana Dewi[1,] Selvia Sutriana[2,] Mukhlis[3,] Fega Abdillah[4] [1]Department of Agribusness, Faculty of Agriculture Universitas Islam Riau, Jalan Kaharuddin Nasution No, 113 Perhentian Marpoyan Kota Pekanbaru 28284, Provinsi Riau, Indonesia [2]Department of Agrotechnology, Faculty of Agriculture Universitas Islam Riau [3]Agricultural Polytechnic, Payakumbuh, West Sumatera [4]Graduate Student Department of Agrotechnology, Faculty of Agriculture Universitas Islam Riau Corresponding author: siscavaulina@agr.uir.ac.id
Social-10	**Detection of SARS-CoV-2 from Cats with Positive COVID-19 Owners in Bandung, Indonesia** Roostita Lobo Balia[1,2,] Fauzi Rohman[3,] Okta Wismandanu[1,2,] Lidya Chaidir[4,5,] Tyagita Hartady[1,2,] Pranyata Tangguh Waskita[1,3,] Vesara Ardhe Gatera[6,] Sarasati Windria[1,2,] Mas Rizky AA Syamsunarno[4,5,] Gemilang Lara Utama[7,8] [1]Department of Public Health, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia. [2]Veterinary Medicin Study Program, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia, [3]Master Program in Biotechnology, Graduate School, Universitas Padjadjaran, Bandung, Indonesia, [4]Department of Biomedical Sciences, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia. [5]Research Center for Translational Biomaker Research, Universitas Padjajaran Jatinangor, Indonesia. [6]Department of Biology Pharmacy, Faculty of Pharmacy, Universitas Padjajaran Jatinangor, Indonesia. [7]Faculty of Agro-Industrial Technology, Universitas Padjadjaran, Bandung, Indonesia.8Center for Environment and Sustainability Science, Universitas Padjadjaran, Bandung, Indonesia.
Social-11	**Analysis Of The Influence Of Agricultural Sektor Economic Growth On Rural Poverty Level In 34 Provinces In Indonesia** Wardha Tia Ivani[1] ,Ilmiawan Auwalin[2] [1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia [2]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia wardhatia.ivani-2019@feb.unair.ac.id
Social-12	**The Impact of the Korean Wave on Exports of South Korean Food Commodities to ASEAN-5 Countries** Alyssa C H Tandy[1] ,Rossanto D Handoyo[2] [1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia [2]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia alyssachiara.handini-2019@feb.unair.ac.id
Social-13	**Analysis of the Work Posture of the Malay Songket Weaving Craftsman Wan Syamsinar Dumai** Fitra[1,] N J Marbun[1,] Yusrizal[1,] T Mesra[1,] Azmi[1,] M Arif[1,] Juni S[1,] and F Anggraeni[1] [1]Industrial Engineering Study Program, Sekolah Tinggi Teknologi Dumai, Riau - Indonesia Email famukhtyfitra@gmail.com, ovibanjarnahor@gmail.com, yusrizalpuket2@gmail.com, trisnamesra74@gmail.com, azmi.omy@gmail.com, pakarifmt@gmail.com, junisaputr4@gmail.com, febyanggraeni16@gmail.com
Social-14	**Building UMKM Sector In The Pandemic and Post Covid-19 Era Through Digital Media and Creative Economy (Case in UMKM Breadfruit Chips and Fan-Fried Banana) in Riau Province.** Fahrial, Tibrani, Fachmi Gunawan, Putra Maulana Faculty of Agriculture, Universitas Islam Riau, Pekanbaru Jl. Kaharuddin NST. No.113, Marpoyan, Pekanbaru 28284, Riau, Indonesia E-mail: fahrial2018@agr.uir.ac.id

Social-15	**Investigating Acceptance of Paylater Payment in Online Food Delivery Services Through a Technology Acceptance Model** Fadlan Hamid Alfebi[1] Bobby Himawan[2] Dwiza Riana[3] Sri Hadianti[4] Magister Program of Computer Science Universitas Nusa Mandiri www.nusamandiri.ac.id14210242@nusamandiri.ac.id, 14210247@nusamandiri.ac.id, dwiza@nusamandiri.ac.id*, sri.shv@nusamandiri.ac.id (*) Corresponding Author
Social-16	**Investigating Acceptance of Paylater Payment in Online Food Delivery Services Through a Technology Acceptance Model** Fadlan Hamid Alfebi[1] Bobby Himawan[2] Dwiza Riana[3] Sri Hadianti[4] Magister Program of Computer Science Universitas Nusa Mandiri www.nusamandiri.ac.id Email 14210242@nusamandiri.ac.id, 14210247@nusamandiri.ac.id, dwiza@nusamandiri.ac.id*, sri.shv@nusamandiri.ac.id Corresponding Author
Social-17	**Evaluation of Technical and Economic Performance of Farm Machinery Hire Services in Indragiri Hulu Region, Province Riau** Zulhanafiah, Ujang Paman, Saipul Bahri Magister Management Agribusiness, Graduate Program of Islamic University of Riau, PekanbaruJl. Kaharuddin NST. No. 113, P. Marpoyan, Pekanbaru 28284, Riau Indonesia Corresponding Author: pamanu@agr.uir.ac.id
Social-18	**Impact Analysis on Income and Increasing Farmer Participation in Small-Scale Irrigation Management during the Covid-19 Pandemic in Lima Puluh Kota District** **Taufika Ophiyandri[a], Bambang Istijono[b,*], Qoyyumi Aulia[b], Bayu Martanto Adji[a], Benny Hidayat[a] and Adi Putra[c]** *[a] Department of Civil Engineering, Andalas University, Indonesia* *[b] Post-Graduate School, Andalas University, Indonesia* *[c]Sumatra River Regional Office V, Indonesia* **Corresponding author: bistijono@eng.unand.ac.id*
Social-19	**Asia Techno Farm Initiative project proposal** Nobutaka Ito Visiting Professor School of Renewable Energy Maejo University, Thailand nobuito@mju.ac.th
Social-20	**BIOECOLOGICAL, TECHNOLOGICAL, AND ETHICAL COMPONENTS AS DEVELOPMENT INDICATORS FOR MELITOURISM SOCIAL ENTERPRISE** AMELIA R NICOLAS, PhD ProfessorCentral Bicol State University of AgricultureBicol, Philippines Email amelia.nicolas@cbsua.edu.ph
Social-21	**Promotional Media Preference for Local Chocolate in the Bicol Market** Ma Teresa B Lirag, Edmundo B Casaul Jr and Ramona Isabel S Ramirez
Social-22	**UNDERSTANDING FACTORS AFFECTING YOUNG CONSUMERS PURCHASE INTENTION OF UNPOLISHED RICE** Hanilyn A Hidalgo, Darlene OronanDepartment of Agribusiness, Central Bicol State University of Agriculture, Philippines hanilynhidalgo@cbsua.edu.ph
Social-23	**The Effect Agricultural Exports on Economics Growth: A Case Study of Indonesia** Eva Nur Kumalasari[1], Ni Made Sukartini[1]

	[1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia Email eva.nur.kumalasari-2019@feb.unair.ac.id
Social-24	**Influence Contribution to Economic Education and Tourism Management Towards Increasing Community Welfare in the Olele Tourism Object Bone Bolango Regency.** Meyko Panigoro[1,] Ardiansyah[2,]Cristian Polamolo[3] [1,2,3]Lecturer at the Faculty of Economics, Universitas Negeri Gorontalo, Indonesia Emailmeyko.panigoro@ung.ac.id, ardiansyah@ung.ac.id·
Social-25	**Assessing selected stingless bee farms in Bicol, Philippines using the indicators of melitourism as a social enterprise** No data [ID= 487]
Social-26	**Satisfaction and Customer Loyalty for Sokan Rice in Bengkulu, Indonesia** Nyayu Neti Arianti[1,] Reflis[1,] Adrian Rizky Rama Putra, Melli Suryanty[1] [1]Department of Agricultural Socio-Economics, Faculty of Agriculture, University of Bengkulu Correspondent Email: nnarianti@unib.ac id
Social-27	**LEGAL PROTECTION FOR THE FRANCHISEE AGAINST UNILATERAL TERMINATION BY THE FRANCHISOR IN FOOD AND BEVERAGE RESTAURANT FRANCHISING AGREEMENTS IN INDONESIA** Ni Luh Made Mahendrawati, IB Gede Agustya Mahaputra, IA Cynthia Saisaria Mandasari Warmadewa University, Bali, Indonesia, Corresponding author: made.mahendrawati@gmail.com
Social-28	**Identify the potential utilization of environmental services and natural tourism in South Halmahera Regency** Aqshan Shadikin Nurdin[1]a, Andy Kurniawan[1,]Ramli Hadun[1,] Abdul Kadir Kamaluddin, Mahdi Tamrin[1,]Rosita[1] Department of Forestry, Faculty of Agriculture, Universitas Khairun, Ternate,North Maluku, Indonesia a)Corresponding author: aqshan@unkhair.ac.id
Social-29	**DETERMINING FACTORS INFLUENCING RURAL TOURISM (A NEXUS OF BALI PROVINCE, INDONESIA)** I Wayan Parwata Faculty of Engineering and Planning, Warmadewa University Email iwayanparwata01@gmail.com
Social-30	**Factors Influencing the Utilization of Dental and Oral Health Services (Case Study at the Matur Health Center, Agam District)** Ibnu Fajar Putra[1,] Anne Putri[2,] Lendrawati[3,] Aries Tanno[4] [1,2)]Magister Manajemen ITB Haji Agus Salim Bukittinggi [3,4)]Universitas Andalas Padang, Indonesia
Social-31	**The Effect of Work Competencies and Workload on Work Motivation and Their Impacts on the Performance of Saiba Operators in the Jambi Regional Police** Aries Tanno[1,] Anne Putri [2,] Deny Juwanda [3] Yulianda Nofika Sari[4,] Siti Maryam[5] [1)]Universitas Andalas, Padang, Indonesia [2,4)]Magister Manajemen ITB Haji Agus Salim Bukittinggi, Indonesia [3)]Magiter Manajemen STIE KBP Padang, Indonesia [5)]Accounting Study Program ITB Haji Agus Salim Bukittinggi, Indonesia
Social-32	**ANALYSIS OF THE INFLUENCE OF MAINTENANCE BANK SYARIAH INDONESIA ON MOBILE BANKING ECONOMIC TRANSACTION ACTIVITIES IN THE TERRITORY OF INDONESIA IN THE LAST WEEK**

	Alamin[1,]Nidaan Alfia, Wahyu Nusantara Illahi,S[3,] Fauziah Sukmawati[4,] Hadi Subeno[5,] Husnul Bashir[6,] Refiter Putra[7,] Wira Andespa[8,] Ahmad Ridwan[9,] Elvi Nasriandani[10,] Zelfia Khairani[11,] Winda Febriani[12,] Asyari[13] [1,2,3,4,5,6,7,8,9,10,11,12,13]Fakultas Ekonomi Dan Bisnis Islam,Uin Sjech M. Djamil Djambek Bukittinggi, Indonesia Email Daffapramuda7@Gmail.com
Social-33	**Analysis of the Influence of Halal Tourism on the Interest of Foreign Wasatawan Case Study on Islamic Tourism Places in West Sumatra** Fifa Alfiona[1],Febrina Adita Putri,Melisa Anggreni[3], Restika[4], Mardhiyya Azhari Bsup[5]sup, Rahma Elsa Fitrianisup[6]sup,Rani Ashari Febriansup[7]sup,Zulfa Suryani[8],Eka Novia Herdiamysup[9]sup,Desma Handayanisup[10]sup, Tifany Yeldi Astuti[11], Vivi Rosdiyanti[12], [1] [1,2,3,4,5,6,7,8,9,10,11,12] Faculty of Economics and Islamic Business, Uin Sjech M. Djamil Djambek Bukittinggi, Indonesia Email: fifaalfiona723@gmail.comAbstract
Social-34	**ANALYSIS OF INFLATION AND RUPIAH EXCHANGE RATE ON MUDHARABAH SAVINGS AT SHARIA COMMERCIAL BANKS** Mesis Rawati[1,] Wewis Gilang Sari[2,] Yolanda Effendy[3,] Siti Aisyah[4,] Herliza Agustin[5,] Febri Rahmita[6,] Selvi Purwaningsih[7,] Ridha Fauzana[8,] Tisa Amelia[9,] Rayzul Hawari[10,] Andriawan[1] [1] Faculty of Islamic Economics and Business, Sharia Economics, State Islamic University of Sjech M.Djamil Djambek Bukittinggi, Indonesia Email yolanda.yy@gmail.com
Social-35	**ANALYSIS OF INFLATION AND RUPIAH EXCHANGE RATE ON MUDHARABAH SAVINGS AT SHARIA COMMERCIAL BANKS** Mesis Rawati[1,] Wewis Gilang Sari[2,] Febri Rahmita[3,] Selvi Purwaningsih[4,] Herliza Agustin[5,] Yolanda Effendi[6,] Siti Aisyah[7,] Ridha Fauzana[8,] Tisa Amelia[9,] Rayzul Hawari[10,] Andriawan[11,] Awaluddin[12] [1,2,3,4,5,6,7,8,9,10,11,12F]aculty of Islamic Economics and Business Sharia EconomicsState Islamic University of Sjech M. Djamil Djambek Bukittinggi, Indonesia Email: mesisrawatiwati@gmail.com
Social-36	**Implementation of Organic Rice Farming Based on Local Wisdom: Case of Rice Farming in Bali Province, Indonesia** Gede Sedana[1] and I Ketut Wirawan[2] [1] Faculty of Agriculture, Dwijendra University, Indonesia Email: gedesedana@gmail.com [2] Faculty of Law, Dwijendra University, Indonesia Email: iketutwirawan@gmail.com

Product

Product-1	**Analysis of Materials Pakaging In Agro-Industrial For Quality Sesame Oil** Luluk Sulistiyo Budi Maruf Pambudi Nurwantara, Dian Ardifa Iswari Faculty of Agriculture. Agrotechnology Studies Program.Merdeka Madiun University.East Java. Indonesia Faculty of Entrepreneurship Muhammadiyah University of Madiun .East Java. Indonesia Email luluksb@unmer-madiun.ac.id
Product-2	**CHARACTERIZATION OF VEGETAL CHITOSAN AS AN EMERGING ANTIMICROBIAL FOOD PACKAGING ALTERNATIVES** Rovina Kobun[1,] Iversen Luk Jun Lam[1,] Mariah Aqilah Mohd Affandy[1,] Mailin Misson[2] [1]Faculty of Food Science and Nutrition, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysia 2Biotechnology Research Institute, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysiarovinaruby@ums.edu.my
Product-3	**Utilization of coffee by-products for kombucha production: evaluation of physicohemical and sensory quality** Murna Muzaifa[1,2,3,] Yusya Abubakar[1,2,3,] Safrida[3,4,] Cut Nilda[1,3,] Irfan[1]

	1Department of Agricultural Product Technology, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia 2Centre for Coffee and Cacao Research, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia 3Halal Research Centre, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia 4Departement of Biology, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia Email murnamuzaifa@unsyiah.ac.id
Product-4	**Design and Analysis of Economic Scale for Downstream Palm Biomass into Palm-Cellulose Blend Bioplastic Industry** Hermawan[1,] Sawarni Hasibuan[2,] Bambang Wahyudiono[3] [1,3] Universitas Pakuan, Bogor, Jawa Barat, Indonesia [2]Universitas Mercu Buana, Jakarta, Indonesia
Product-5	**CHARACTERISTICS OF ORGANIC RED RICE SPOTS (Oryza Nivara) WITH THE ADDITION OF PANDAN LEAF FLOUR** I Ketut Budaraga Eddwina Aidila Fitria Harfon Sagoto Department of Agricultural Product Technology, Faculty of Agriculture, Ekasakti University, Veteran Street No. 26 B Padang, Indonesia Corresponding author: iketutbudaraga@unespadang.ac.id
Product-6	**SURFACE AREA OF INTESTINAL VILLI AND BODY WEIGHT CHICKEN KUB AFTER GIVING NEEM LEAF AQUEOUS EXTRACT (Azadirachta indica) IN DRINKING WATER** DA Yulihastuti[1,] I Setyawati[2] [1]Laboratorium Animal Physiologi Departement Biology, Faculty Mathematic and Natural Sciences, Udayana University [2]Biology Study Program, Faculty of Mathematics, Natural and Earth Sciences. Manado State Universityemail: ariani_dwi@unud.ac.id
Product-7	**Preparation and Characterization of Poly(vinyl alcohol)/ Cellulose Nanocrystal/ Zinc Oxide Biocomposites for Potential Food Packaging Application** Nor Hakimin Abdullah Advanced Materials Research Centre (AMRC), Faculty of Bioengineering and Technology, Universiti Malaysia Kelantan, Locked Bag 100, 17600 Jeli, Kelantan, Malaysia norhakimin@umk.edu.my
Product-8	**Improvement of sensory characteristic of sliced bananas (Musa acuminata Linn.) as a stirred yogurt topping** M E Fauziah[1,] D Yunita[1,] M Muzaifa[1,] E Mugampoza[2] [1]Department of Agricultural Product Technology, Faculty of Agriculture, Universitas Syiah Kuala, Jl. Tgk. Hasan Krueng Kalee No. 3, Darussalam, Banda Aceh 23111, Indonesia [2]Department of Food Science and Technology, Kyambogo University, P.O. Box 1, Kampala, Uganda Email dewi_yunita@usk.ac.id
Product-9	**Enhancement of Antimicrobial Activity Nanogel Hand Sanitizer Containing Eugenol and Citronellal Oil** Asmawati, Irfan[1,] N Arpi[1,] R Moulana[1,] Rasdiansyah[1] [1]Department of Agricultural Product Technology, Faculty of Agriculture, Universitas Syiah Kuala Email asmawati@usk.ac.id
Product-10	**Formulation and Market Potential of Aloe-Buni Functional Drinks** Luh Kade Datrini[1,] Luh Suriati [2,] I Gede Pasek Mangku[2,] Hanylin A Hidalgo[3,] ,Josephine Red[4,] Bartholomew Elopere[2,] Anak Agung Sagung Manik Cindrawati[5,] Ni Luh Putu Sulis Dewi Damayanti[5] [1]Accounting Program Study, Economic Faculty, Warmadewa University, Denpasar, Indonesia. [2]Department of Food Science and Technology, Faculty of Agriculture, Warmadewa University, Bali, Indonesia. [3]Department of Agribusiness, Faculty of Economics and Management, Central Bicol State University of Agriculture, Pili, Philippines. [4]Food Science Department, Faculty of Engineering and Food Science, Central Bicol State University of

	Agriculture, Pili, Philippines. [5]Magister of Science of Agriculture, Postgraduate Program, Warmadewa University, Bali, Indonesia Corresponding author: luhkadedatrini65@gmail.com
Product-11	**Characteristics Evaluation of Sweet Bread Fermented by Liquid Yeast From Fresh Fruits and Dried Fruits** LT Pangesthi[1] and L Sulandari[2] [1,2] Home Economic Department, Universitas Negeri Surabaya, Surabaya, Ketintang Street 60231, Indonesia. Emailluciapangesthi@unesa.ac.id
Product-12	**Effects of Functional Bread Vla Dadih to Pregnant Women on Newborn Length to Prevent Stunting** Helmizar[1,] Indri Juliyarsi[2,] Rince Alfia Fadri[3,] Frima Elda[4,] Yusrawati[5] [1]Department of Nutrition, Faculty of Public Health, Andalas University, Indonesia [2]Department of Animal Husbandry, Andalas University, Padang, Indonesia [3]Department of Food Technology, Agricultural State Polytechnic of Payakumbuh [4]Department of Nutrition, Faculty of Public Health, Andalas University, Indonesia [5]Department of Midwifery, Faculty of Medicine, Andalas University, Indonesia
Product-23	**SENSORY PREFERENCE, NUTRIENTS CONTENT OF VLA DADIH, AND LACTIC ACID BACTERIA ASSESSMENTS OF DADIH** Helmizar[1,] Iza Ayu Saufani[2,] Indri Juliyarsi[3] [1] Department of Nutrition, Faculty of Public Health, Andalas University, West Sumatera, Indonesia [2] Department of Nutrition, Mohammad Natsir Bukittinggi University, West Sumatera, Indonesia [3] Faculty of Animal Science, Andalas University, West Sumatera, Indonesia Email saufani@yahoo.com
Product-24	**THE EFFECT OF ROBUSTA COFFEE (Coffea canephora) LEAF EXTRACT ON TESTICULAR HISTOLOGY OF MICE EXPOSED TO CIGARETTE SMOKE** NGAM Ermayanti[1]a, AASA Sukmaningsih[1,] NMR Suarni[1,] and IGAM Widhyastini[2] [1]Biology Department, Faculty of Mathematics and Natural Sciences, Udayana University Bali, 80361 Indonesia [2]Biology Department, Faculty of Mathematics and Natural Sciences, Nusa Bangsa University Bogor, 16166 Indonesia a)Corresponding author: manikermayanti@unud.ac.id
Product-25	**Cream Cheese Characteristic with Various Carrageenan Concentrations as Stabilizer** Kesuma Sayuti[1,2,] Tuty Anggraini[1] and Jihan Fadhila[1] [1]Food and Agricultural Product Technology, Faculty of Agricultural Technology, Universitas Andalas, Kampus Limau Manis-Padang, Indonesia 251632 Corresponding authorâ€™s e-mail: kesuma@ae.unand.ac.id
Product-26	**QUALITY PROFILE OF CANNED AYAM RARANG AT VARIOUS STERILIZATION DURATION** Baiq Rien Handayani [1,] Mutia Devi Ariyana [1,] Afrisha Sekar Namira [1,] Asep Nurhikmat [2,] Setyaning Pawestri [1] ,Adi Herwahyudi [3] , and Pavalee Chompoorat Tridtitanakiat [4] [1)]Faculty of Food Technology and Agroindustry, University of Mataram, West Nusa Tenggara, Indonesia [2)]Research Center for Food Technology and Processing â€“ National Research and Innovation Agency DI Yogyakarta, Indonesia [3)]PT Yola Pribumi- East Lombok, West Nusa Tenggara, Indonesia [4]Faculty of Agroindustry, Chiang Mai University. Thailand Corresponding author: baiqrienhs@unram.ac.id
Product-27	**IMPLICATIONS OF GREEN PRODUCTS IN THE PALM OIL PROCESSING INDUSTRY IN WEST SUMATRA** Candrianto, Radna Ningsih,[2] ,Desniorita[3]

	[1,2)] Program Studi Manajemen Logistik Industri Agro, Politeknik ATI Padang [3)] Program StudiTeknologi Rekayasa Bioproses Energi Terbarukan, Politeknik ATI Padang Corresponding author: candriantokemenperin@gmail.com
Product-28	**Chemical Analysis and Antibacterial Study of Pineapple Waste Extracts in Multipurpose Cleaning Product Formulations: A Circular Economy Approach** Siti Hanisha Sophia Binti Samat Haron[1,] Nurul Azila Abdul Razak[1,] Nurzawani Md Sofwan[2,] Nur Diana Binti Wakimin[3,] Bohari M Yamin[4,] Nor Wahida Awang[1] [1]Faculty of Applied Sciences, Universiti Teknologi MARA (UiTM) Sarawak Branch, Samarahan 2 Campus, 94300 Kota Samarahan, Sarawak, Malaysia [2]Faculty of Health Sciences, Universiti Teknologi MARA (UiTM) Sarawak Branch, Samarahan Campus, 94300 Kota Samarahan, Sarawak, Malaysia [3]Faculty of Chemical Engineering, Universiti Teknologi MARA(UiTM) Shah Alam, 40450 Shah Alam, Selangor, Malaysia [4]Department of Chemical Sciences, Faculty of Science and Technology, Universiti Kebangsaan Malaysia (UKM), 43600 Bangi, Selangor, Malaysia Corresponding authorâ€™s email: norwahida@uitm.edu.myÂ
Product-29	**Effects of thermal physical starch modifications on physicochemical and functional properties of purple, orange, and white sweet potatoes flour** N Arpi, S Noviasari, and M K Fadhli Agricultural Product Technology Department, Faculty of Agriculture, Universitas Syiah Kuala, Jalan Tgk. Hasan Krueng Kalee 3, Kopelma Darussalam-Banda Aceh 23111, Indonesia *Email: normalina.arpi@unsyiah.ac.id
Product-30	**The potential use of cocoa leaf from pruning waste for developing quality functional drink** Z Zainuri[1,] Y Rusnayanti[2] and S Saloko[1] [1]Faculty of Food Technology and Agroindustry, University of Mataram, Lombok, Indonesia [2]Alumni o Food Technology and Agroindustry, University of Mataram, Indonesia Corresponding author: zainuri.ftp@unram.ac.id
Product-31	**THE EFFECT OF ADDITION OF CARRAGENAN AND CITRIC ACID ON THE STORAGE LIFE OF MORINGA LEAF JELLY DRINK (Moringa oleifera)** Satrijo Saloko, Siska Cicilia, Irena Dwi Mulyaningtias Faculty of Food Technology and Agroindustry, University of Mataram Corresponding Author : s_saloko@unram.ac.id
Product-32	**The Inclusion of Brown Algae Sargassum crassifollium in Diet on Broiler Performance** Maria Endo Mahata, Indah Fitri Sakinah Limbong, Dian Saputri, Roh Franco Tua Cibro Sepri, Zurmiati Faculty of Animal Science , Andalas University, Kampus Limau manis Padang Correspondence author: maria@ansci.unand.ac.id
Product-33	**Increasing the Competitiveness of Agroindustry Sago Products ThroughResource Optimization** Septina Elida,, Azharuddin M Amin, Joko Sutrisno, Darsono Doctoral Program of Agricultural Science, Faculty of Agriculture, Universitas Sebelas Maret (UNS), Surakarta 57126, Central Java, Indonesia. Email: septinaelida62@gmail.com Departement of Agribusiness Faculty of Agriculture, Universitas Islam Riau (UIR). Pekanbaru, 28284, Indonesia. Email:azharuddin@agr.uir.ac.id Departement of Agribusines, Faculty of Agriculture, Universitas Sebelas Maret (UNS), Surakarta, 57126 Central Java Indonesia. Email: jokosutrisno@staff.uns.ac.id and darsono@staff.uns.ac.id
Product-34	**Value Added Analysis and Development Strategy of Canned Traditional Food Sayur Lilin (Saccharum edule)**

	Hamidin Rasulu[1], Angela Wulansari[1], Abdul Kadir Kamaluddin[1], Ikrima M Mustafasup[2]sup, Juharnisup[3]sup, Janiah Husen[4] [1]Faculty of Agriculture, Khairun University, Ternate, Indonesia [2]Faculty of Economy and Business, Khairun University, Ternate, Indonesia [3]Faculty of Fisheries and Marine, Khairun University, Ternate, Indonesia [4]Master Student of Agricultural Science, Khairun University, Ternate, Indonesia *Corresponding author: angela.wulansari223@gmail.com
Product-35	**Agritainment: Development of Agricultural Activities towards Tourism** E Rusdiyana[1,] M L Arwindianti[1,] T Kurnianingsih[1,] Sugihardjo[1,] E Lestari[1,] R Setyowati[1,] Widiyanto[1,] N Wijayanto[2] [1]Agricultural Extension and Communication Study Program, Faculty of Agriculture, Universitas Sebelas Maret, Jl.Ir. Sutami No. 36.A, Kentingan, Jebres, Surakarta, 57126, Indonesia [2)] Travel business study program, Vocational School, Universitas Sebelas Maret, Jl.Ir. Sutami No. 36.A, Kentingan, Jebres, Surakarta, 57126, Indonesia Email eksarusdiyana@staff.uns.ac.id
Product-36	**Mucor sp. (Fungal Philospheric) of Gambir Leaf Surface (Uncaria) as a Biosynthetic Mg-doped ZnO Nanorods Media for Antibacterial Applications** Yetria Rildaa, Eka Satria Putra [a], Syukri Ariefa, Syukria, Anthoni Agustien[ba)]Department of Chemistry, Faculty of Mathematics and Natural Sciences of Andalas University, Campus Unand Limau Manis Padang, 25163, Indonesia [b)]Department of Biology, Faculty of Mathematics and Natural Sciences of Andalas University, Campus Unand Limau Manis Padang, 25163, Indonesia*Corresponding author: yetriarilda@sci.unand.ac.idAbstract
Product-37	**DEVELOPMENT OF GUMMY WITH MIRACLE FRUIT POWDER AS ITS SWEETENER AND ITS PHYSICOCHEMICAL PROPERTIES** Siti Suhara R and Tengku Ezzah, T A Universiti Teknologi MARA
Product-38	**Characterization of Lactic Acid Bacteria Producing Bacteriocin from Smoked Giant Catfish (Arius Thalassinus)** Tita Rialitaa, Sumanty Debby Moodya, Edy Subrotoa, Heditia Febby Susantoa aDepartment of Food Industrial Technology, Padjadjaran University, Jl.Ir. Sukarno km.21 Jatinangor-Sumedang 45363, West-Java, Indonesia Corresponding author: tita.rialita@unpad.ac.id
Product-39	**ASSESSMENT MODEL FOR HALAL PRODUCT: AN APPROACH TO HALAL PERFORMANCE** Dini Wahyuni[1,] Sukaria Sinulingga[2,] Nazaruddin[2,] Juliza Hidayati[2,] Irwan Budiman[3] [1] Engineering Department, Universitas Sumatera Utara, Indonesia, [2] Industrial Engineering Department, Universitas Sumatera Utara, Indonesia, sukariasinulingga45@gmail.com [3] Industrial Engineering Department, Universitas Prima Indonesia, Indonesia, irwanb01@gmail.com Email dini@usu.ac.id
Product-40	**Eggshell as an adsorbent for removingÂ metallic ions (Pb) and (Fe) in aqueous solutions** EkaSriYusmartinicorespondingauthour , Atikah, Mardwita, Suli Fakultas Teknik, Program Studi Teknik Kimia, Universitas Muhammadiyah Palembang
Product-41	**Efficacy of Marasmius sp in the Production of Laccase with a Submerged Fermentation System in the Addition of Substrate from Rice Straw and Corncobs** Tri Yuliana[1,] Agra Maharddhika[1,] Tita Rialita[1,] Ratu Safitri[2]

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Product-42	**PHYSICAL CHARACTERISTICS OF INSTANT NOODLE WITH VARIATION OF AMOUNT OF MULU BEBE BANANA FLOUR AND EGG** Erna Rusliana Muhamad Saleh[1,] Yusnaeni[2] and Syamsul Bahri[1] [1]Department of Agricultural Product Technology, Universitas Khairun [2]Department of Animal Husbandry, Universitas Khairun Corresponding author email: ernaunkhair@gmail.com
Product-43	**Catfish Waste (*Pangasius sp*.) Fermentation by Probiotics** for Essential Amino Acid and Fatty Acid Production **Ratu Safitri[12)], Eri Sulistiati [2),] Abun[3)] and Tri Yuliana[4)] Yuli Andriani[5)]** [1)]Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, Jl. Raya Bandung Sumedang Km. 21, Jatinangor, 45363, Indonesia [2)]Program Study Of Biotechnology, Post Graduate School Universitas Padjadjaran, Jl. Dipati Ukur, Bandung, Indonesia [3)]Faculty of Animal Husbandry, Universitas Padjadjaran Km. 21, Jatinangor, 45363, Indonesia [4)]Faculty of Agro-Industrial Technology, Universitas Padjadjaran, Bandung, Indonesia [5)] Department of Fisheries, Faculty of Fishery and Marine Science, Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363, West Java, Indonesia

Agriculture

Agriculture-1	**KUB DOC's Growth Rate and Mortality Level Given Commercial Feed** Heri Dwi Putranto[1,] Bieng Brata[1,] Zodi Setiawan[1,]Yossie Yumiati[2] [1]Dept of Animal Science, Fac.of Agriculture, University of Bengkulu, Jalan W.R. Supratman Kandang Limun, Bengkulu 38371, Indonesia [2]Dept of Agribusiness, Fac. of Agriculture, Dehasen University, Jalan Raya Meranti, Sawah Lebar, Bengkulu 38227, Indonesia Email heri_dp@unib.ac.id
Agriculture-2	**The Determinants of Technical Efficiency of Farmers Soybean Production: Empirical Evidence From Tanjab Timur District Jambi Province** Edison[1] [1]Agribusiness Department, University of Jambi Corresponding author Email: ediedison950@yahoo.co.id
Agriculture-3	**Expression of leukocyte and mercury level in acutely intoxicated milkfish with aquaria flushing technology with hibiscus extract** L Kadir[1] and O R P A Nussa[2] [1]Department of Public Health, Faculty of Sport and Health Science, Gorontalo State University, Jalan Jenderal Sudirman No, 6 Gorontalo 96128 [2]Department of Veterinary Medicine, Universitas Wijaya Kusuma Surabaya, Indonesia Email asi_1403@ung.ac.id
Agriculture-4	**STUDY OF SEVERAL ECOLOGICAL ASPECTS IN THE LUBUK LARANGAN AREA ALONG THE BATANG BUNGO RIVER, BUNGO REGENCY, JAMBI PROVINCE, INDONESIA**

	[1,2]Rini Hertati, [2]Indra J Zakaria, [2]Dahelmi Dahelmi, [2]Wilson Novarino [1]Department of Fisheries Resources Utilization, Faculty of Fisheries, Muara Bungo University Jambi, Indonesia [2]Faculty of Mathematics and Natural Sciences, Andalas University, Padang, West Sumatra, Indonesia..
Agriculture-5	**Identification of Genes Under Salinity Stress in Upland Rice Lines as a New Genetic Source for Coastal Breeding Programs** Reny Herawati[1,] Masdar[1,] Marulak Simarmata[1] [1)]Department of Crop Production, Faculty of Agriculture, University of Bengkulu
Agriculture-6	**EVALUATING THE POTENTIAL OF FERMENTED LEGUMINOUS PLANT LEAVES AS A FERTILIZER FOR RICE (Oryza sativa) PRODUCTION** Roger Y Ibaez, Jr, Jacob Frederick P Velza, Cristito C Pelayo Jr Cawayan Campus, Dr. Emilio B. Espinosa Sr. Memorial State College of Agriculture and Technology, 5405, Philippines
Agriculture-7	**The Genetic Profile of the Walik Kembang Sula (Ptilinopus melanosphila) Based on mtDNA COI** Sariffudin Fatmona, Abdurahman Hoda, Oktora Dwi Putranti, Gunawan Study Program of Animal Production, Agricultural Fakulty, Khairun University, Jl. Gambesi Ternate South, Maluku Nort, 97719 Email Author: Sariffudinunkhair2002@gmail.com.
Agriculture-8	**SCREENING OF LOCAL VARIETIES OF RICE (Oryza Sativa L.). SOUTH SUMATRA USING PEG 6000 SOLUTION AND THE MOLECULAR MARKER METHOD (SSR)** Mery Hasmeda[1,] Fikri Adriansyah and Zendi Alhamami Faculty of Agriculture, Sriwijaya University Palembang Indonesia
Agriculture-9	**Effect of Bio-wastes Combination on Mechanical Properties of Foam Concrete** No data [ID= 124]
Agriculture-10	**STUDY ON THE PHYLOGENETIC OF SEVERAL MELON (Cucumis melo L.) GENOTYPES** Catur Herison, Hevia Purnama Sari, Marwanto and Rustikawati Faculty of Agriculture, University of Bengkulu, Jl. WR Supratman, Kandang Limun, Bengkulu 38120
Agriculture-11	**The Risk of Foot and Mouth Disease in Cattle in the Perspective of Breeders in Medan City, North Sumatra, Indonesia** No data [ID= 136]
Agriculture-12	**Expanding Application of True Shallot Seed Production Technology Indoor to Support Shallot Agribusiness** Daru Mulyono[1,] Winda Nawfetrias[1,] Lukita Devi[1,] Dwi Pangesti Handayani[1,] Irna Surya Bidara[1,] Eka Nurhangga[1,] Delvi Maretta[1,] and Siti Himawati[1] [1]Research Organization for Agriculture and Food, National Research and Innovation Agency (BRIN), Indonesia
Agriculture-13	**HYBRIDIZATION OF BLACK RICE AND AROMATIC RICE** No data [ID= 149] [1] Faculty of Agriculture, Universitas Jember, Jl. Kalimantan 37, Kampus Tegal Boto Sumbersari, Jember, East Java, Indonesia [2] Faculty of Agriculture, Sebelas Maret University (UNS), Jl. Ir. Sutami 36A, Kentingan, Surakarta 57126, Central Java, IndonesiaEmail: ummisholikhah.faperta@unej.ac.id Key word. Hybridization, black rice, aromatic rice

Agriculture-14	**Characterization of the Tyrosinase Gene (TYR) of Aquarium-Maintained Nyalian Fish (Rasbora sp.)** SAMP Suryani[1], D N Sadguna[1], AA Putri Risa A[2], Yoga parawangsa[1], Agus Surya Pratama[1], IGA Dewi Seri Rejeki[3] [1]Program Study of Aquatic Resources Management, Warmadewa University, Indonesia [2]Program Study of Agrotechnology, Warmadewa University, Denpasar, Bali, Indonesia [3]Program Study of Animal Science, Warmadewa University, Denpasar, Bali, Indonesia Corresponding author: E-mail: suryanip@rocketmail.com
Agriculture-15	**Utilization of Spatial Technology in Making Map of Land Suitability Class for Mango (Mangivera indica L.) Plants in South Langowan District, Minahasa East Coast** Sandra Pakasi[1] ,Wiske Rotinsulu[1], Fangky Paath[1] [1]Agrotechnology Study Program, Agriculture of Faculty, Sam Ratulangi University, Manado 95115, Indonesia
Agriculture-16	**Effect Of NPK 12:12:17:2+TE Fertilizer and Coconut Husk Ash as Amilioran On Growth And Photosynthesis Of Oil Palm Seedlings in Peat Media** Fathurrahman F[1],,Qhairil Fajar [1], Siti Zahrah[1], Febri Doni[2], Maizar[1], Zaldi Arman[3] [1] Department of Agrotechnology, Faculty of Agriculture, Universitas Islam Riau, Pekanbaru, 28284 Indonesia [2] Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, Jatinangor 45363, West Java, Indonesia3Department of Food, Food Crops and Horticulture Riau Province, Indonesia Correspondence: fathur@agr.uir.ac.id
Agriculture-17	**Efficiency of Mud Crab Capture Fisheries (Scylla serrata) in Bengkulu Province, Indonesia** Indra Cahyadinata[1], Irnad[1], Ayub Sugara[2] [1]Department Socio Economic of Agriculture, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia [2]Department Marine Science, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia Coresponding author : irnadardenis@yahoo.co.id
Agriculture-18	**EXPLORATION OF STREPTOMYCES SP. BACTERIA IN THE ALAS PURWO FOREST AREA, BANYUWANGI, EAST JAVA AND TESTS OF ITS INHIBITORY AGAINST RALSTONIA SOLANACEARUM CAUSES OF BACTERIAL WILT IN POTATO PLANTS** Retno Kawuri[1] Made Pharmawati[2], Ida Bagus Gede Darmayasa[1], Dinda Nur Malik Insani[3], Jovita Illona Vania[3] [1]Microbiolgy Laboratory, Biology Study Program, F. MIPA Udayana University Bali Indonesia [2]Genetica Laboratory, Biology Study Program, F. MIPA Udayana University Bali Indonesia [3]Student Biology Study Program, F. MIPA Udayana University Bali Indonesia email retnokawuri@unud.ac.id
Agriculture-19	**Potential of Secunder metabolic of Trichoderma sp against Purple Blotch Disease and Shallot Yields** Sri Wahyuni Manwan[1], Ni Putu Sutami[2] dan Ni Made Delly Resiani[1] [1]Research Centre for Horticulture and Crop Estate, National Research and Innovation Agency Jl. Raya Jakarta â€“ Bogor, Cibinong, Jawa Barat [2]Assessment Institute for Agricultural Technology â€“ Bali, Indonesian Agency for Agricultural Research and Development (IAARD), Ministry of Agriculture. Denpasar, Bali Emails dellyresiani67@gmail.com
Agriculture-20	**Flavonoid from Chloroform Extract of Samanea saman Jacq. Leaves as an Inhibitor of The Growth of Fusarium solani, The Cause of Dragon Fruit Stem Rot Disease** Wiwik Susanah Rita[1], Dewa Ngurah Suprapta[2], I Made Dira Swantara[3],I Made Sudana[2] [1]Chemistry Department, Faculty of Math. and Natural Sciences, Universitas Udayana, Kuta, Bali, Indonesia [2]Agricultural Department, Faculty of Agriculture, Universitas Udayana Denpasar, Bali, Indonesia [3]Master of Chemistry Department, Faculty of Math. and Natural Sciences, Universitas Udayana, Denpasar, Bali, Indonesia Email susanah.rita@unud.ac.id

Agriculture-21	**Evaluation of Genetic Diversity of Geronggang (Cratoxylum arborescens) from Riau Using Random Amplified Polymorphic DNA (RAPD) Markers for Peatlands Restoration** Deviona[1], Dewi Indrayani Roslim[2] Chairul[3], Ayu Aizatul Natasya[4] [1]Agrotechnology Departement, Faculty of Agriculture, Riau University Kampus Bina Widya Jl. HR. Subrantas Km 12,5, Pekanbaru 28293, Indonesia [2]Biology Departement, Faculty of Mathematics and Science, Riau University Kampus Bina Widya Jl. HR. Subrantas Km 12,5, Pekanbaru 28293, Indonesia [3]Chemical Engineering Departement, Faculty of Engineering, Riau University Kampus Bina Widya Jl. HR. Subrantas Km 12,5, Pekanbaru 28293, Indonesia [4]Master of Agricultural Science, Faculty of Agriculture, Riau University Kampus Bina Widya Jl. HR. Subrantas Km 12,5, Pekanbaru 28293, Indonesia ayuaizatul.natasya57@gmail.com
Agriculture-22	**The Effect of Some Spice Essential Oils on the Shelf-Life of Strawberry (Fragaria x ananassa) during Cold Storage** Yuliani Aisyah[1], Asmawati[1], and Ismail Sulaiman[1] [1]Department of Agricultural Product Technology, Faculty of Agriculture, Universitas SyiahKuala, Banda Aceh, Indonesia 23111 Corresponding Author: yuliani.aisyah@unsyiah.ac.id
Agriculture-23	**Organic paddy field management increases earthworm density and biomass** W S Dewi[1], E Istikomah[1], Iksaniah[1] and H A Salsabila[1] [1]Soil Science Department, Agriculture Faculty of Universitas Sebelas Maret, Jl. Ir. Sutami No. 36, Surakarta 57126, Central Java, Indonesia Corresponding author: widyatmanisih@staff.uns.ac.id
Agriculture-24	**Characteristics of Weeds due to the Application of Different Types and Doses of Organic Mulch to Soybean** Hasanuddin Hasanuddin, Siti Hafsah, Jumini Jumini, and Nurul Ikhwani Department of Agrotechnology Faculty of Agriculture Universitas Syiah Kuala, Banda Aceh, Indonesia email hasanuddin@unsyiah.ac.id
Agriculture-25	**Effect of phosphate nutrient sources and phosphate-solubilizing bacteria applications on sorghum in acid soils** D M Tarigan, S Utami, M I Sentosa, A Lestami, W A Barus, and A Munar Department of Agrotechnology, Faculty of Agriculture, Universitas Muhammadiyah Sumatera Utara, Mukhtar Basri No. 3, Medan, Indonesia Republic-20238. E-mail: dafnimawar@umsu.ac.id
Agriculture-27	**Differences in Growth and Yield of Moringa oleifera Leaves by Submerssion Seeds and Variations of Planting Medium** Rini Sulistiani[1], Surianto[2], Bambang Arif Rahmadi[3], and Wan Arfiani Barus[1] [1]Universitas Muhammadiyah Sumatera Utara, Faculty of Agriculture, Program study of Agrotechnology. [2]United Kingdom Indonesian Plantation. Gedung HSBC, Jl. Pangeran Diponegoro No.11, Madras Hulu, Kec. Medan Polonia, Kota Medan, Sumatera Utara 20151. [3]Universitas Muhammadiyah Sumatera Utara, Faculty of Agriculture, Student of Program study of Agrotechnology. Corresponding author email: rinisulistiani@umsu.ac.id.
Agriculture-28	**Chemical and Functional Properties of Gelatin Extracted from Skin and Bones of Ocean Triggerfish in Comparison with Commercial Fish Gelatin** Fahrizal[1,2], Normalina Arpi[2], M Dani Supardan[3], Sugeng Heri Suseno[4], Fazilatul Husna[2], Dara Amanatillah[2] [1]Program Studi Doktor Ilmu Pertanian, Universitas Syiah Kuala, Banda Aceh [2]Program Studi Teknologi Hasil Pertanian, Universitas Syiah Kuala, Banda Aceh

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Agriculture-29	**Growth, productivity and morphological character of katuk (Sauropus androgynus (L.)Merr.)plants on various shading intensity** A Rahayu[1], N Rochman[1], W Nahraeni[2] and Yuliawati[1] [1]Department of Agrotechnology, Agriculture Faculty, Djuanda University, Bogor, Indonesia [2]Department of Agribusiness, Agriculture Faculty, Djuanda University, Bogor, Indonesia email arifah.rahayu@unida.ac.id
Agriculture-30	**IN VITRO TESTING OF FUNGAL AND BACTERIAL ANTAGONIST GROUPS TO Fusarium sp. WHICH CAUSES WILT DISEASE OF AWAK BANANA** Susanna[1], Alfizar[1], Asyifa Thahirah[1] [1]Department of Plant Protection, Faculty of Agriculture, Universitas Syiah Kuala, Banda Aceh, Indonesia Email Correspondence : Susanhasan@usk.ac.id
Agriculture-31	**RESPONSE TO THE GROWTH AND PRODUCTION OF GREEN BEAN (Vigna radiata L) PLANT WITH THE APPLICATION OF HUSK CHARCOAL AND SEVERAL PLANT SPACE** Luh Kartin[1], Ida Bagus Komang Mahardika[2], Made Sri Yuliartin[3], Anak Agung Ngurah Mayun Wirajaya[4] [1,2,3,4] Agrotechnology Department, Faculty of Agriculture, Warmadewa University, Indonesia Email luhkartini59@gmail.com, gusmahardika62@gmail.com, yuliartinisri@gmail.com, mawir61@gmail.com
Agriculture-32	**VEGETATIVE GROWTH AND ROOT DEVELOPMENT OF POTATO PLANTS (Solanum tuberosum L.) WITH THE APPLICATION OF MYCORRHIZA AND RHIZOBACTERIA** W Warnita[1], Yulmira Yanti[2], Rohmi Suwinda[1] [1]Department of Agronomy, Faculty of Agriculture, Andalas University. Padang 25163, West Sumatra, Indonesia [2]Department of Plant Protection, Faculty of Agriculture, Andalas University. Jl. Universitas Andalas, Limau Manih, Padang 25163, West Sumatra, Indonesia warnitaagr.unand.ac.id
Agriculture-33	**Efforts to produce the off-season guava (Psidium guajava cv. Kristal) and improve fruit quality through fertilization and pruning** I Nyoman Rai[1], I Wayan Wiraatmaja[1], and Ni Komang Alit Astiari[2] [1]Agroecotechnology Stady Program, Faculty of Agriculture, Udayana University; [2]Agrotechnology Study Program, Faculty of Agriculture, Warmadewa University Correspondence: rainyoman@unud.ac,id
Agriculture-34	**Effect Ethanol Extract of Moringa Leaf on Liver Histopathology White Rat (Rattus norvegicus) induced by Meloxicam** N M R Suarni, N G A M Ermayanti, A ASG A Sukmaningsih Study Program of Biology, Faculty of Mathematic and Natural Sciences Corresponding author : rai_suarni@unud.ac.id
Agriculture-35	**Coconut Plantation Mapping Using Visual Interpretation Method in Bolaang Mongondow Utara Regency, North Sulawesi, Indonesia** Wiske Rotinsulu[1], Semuel Runtunuwu[1], Sandra Pakasi[1], Badrun Zaini[2] [1]Fakultas Pertanian Universitas Sam Ratulangi [2]BPKH Wilayah II Palembang Email wiske_rotinsulu@unsrat.ac.id
Agriculture-36	**The Effectiveness of Local Ingredients and Varieties To Main Pests and Diseases and Shallot Yields**

	Ni Made Delly Resiani[1,] Wayan Sunanjaya[2,] and Putri Risa Andriani[3] [1]National Research and Inovation Agency. M.H.Thamrin No.8 Jakarta 10340 (INDONESIA) [2]Assessment Institute for Agricultural Technology â€“ Bali, Bypass Ngurah Rai-Bali, 80222 (INDONESIA) [3]Warmadewa University, Terompong No. 24 Denpasar Bali 80239 (INDONESIA) Emails dellyresiani67@gmail.com
Agriculture-37	**CONSORTIUM SOLID FORMULA OF Bacillus spp. TO CONTROL BACTERIAL WILT ON CHILI PLANTS** Yulmira Yanti[1,] Hasmiandy Hamid[1,] Nurbailis[1,] Yaherwandi[1,]Ujang Khairul[1,] Padel Rizki Pratama[2] [1]Plant Protection Departemen, Faculty of Agriculture, Universitas Andalas, Padang, West Sumatra 25163 [2] Student Departement Plant protection, Faculty Agriculture, Universitas Andalas, Padang West Sumatera, 25163 Corresponding author: yy.anthie79@gmail.com, mira23@agr.unand.ac.id
Agriculture-38	**Physicochemical Characteristics of Black Garlic made from Lumbu hijau and Lumbu putih Garlic Varieties** M Farras Abiyyuddin[1,] Winiati P Rahayu[2,] Nancy Dewi Yuliana[2,3] [1]Postgraduate student of Food Science, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia [2]Department of Food Science and Technology, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia [3]SouthEast Asia Food and Agricultural Science and Technology Center, Bogor Agricultural University (IPB University), Bogor, Indonesia Email wpr@apps.ipb.ac.id
Agriculture-39	**Composition of Snails (Gastropoda:Mollusca) in Rice Fields Area Around Baturiti Subdistrict, Bali Province.** NM Suartini[1,] NW Sudatri[2,] IK Putra Juliantara[1] [1]Animal Taxonomy Laboratory, Biology Study Program, Faculty of Mathematics and Natural Sciences, Udayana University-Bali [2]Animal Physiology Laboratory, Biology Study Program, Faculty of Mathematics and Natural Sciences, Udayana University-Bali corresponding email: made_suartini@unud.ac.id
Agriculture-40	**APPLICATION OF ORGANIC FERTILIZER TO SHALLOT YIELDS IN VARIOUS MULCHES** Ir Made Sri Yuliartini,MSi Ir Luh Kartini, MSi Ir Anak Agung Ngurah Mayun Wirajaya, MM Dr Ir Ida bagus Komang mahardika, MSi Agriculture Faculty, Warmadewa University Email : yuliartinisri@yahoo.co.id
Agriculture-41	**EXPLORATION OF INDIGENOUS ACTINOBACTERIA FOR CONTROL OF BACTERIAL LEAF BLIGHT (Pantoea ananatis) AND INCREASED PRODUCTION OF SHALLOTS** Yulmira Yanti[11,,]Hasmiandy Hamid[1,] Nurbailis[1,] Yenny Liswarni[1,] Reza Sumarta Ilyas[2] [1]Department of Plant Protection, Agriculture Faculty, Universitas Andalas, Limau Manis, Padang, Indonesia 25163 [2]Student in Plant Protection Department, Agriculture Faculty, Universitas Andalas, Limau Manis, Padang, Indonesia 25163 Corresponding author: yy.anthie79@gmail.com, mira23@agr.unand.ac.id
Agriculture-42	**The use of gibberellin for germination enhancement of true seed of shallot in different environmental conditions.Â** Delvi Maretta, Winda Nawfetrias, Dwi Pangesti Handayani, Rina Aprianti, Siti Himawati, Irna Surya Bidara, Djatmiko Pinardi, Jeni Hariyanti, Akhmad Jufri, Fajar Adi Marianto, Ahmad Suhendra
Agriculture-43	**Chemical Composition and Antibacterial Activity of Pepper (Piper nigrum L.) Essential Oil Against Staphylococcus aureus and Escherichia coli**

	Sarifah Nurjanah[1,] Edy Suryadi[1,] Ahmad Thoriq[1,] Nurul Ainina[1,] Efri Mardawati[2,] Muhammad Gilang Ramadhan[3] [1]Department of Agricultural Engineering and Biosystems, Faculty of Agro-Industrial Technology, Padjadjaran University; Jl. Bandung-Sumedang Km 1, Jatinangor, Sumedang [2]Department of Agro-Industrial Technology, Faculty of Agro-Industrial Technology, Padjadjaran University; Jl. Bandung-Sumedang Km 1, Jatinangor, Sumedang [3A]groindustry Study Program, Subang State Polytechnic, Jl. Brigadier General Katamso No. 37, Subang email [1]sarifah@unpad.ac.id
Agriculture-44	**The effect of goat urine organic fertilizer concentration to growth and yield of several potato varieties** Indra Dwipa, Aprizal Zainal, Sari Rahmadhini Department of Agronomy, Faculty of Agriculture, Andalas University, Address, Padang, West Sumatera, 25163, Indonesia E-mail: 1965indradwipa@gmail.com
Agriculture-45	**APPLICATION OF NONI FRUIT (Morinda citrifolia L.) EXTRACT WITH Cu AND Zn SUPPLEMENTED IN THE RATION ON PERFORMANCE CHICKEN SENTUL OF PHASE DEVELOPER** Tuti Widjastuti, Indah Komala, Wiwin Tanwiriah Faculty of Animal Husbandry, Universitas Padjadjaran. Jl. Raya Bandung â€“ Sumedang Km 21 Sumedang 45363, West Java, Indonesia Corresponding author email: tuti.widjastuti@unpad.ac.id
Agriculture-46	**Identification of an arbuscular mycorrhizal fungus from Glomaceae that colonizes Tithonia diversifolia at different altitudes in the tropics** Agustian[1,] Nurmaida[1,] Lusi Maira[1] [1]Soil Biology Laboratory, Faculty of Agriculture, Universitas Andalas, Padang, West Sumatra, Indonesia (25163) Corresponding Author: agustian@agr.unand.ac.id
Agriculture-47	**ACTIVITY OF SPIKED PEPPER FRUIT(*Piper aduncum* L) EXTRACT FROM PT SEMEN PADANG'S EX-MINING LAND AGAINST *Spodoptera frugiperda* JE Smith (Lepidoptera: Noctuidae)** **EC Lina [1*] , A Aprilia [1] , Hidrayani [1] , A Andini[1]** [1]Department of Plant Protection, Faculty of Agriculture, Andalas University ,Padang [*]eka_candra@agr.unand.ac.id
Agriculture-48	**Responses of Bali Local Rice â€˜Merah Cendanaâ€™ and â€˜Mansurâ€™ to Salt Stress at Flowering Stage** Made Pharmawati[1]a, I Made Anom Sutrisna Wijaya[2] [1]The Biology Study Program, Faculty of Mathematics and Natural Sciences, Udayana University, Jalan Raya Kampus Unud, Badung, Bali, 80361, Indonesia [2]The Agricultural and Biosystem Engineering Study Program, Faculty of Agricultural Technology, Udayana University, Jalan Raya Kampus Unud, Badung, Bali, 80361, Indonesia Corresponding author: made_pharmawati@unud.ac.id
Agriculture-49	**THE SUSTAINABLE PIG NUTRITION BY PARTIAL REPLACEMENT OF SOYBEAN MEAL WITH COPRA MEAL** Chanuthit Thomtisang[1,] Doungporn Amornlerdpison[2,] Liang Chou Hsia[3] and Wantamas Jantasin[1] [1]Faculty of Animal Science and Technology, Maejo University, Thailand [2]Centre of Excellence in Agricultural Innovation for Graduate Entrepreneur, Faculty of Fisheries Technology and Aquatic Resources, Maejo University, Thailand [3]Department of Tropical Agriculture and International Cooperation, National Pingtung University of Science and Technology, Taiwan, ROC*Corresponding author: wantamasj@gmail.com

Agriculture-50	**UTILIZATION OF FERMENTED COFFEE SKINS AS A SUBSTITUTIONAL FEED FOR LIVESTOCK** I D N Sudita, Stefanus N, and Marselina N Agricultural Science Masters Program, Warmadewa University Postgraduate Program idnsuditagmail.com
Agriculture-51	**Assessing Butterfly Species Composition in Universitas Andalas Campus Complex, West Sumatra** Henny Herwina[1,] Dahelmi[1,] Siti Salmah[1,] Muhammad N Janra[1,] Elpe Bibas[1,] Taufik Rahman[1] and Puspita Sari[1] [1]Biology Department, Faculty of Mathematics and Natural Science, Universitas Andalas, Jalan Kampus Unand Limau Manis Pauh Padang, West Sumatra, Indonesia 25163 [a)] Corresponding author: hennyherwina@sci.unand.ac.id
Agriculture-52	**AGRICULTURAL LAND USE OPTIMIZATION ON EROSION TOLERANCE LIMIT IN SINGKARAK SUMPUR RIVER FLOW REGION** Edwin[1,] Iwan Ridwansyah[2,] Zahlul Ikhsan[1] [1]Agroecotechnology Department, Andalas University, West Sumatera, Indonesia [2]Limnology Research Centre, The Indonesian Institute of Sciences, West Java, Indonesia Correspondence email: edwinanas@agr.unand.ac.id
Agriculture-53	**USE TECHNIQUE OF ASPIRATOR SIMPLE FOR ARTIFICIAL INSEMINATION CEMENT MALE TO MOJOSARI DUCKS IMPROVED DUCK HACHING** [1]Tertia Delia Nova, [2]Linda Suhartati [1]Department of Livestock Production Technology, Faculty of Animal Husbandry, Andalas University [2] Animal Husbandry Study Program, Faculty of Animal Husbandry, Payakumbuh Campus, Andalas University
Agriculture-54	**Rainfall Erosivity Estimation of Cupak Tangah area using 5-minute rainfall data** Mohammad Agita Tjandra Agricultural and Biosystems Engineering Dept.Andalas UniversityPadang, Indonesia Email mohagita@ae.unand.ac.id
Agriculture-55	**EFFECT OF CONTAMINATION FROM GLYPHOSATE ON CHEMICAL PROPERTIES OF INCEPTISOLS AMELIORATED WITH FORMULATION OF SUB-BITUMINOUS COAL AND RICE HUSK BIOCHAR** **HerviyantiHerviyanti[1*], Amsar Maulana[2], Mimien Harianti[1], Arestha Leo Lita[3], Teguh Budi Prasetyo[1], Rezha Tri Khurnianto[4], Pitri Juwita[4], Syafrimen Yasin[1], Ridho Ryswaldi[5]** *[1]Department of Soil Science and Land Resource, Agriculture Faculty, Andalas University, Limau Manis, Padang City, 25164, Indonesia* *[2]Doctoral Student of Agricultural Science, Postgraduate of Andalas University, Limau Manis, Padang City, 25164, Indonesia* *[3]Magister Student of Soil Science, Postgraduate of Andalas University, Limau Manis, Padang City, 25164, Indonesia* *[4]Bachelor Student of Soil Science, Agriculture Faculty, Andalas University, Limau Manis, Padang City, 25164, Indonesia* *[5]Departement of Management, Economic and Business Faculty, Andalas University, Limau Manis, Padang City, 25164, Indonesia* *Email: herviyanti@agr.unand.ac.id
Agriculture 56	**AVAILABILITY OF PHOSPHORUS ON EX-GOLD MINING SOIL AMELIORATED WITH SUB-BITUMINOUS COAL AND ACTIVATION OF SUB-BITUMINOUS COAL WITH NaOH** **Amsar Maulana[1], Mimien Harianti[2], Teguh Budi Prasetyo[2], Herviyanti Herviyanti[2*]** *[1]Doctoral StudentAgricultural Science, Postgraduate of Andalas University, Limau Manis, Padang City, 25164, Indonesia*

	[2]Department of Soil Science and Land Resource, Agriculture Faculty, Andalas University, Limau Manis, Padang City, 25164, Indonesia *Email corresponding: herviyanti@agr.unand.ac.id

Food

Food-1	**Extraction of Bioactive Components of Cacao Fruit Peel (Theobroma cacao, L.) With Solvent Concentration Optimization, Temperature and Extraction Time** Aisman, Novelina, dan Fadila Novita Technology of Agricultural Product, Faculty of Agricultural Technology, Andalas University, Kampus Limau Manis Manis, Padang, Indonesia 25163 Email: aisman@ae.unand.ac.id
Food-2	**Consumer Preferences In Purchasing Packaged Meatball Products A Case Study of Wonokromo Traditional Market, Surabaya** Syarif Imam Hidayat, Pawana Nur Indah Agribusiness Department, Universitas Pembangunan Nasional â€œVeteranâ€ • Jawa Timur Surabaya, Indonesia Email pawana_ni@upnjatim.ac.id
Food-3	**Quality Characteristics of Surimi Fish Kamaboko Glossogobius giuris** Yuszda K Salimi[1,] Rahyuni Domili[2,] Rieny Sulistijowati[2,] Hamid Majelis[1] [1]Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Negeri Gorontalo, Gorontalo 96128, Indonesia [2]Department of Fisheries Product Technology, Faculty of Fisheries and Marine Sciences, Universitas Negeri Gorontalo, Gorontalo 96128, Indonesia
Food-4	**Callus Development of Curcuma mangga in Several Combinations of Benzylaminopurine and Naphthalene Acetic Acid Concentration** Rustikawati[1,] Gita Bonita Turnip[1,] Catur Herison[1,] Marlin[1,] Atra Romeida[1,] Reny Herawati[1] and Entang Inoriah[1] [1]Dept Crop Production, Faculty of Agriculture, University of Bengkulu Jln W.R. Supratman, Kandang Limun, Bengkulu, 38371, Indonesia email rustikawati@unib.ac.id
Food-5	**The Effect of nanocoating-konjac incorporation thymol oil on shelf-life of Siamese orange** Luh Suriati, I Gede Pasek Mangku, Ni Luh Putu Sulis Dewi Damayanti, Anak Agung Sagung Manik Cindrawati, Ngakan Putu Gede Satria Kesumayasa, I Wayan Widiantara Putra
Food-6	**CHARACTERISTICS OF THE CHEMICAL PROPERTIES OF PALM JUICE (Arengga Pinnata Merr) WITH THE ADDITION OF CHITOSAN COCONUT CRAB SHELL** Hamidin Rasulu[1,,]Janiah Husen[1,] Nurjannah Albaar[1] [1]Departement of Agricultural Products Technology, Faculty of Agriculture, Universitas Khairun, Ternate, Indonesia Coressponden Author: hamidinrasulu@yahoo.com
Food-7	**PERFORMANCE AND CARCASS CHARACTERISTICS OF MALE QUAILS GIVEN FERMENTED DRAGON FRUIT PEEL THROUGHT N DRINKING WATER** GAMKristina Dewi[1,] Wirapartha[1] And Apni TUmiarti[1] [1]Laboratorium of Poultry Science, Faculty of Animal Science, Udayana UniversityEmail: kristinadewi@unud.ac.id
Food-10	**The Effect of Integrated Fertilizer on Land Efficiency and Functional Food Crops Quality of Sweet Corn with Vegetable Soybean by Intercropping System** Maria Theresia Darini[1,] Evi Setiawati[1,] Sri Widata[1] and Ari Astuti[2]

	[1] Program study Agroteknology Agriculture Faculty of University Sarjanawiyata Tamansiswa Yogyakarta [2] Program study Agribusinis Agriculture Faculty of University Sarjanawiyata Tamansiswa Yogyakarta Corresponding Author e-mail. darini@ustjogja.ac.id
Food-11	**Jamu : A Combination of Various Spices as Feed Additive for Bali Cattle Experiencing Long Trip Stress** SAA Tani Department of Animal Production , Faculty of Animal Science, Jambi University Mendalo Darat, MuaroJambi, 36361, Indonesia Email: sriarnita.1963@gmail.com
Food-12	**A FORMULATION OF MANGO RIPENESS INDICATOR MADE FROM TAPIOCA AND AMMONIUM MOLYBDATE** Endang Warsiki[1,] Adzimatinur Asfiani[1,] Chananpat Rardniyom[2] [1]Department of Agroindustrial Technology, Faculty of Agricultural Engineering and Technology, IPB University, Fateta Building, Dramaga Campus of IPB, Bogor 16002, Indonesia [2]Department of Food Sciences and Technology, Faculty of Agro-industry and Engineering, Maejo University, Chiang Mai-Phrao Road, Nong Han Subdistric, San Sai District, Chiang Mai Province 50290, Thailand Email endangwarsiki@apps.ipb.ac.id
Food-13	**Food Security Status of Mud Crab Fishermen (Scylla serrata) in Bengkulu Province, Indonesia** Nusril[1,] Indra Cahyadinata[1,] Medi Nopiana[2] [1]Department Socio Economic of Agriculture, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia [2]Department Management, Faculty of Economic, University of Singaperbangsa Karawang, Indonesia Coresponding author : nusril.unib@gmail.com
Food-14	**GONAD PROTECTIVE EFFECT OF PLETEKAN (Ruellia tuberosa L.) LEAVES EXTRACT IN DIABETIC RATS (Rattus norvegicus)** N I Wiratmini[1,] A A S A Sukmaningsih[1,] A A I M Padmisuari,[2] N W S Antari,[2] [1] Department of Biology, Faculty of Mathematics and Natural Sciences Udayana University, Bukit Jimbaran Campus, Badung, Bali, Indonesia. [2] Institute of Technology and Health Bali, Indonesia Corresponding author: wiratminiintan@unud.ac.id
Food-15	**Utilization of herbal ingredients in tilapia nursery traditional system** I G P G R Yudana[1,] A Fauziah[1,] [1] Sidoarjo Marine and Fisheries Polytechnic, Sidoarjo, Indonesia Corresponding author: anna.apsidoarjo@gmail.com
Food-16	**The Contribution of Salicylic Acid to the Growth of Brown Rice in Several Levels of Salinity** Wan Arfiani Barus[1,] Aisar Novita[1] and Yoga Prasetyo[1] [1]Universitas Muhammadiyah Sumatera Utara, Jalan Kapten Mukhtar Basri No. 3 Medan, Indonesia, 20238. corresponding Author: wanarfianibarus@umsu.ac.id
Food-17	**Ground Ant Species Community of and Their Roles as Predator of Coffee Berry Borer (Hypothenemus hampei) on Gayo Arabica Coffee Plantations at Different Altitudes.** J Jauharlina[1,] H Husni[1,] TA Febrian[1,] I Destriany[1,] NA Husna[1] [1] Departement of Plant Protection, Faculty of Agriculture, Universitas Syiah Kuala, banda Aceh 23123 Corresponding author: ljauharlina@usk.ac.id
Food-18	**Egg Production Performance of G0 Kokok Balenggek Chicken : Formation of Superior Local Chicken in West Sumatra**

	Husmainia, Linda Suhartatia, Rusfidraaa Faculty of Animal Science Andalas University, West Sumatra, Indonesia *email: husmaini@ansci.unand.ac.id
Food-19	**Mutagenesis of Soybean var.Kipas Putih** Zuyasna Agroteknologi, Faculty of Agriculture, Syiah Kuala University
Food-20	**Antioxidant and Toxicity Activity of Leaf Extract Garuga Floribunda. Decne** Netty Ino Ischak [1,] Yuszda KSalimi[1,] La Ode Aman[1,]Vellia Chantika Potabuga[2,] Rahmi Hulopi[2] [1]Department of Chemistry, State University of Gorontalo [2]Students of the Chemistry study program, State University of Gorontalo Corespondensi : nettyischak@gmail.com
Food-21	**Quality Evaluation of Frigate Mackarel Fish Pindang and Flying Fish Pindang from Fish Processing Centers in Kusamba Village, Klungkung Regency, Bali** I Gde Suranaya Pandit Faculty of Agriculture, Warmadewa University, Bali, Indonesia, Corresponding author: igedesuranayapandit@gmail.com
Food-22	**Microencapsulation Of Noni Fruit Extract (Morinda citrifolia L)with maltodextrin And Its Implementation As Feed Additive on Nutrient Digestibility and Performance of Sentul Chickens** Wiwin Tanwiriah, Leni Nurlaeni, Abun, Tuti Widjastuti, Indrawati Yuda Asmara, Iwan Setiawan Faculty of Animal Husbandry, Padjadjaran University. Jl. Raya Bandung â€“ Sumedang Km 21 Sumedang 45363, West Java, Indonesia Corresponding author email: w.tanwiriah@unpad.ac.id
Food-23	**Potential Antioxidant Activity of Tetragonula laeviceps Honeybee** I Gede Pasek Mangku[1,] I Gusti Bagus Udayana[2,] Hanilyn A Hidalgo[3,] Amelia R Nicolas[4,] Mia Bella Fresnido[5,] Bonevasius Valeriano Nono[6] [1,6] Food Science and Technology Department, Faculty of Agriculture, Warmadewa University, Denpasar, Bali [2] Agriculture Technology Department, Faculty of Agriculture, Warmadewa University, Denpasar, Bali [3] Department of Agribusiness, Faculty of Agribusiness, Central Bicol State University of Agriculture, Camarines Sur, Philippines [4] College of Agriculture and Natural Resources, Faculty of Entomology, Central Bicol State University of Agriculture, Camarines Sur, Philippines [5] Department of Agriecotourism Management, Faculty of Agritourism, Central Bicol State University of Agriculture, Camarines Sur, Philippines
Food-24	**Food-Based Carbohydrate Consumption and Its Determinant Factors in Bengkulu Province, Indonesia** Melli Suryanty SN and Ketut Sukiyono Department of Agricultural Socio-Economics, Faculty of Agriculture, University of Bengkulu *Correspondent Email: melli.suryanty@gmail.com
Food-25	**Effect of Shape and Size Feed on the Growth and Survival Rate Lobsters Panulirus homarus** Amelia Sriwahyuni Lubis, Indra Junaidi Zakaria and Efrizal Biology Department of Andalas University, Padang, West Sumatra, Indonesia
Food-26	**Impact of Stingless bee, Heterotrigona itama, on pollination of purple eggplant (Solanum melongena L.)** Saripah Ulpah[1,] Budi Tjahjono[1] TEdy Sabli[1] ,Sulhaswardi[2,] Rahmat Hidayat[1,] Dedi Ferdi Anto[2] [1]PostGraduate Study, Islamic University of Riau, Jl Kaharuddin Nst no 113 Pekanbaru. email: ulpahsaripah@agr.uir.ac.id [2]Faculty of Agriculture, Islamic University of Riau, Jl Kaharuddin Nst no 113 Pekanbaru.

Food-27	**THE EFFECT OF TURMERIC, GINGER, AROMATIC GINGER AND CURCUMA IN DRINKING WATER ON THE CARCASS QUALITY OF FREE RANGE LOCAL CHICKEN WITHIN 10-16 WEEKS** Ni Made Yudiastari, Ni Ketut Etty Suwitari, Luh Suariani, I Gusti Agus Maha Putra Sanjaya, Yan Tonga Faculty of Agriculture, Department of Animal Husbandry, Warmadewa University Email: mdyudiastari@gmail.com
Food-28	**ANTIOXIDANT ACTIVITY OF EXTRACT AND FRACTION RICH IN ANTHOCYANINS FROM JAMBOLAN (Syzygium cumini) FRUIT AND CONTRIBUTION OF ANTHOCYANIN COMPOUNDS TO ANTIOXIDANT ACTIVITY** Puspita Sari Department of Agricultural Products Technology, Faculty of Agricultural Technology, Jember University, Kampus Tegalboto Jl. Kalimantan I, Jember, East Java 68121, Indonesia E-mail address: puspitasari.ftp@unej.ac.id
Food-29	**Analysis of Quality Control of Crude Palm Oil (CPO) and Palm Kernel (PK) Using Analysis of Variance (ANOVA) Method in PMKS PT. Sinar Gunung Sawit Raya Sirandorung** Dr Ir Hj Haniza, MT[1,] Sutrisno, ST, MT[2,] Wilda Roeska Simatupang[3] [1,2,3]Industrial Engineering, Univesitas Medan Area
Food-30	**THE SUCCESS RATE OF ARTIFICIAL INSEMINATION of CROSSING SWAMP BUFFALO with MURRAH BUFFALO in HUMBANG HASUNDUTAN DISTRICT, NORTH SUMATRA** Salam N Aritonang, Hilda Susanty and Kurniadi Ilham snaritonang@ansci.unand.ac.id
Food-31	**THE USE OF VARIOUS TYPES OF PROBIOTIC IN FERMENTATION ON THE NUTRITIONAL QUALITY OF FOOD WASTE AND ITS EFFECT ON THE GROWTH OF COMMON CARP (Cyprinus carpio)** Yuli Andriani[1,] Muhammad Fatah Wiyatna[2,] Fittrie Meyllianawaty Pratiwy[1,] Iskandar[1,] Risdiana[3,] Ratu Safitri[3] [1]Department of Fisheries, Faculty of Fishery and Marine Science, Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363, West Java, Indonesia [2]Department of Animal Production, Faculty of Animal Husbandry, Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363, West Java, Indonesia [3]Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran Jl Raya Bandung-Sumedang km 21 Jatinangor, Sumedang 45363 Jawa Barat, Indonesia [4]Department of Biology, Faculty of Mathematics and Natural Sciences , Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363, West Java, Indonesia Correspondent Email: yuli.andriani@unpad.ac.id
Food-32	**The Effect of Steam Blanching on the Antioxidation Properties Temulawak (Curcuma xanthorrhiza Roxb)** Dwiyati Pujimulyani[1,,]Bayu Kanetro[1,] Nurul Huda[2] [1]Faculty of Agroindustry, University of Mercu Buana Yogyakarta, Jl. Wates Km 10, 55753 Yogyakarta, Indonesia [2]Fakulti Pertanian Lestari, Universiti Malaysia Sabah, Jl. UMS, 88400 Kota Kinabalu, Sabah, Malaysia
Food-33	**High Temperature Short Time Blanching Enhances the Antioxidative Properties of Caulerpa racemosa Powder** Emi Windrayani, Nurfitri Ekantari, dan Siti Ari Budhiyanti Department of Fisheries, Faculty of Agriculture, Universitas Gadjah Mada. Jl. Flora, Building A4 2.01, Bulaksumur, Yogyakarta 55281 Indonesia
Food-34	**VITAMIN C CONTENT OF WHEY AND PITAYA BASED FUNCTIONAL BEVERAGE** Iza Ayu Saufani, Indri Santika Putri Department of Nutrition, Mohammad Natsir Bukittinggi University, West Sumatera, Indonesia E-mail: saufani@yahoo.com

Food-35	**Preservation with Different Smoking Techniques in an Effort to Extend The Shelf Life of Chicken Seeds** A A Made Semariyani, I Wayan Sudiarta, Ni Made Ayu Suardani, Ni Luh Suariani Warmadewa University
Food-36	**Metabolite Profiling of Phyllanthus niruri L. under Drought Stress for The Herb Medicinal Sustainability** Winda Nawfetrias[1,3,] a, Eka Nurhangga[1,] Rikania Reninta[2,] Siti Chotimah[1,] Delvi Maretta[1,] Lukita Devy[1,] Rizkita Rachmi Esyanti[3,] Ahmad Faizal[3,] b [1]Research Center for Horticultural and Estate Crops, Research Organization for Agriculture and Food, National Research and Innovation Agency, Cibinong Science Center, Jl. Raya Jakarta-Bogor, Cibinong, Bogor, Indonesia 16915 [2]Research Centre for Genetic Engineering, Research Organization for Life Science and Environment, National Research and Innovation Agency, Cibinong Science Center, Jl. Raya Jakarta-Bogor, Cibinong, Bogor, Indonesia 16915 [3]Plant Science and Biotechnology Research Group, School of Life Sciences and Technology, Institut Teknologi Bandung, Jl. Ganesa No. 10, Bandung, Indonesia 40132 a) Corresponding author: winda.nawfetrias@brin.go.idb) afaizal@itb.ac.id
Food-37	**Effect of Pulsed Electric Field Pretreatment on Physical Properties of Coffee Beans During Storage** Zaimar[1,] Reta[2,] Andi Ita Juwita[3,] Gusni Sushanti[4,] Sitti Nurmiah[5,] and Sri Udayana Tartar[6 1,2,3,4,5,6] Department of Agroindustry. State Agricultural Polytechnic of Pangkajene Islands, Pangkep, Indonesia 90665
Food-38	**Effect of Various Alternative Media on the Viability of the Entomopathogen Fungi Lecanicillium lecanii and Its Invectivity on Aphis glycines** [1]Lutfi Afifah, [1]Arni Berlian, [2]Anik Kurniati [1] Department of Agrotechnology, Faculty of Agriculture, University of Singaperbangsa Karawang, Indonesia [2] Forecasting Center for Plant Pest Organisms, Jl. Raya Kaliasin Tromol Pos 1, Jatisari, Pangulah Utara, Kec. Kota Baru, Karawang, Jawa Barat 41374 Corresponding author email: lutfiafifah@staff.unsika.ac.id ha
Food-39	**Corncob Powders as Potential Sources of Functional Nutrition and Bioactive Compounds** Haslinaa, Adi Sampurno[1,] Novizar Nazir[1] [1] Faculty of Agricultural Technology, Semarang University, Semarang, 50196, Indonesiab Faculty of Agricultural Technology, Andalas University, Padang, 26123, Indonesia Corresponding author: chana_panca@yahoo.com
Food-40	**Milk Production and Application of Technical Aspects of Rearing Murrah Buffalo at Sumber Abadi Livestock Farms, Pagar Merbau, Deli Serdang District** Rizqan[1,] Elly Roza[1,] Arief[1,] Heru Prayoga[2] [1] Departement Technology and Animal Production, Faculty of Animal Science, Universitas Andalas, Padang West Sumatra, 25163, Indonesia [2] Student of the Faculty of Animal Science, Universitas Andalas, Padang, West Sumatra, 25163, Indonesia Email correspondence: rizqan@ansci.unand.ac.id
Food-41	**The effect of microwave-assisted extraction temperature and material-to-solvent ratio on the characteristics of pandan (Pandanus amaryllifolius Roxb.) leaf extract** Qomarudin[12,] Siti Zahra Salsabilla[2,] Erni Sofia Murtini [2,] Yunianta[2,] Yuli Witono [3] [1] Faculty of Agricultural, Universitas Wisnuwardhana Malang, Indonesia [2] Food Science and Biotechnology Department, Universitas Brawijaya, Malang, Indonesia 65145 [3] Faculty of Agricultural Technology, Universitas Jember, Indonesia Corresponding author: erni.murtini@ub.ac.id

Food-42	**Growth and yield of red rice (Oryza glaberrima) on saline soil** A Munar [1,] W A Barus[1,] ARauf[2] ,AI Mahendra[1] [1]Program Study of Agrotechnology, Faculty of Agriculture, Universitas Muhammadiyah Sumatera Utara Jl. Kapten Mukhtar Basri No.3, Medan, 20238, Indonesia [2]Departements of Agrotechnology, Faculty of Agriculture, Universitas Sumatera Utara Jl. Dr. A. Sofian No. 3, Medan, 20155, Indonesia Email asritanarnimunar@umsu.ac.id
Food-43	**Ampiang Dadiah Powder, Development of Traditional Food Based on Local Wisdom to Prevent stunting in West Sumatra** Kurnia Harlina Dewi [1,] Rina Yenrina[1] dan Neswati[1] [1)]Department of Agroindustrial Technology, Faculty of Agricultural Technology, Universitas Andalas, Kampus Limau Manis, Padang, West Sumatera, Indonesia kurniaharlinadewi@ae.unand.ac.id / nia_unib@yahoo.com
Food-44	**Nutritional Composition of Underutilized Local Food Resources for Rice Substitution and Gluten Free Product** Fetriyuna Fetriyuna[1,2,] Ratna Chrismiari Purwestri[2,3,] Sri Murniani Angelina Letsoin[3,4] [1] Department of Food Technology, Faculty of Agro-Industrial Technology, Padjadjaran University, , Jln. Raya Bandung-Sumedang Km. 21 Jatinangor, Kab. Sumedang 45363, Indonesia [2] Institute for Nutritional Science (140), University of Hohenheim, Garbenstrasse 30, 70599 Stuttgart, Germany, [3] Faculty Forestry and Wood Sciences, Czech University of Life Sciences Prague, KamÃ½ckÃ¡ 129, 16500 Praha 6â€“Suchdol, Czech Republic [3] Department of Mechanical Engineering, Faculty of Engineering, Czech University of Life Sciences Prague, KamÃ½ckÃ¡129, 16500 Praha-Suchdol, Czech Republic; letsoin@tf.czu.cz (S.M.A.L.) [4] Faculty of Engineering, University of Musamus, Merauke Regency, Papua 99611, Indonesia
Food-45	**Lipid quality assessment of virgin coconut oil produced with different blanching methods** Sulkhan Windrayahya1*, Marsha Rosalind Arminta1, Velin Christabel Laureen1, Hanny Angrainy1 1Department of Food Technology, Indonesia International Institute for Life Sciences, Jl. Pulomas Barat No.Kav. 88, Jakarta, Indonesia 13210. Email: sulkhan.windrayahya@i3l.ac.id

Sustanable Development

Development-1	**Molecular Identification of Cellulose Degrading Bacteria and Ability to Produce IAA and Gibberellins** **Anak Agung Sagung Putri Risa Andriani[1,] Sri Gunawan[2,] Widyatmani Sih Dewi and Putu Krisnawan Kalimutu[2]** [1]Study Program of Agrotechnology, Faculty of Agriculture, Warmadewa University, Denpasar, Indonesia [2]Faculty of Forestry, Institut Pertanian STIPER, Yogyakarta, Indonesia [3]Soil Science Department, Faculty of Agriculture, Universitas Sebelas Maret, Surakarta, Indonesia [4]Study Program of Master Biotechnology, Faculty of Agriculture, Udayana University, Denpasar, Indonesia Corresponding author : krisnawankalimutu@gmail.com
Development-2	**Impregnation of Nano-modified Low Molecular Weight Phenol Formaldehyde (LMwPF) Resin onto Bamboo Strips and its Physical Properties Enhancement** **SN Surip[1]and UMK Anwar[2]** [1]Faculty of Applied Sciences, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia 2Forest Product Division, Forest Research Institute Malaysia, 52109 Kuala Lumpur, Malaysia

Development-3	**ANALYSIS OF SUSTAINABILITY OF TILAPIA AQUACULTURE BUSINESS IN NORTH BENGKULU REGENCY** **Aziza Mughniyati[1], Indra Cahyadinata[1], Satria Putra Utama[1]** [1]Department Socio Economic of Agriculture, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia Coresponding author : cahyadinata@unib.ac.id
Development-4	**Application Of The Reliability Centred Maintenance Method at QGS in PT ABC Dumai** Melliana Sekolah Tinggi Teknologi Dumai Email melliana@sttdumai.ac.id
Development-5	**Green Synthesis of Fe3O4@SiO2-Ag Magnetic Nanocomposite using Mallotus paniculatus Leaf Extract for Antibacterial Activity** Salni[1], Eka Sri Yusmartini[2], Bambang Yudono[3], Poedji Loekitowati Hariani[3], [1]Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Sriwijaya, Ogan Ilir, Indonesia [2]Chemical Engineering Department, Faculty of Engineering, Universitas Muhammadiyah, Palembang, Indonesia [3]Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Sriwijaya, Ogan Ilir, Indonesia Email puji_lukitowati@mipa.unsri.ac.id
Development-6	**TEST OF ANTIFUNGUS ACTIVITY OF ESSENTIAL OIL OF LONG PEPPER LEAVES (Piper retrofractum, Vahl) AGAINST Candida albicans AND CHEMICAL CONTENT DETECTION BY GAS CHROMATOGRAPHY-MASS SPECTROSCOPY (GC-MS)** Ni Luh Putu Putri Setianingsih[1], AA Sagung Putri Risa Andriani[2], Sang Ayu Made Putri Suryani[3], I Wayan Sudiarta[1] [1]Food Science and Tecnology Departmen, Faculty of Agriculture, Warwadewa University, Bali-Indonesia [2]Agrotechnology Department, Faculty of Agriculture, Warwadewa University, Bali-Indonesia [3]Aquatic Resources Management Department, Faculty of Agriculture, Warwadewa University, Bali-Indonesia Corresponding author: E-mail: putriameell@gmail.com
Development-7	**Identifying the development strategy of the community-based ecotourism in Balbar village, North Maluku as an option to create a sustainable livelihoods** Mardiyani Sidayat[1] Mila Fatmawati[2] [1] Department of Agribusiness, Faculty of Agriculture, Khairun University, Indonesia. dhiany_220973@yahoo.com [2] Department of Agribusiness, Faculty of Agriculture, Khairun University, Indonesia. fatmawatimil82@gmail.com
Development-8	**Characteristics of sucrose esters from Methyl Palmitate Using K2CCO3 and Na2CO3 as Catalysts** Rahmadanis[1], Erliza Hambali[2], Obie Farobie[3] [1]Postgraduate student of Agroindustrial Engineering, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia [2]Department of Agroindustrial Engineering, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia [3]Department of Mechanical and Biosystem Engineering, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia Email Erliza.h@gmail.com

Development-9	**USING LOKAN CLAM SHELL ASH FILLER ON ASPHALT CONCRETE â€“ WEARING COURSE (AC-WC) LAYER** Sri Asfiati[1,] Irma Dewi[2,] Sri Prafanti[3,]Zulkifli Siregar[4] Teknik Sipil, Universitas Muhammadiyah Sumatera Utara, Indonesia EMail sriasfiati@umsu.ac.id
Development-10	**ENGINEERING DISTRIBUTION AND DEVELOPMENT AREA FOR BEEF CATTLE IN KABUPATEN LIMA PULUH KOTA** No data [ID= 508]
Development-11	**DEVELOPMENT OF SIAM ORANGE CULTIVATION USING COMPOST FROM CHICKEN MANURE COMBINED WITH UREA FERTILIZER TO CHANGES IN RESULTS AND FRUIT QUALITY** N P A Sulistiawati, NKA Astiari, Nengah Suaria, and M Suarta Agrotechnology Program Study, Fakulty of Agriculture Warmadewa University, Bali-Indonesia anomsulistiawati313@gmail.com
Development-12	**OPTIMIZATION OF THE USE OF DIGITAL MARKETING IN INCREASING SALES VOLUME** Nanang Kusuma Mawardi, Artita Devi Maharani, Eska Stefani, Ayu Indah Lestari Department of Agribusiness, Faculty of Agriculture, Universitas Sarjanawiyata Tamansiswa *nanang.kusuma@ustjogja.ac.id
Development-13	**Agriculture as Base Sector in Java: Location Quotient and Shift Share Approach** Salsabil Rifqi Qatrunnada[1] ,Rumayya[2] Department of Economics, Universitas Airlangga, Jl Airlangga No [46,] Surabaya, East Java, Indonesia [2]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia Email salsabil.rifqi.qatrunnada-2019@feb.unair.ac.id
Development-14	**Increasing the Quality of Siam Orange (Citrus nobilis Lour) through the Application of NPK Fertilizer and Biopesticide from Soursop Leaves** Ni Komang Alit Astiari[1,] Ni Putu Anom Sulistiawati[1,] I Nengah Suaria[1] and I Nyoman Rai[2] [1]Agrotechnology Study Program, Faculty of Agriculture, Warmadewa University, Denpasar, Bali [2]Agroecotechnology Study Program, Faculty of Agriculture, Udayana University, Denpasar, Bali Correspondent: alit.astiari@gmail.comAbstract
Development-15	**Strategy to Hasten the Adoption of the Indonesia Sustainable Palm Oil Production System by Indonesian Smallholder Farmers: a System Dynamics Approach** Teguh Adiprasetyo [1] and Indra Cahyadinata[2] [1]Department of Natural Resources Management, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia; [2]Department of Agribusiness, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia.
Development-16	**LITERATURE REVIEW OF XYLITOL PRODUCTION FROM VARIOUS BIOMASS WASTES** Efri Mardawati, Virly, LP, , Hana N, Devi MR, Roni Kastaman
Development-17	**Antibacterial activity of Cream from Mesenchymal Stem Cell Secretome on Staphylococcus aureus and Escherichia coli Bacteria**

	Marlina[1] ,Rustini[1] , Rahmawati Elda[1], Dini Assyfa[1], Arsy Nurfatiha Ardi[1], Sinta Nazaria[1], Nur Elida[2] [1] Faculty of Pharmacy, Andalas University, Jl. Limau Manis, Padang, 25166, West Sumatera, Indonesia [2] Biomolecular Research Center, Ina Laboratory, Padang, 25152, West Sumatera, Indonesia
Development-18	**Characterization of Natural Zeolite Minerals to Reduce Feâ€™s and Al-dd in Acidic Sulphate Soil on Tidal Land** T Priono Department of Soil Science, Faculty of Agriculture, Sebelas Maret University, Jl. Ir. Sutami 36A Surakarta 57126, Indonesia *Corresponding author: timurpriono@gmail.com
Development-19	**Effect of Using Bioactivator From Rumen Contents With Adding By Row Propolis Trigona Bees on The Content of Dry Matter, Crude Protein and Fiber Fraction of Oil Palm Frond As Ruminant Feed** Syahro Ali Akbar , [1] ,Tri Astutisup[1]sup, and Fajri Basyirunsup[2]sup sup[1]sup>Department of Animal Science, Faculty of Agriculture, University of Mahaputra Muhammad Yamin, Solok City. 27311. West Sumatra, Indonesia. Tel +62 81366334915.. [2]Department of Economic Education Faculty of Education, University of Mahaputra Muhammad Yamin, Solok City. 27311. West Sumatra, Indonesia Email correspondent: syahroaa@gmail.com
Development-20	**The Evaluation of Ligninase Enzyme Activity and Total Bacterial Colonies on Crude Enzyme Base on Rumen Contents with The Addition of Trigona Bees Propolis** Tri Astuti[1], Syahro Ali Akbar[1], Fajri Basyirun[2], dan Rezi[1] [1]Department of Animal Science, Faculty of Agriculture, University of Mahaputra Muhammad Yamin, Solok City. 27311. West Sumatra, Indonesia. Tel +62 81366334915. [2]Department of Economic education Faculty of Education, University of Mahaputra Muhammad Yamin, Solok City. 27311. West Sumatra, Indonesia Email adektuti@gmail.com
Development-21	**Endophytic Bacteria of the Mangrove Rhizophora spp. Ethanol Producer** Anthoni Agustien[1],,Putra Santoso[1] , Yetria Rilda[2], Muhamad Hafidz Fadjri[3] [1]Department of Biology Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang 25163, Indonesia. [2]Department of Chemistry Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang 25163, Indonesia. [3]Post Graduate, Agriculture Ibaraki University, Japan Corresponding Author: anthoniagustien@sci.unand.ac.id
Development-22	**Simazine Molecularly Imprinted Polymer (MIP) Adsoption Kinetic Model as a Potentiometric Sensor** Yohandri Bow[1], Adi Syakdani[1], Indah Purnamasari[1], Rusdianasari[2] [1] Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia [2] Renewable Energy Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia. yohandripolsri.ac.id

Energy

Energy-1	**Bioactive Compounds of Oil Extracted from Ifa Wagol and Ifa Tamate Local Kenari (Canarium sp.) in Indonesia** Angela Wulansari[1,] Ucil Sahari[2,] Hamidin Rasulu[3] [1,3]Faculty of Agriculture, Khairun University, Indonesia [2]Student of Faculty of Agriculture, Khairun University, Indonesia Correspondent email: angela.wulansari223@gmail.com
Energy-2	**ENERGY VALUE AND DIGESTIBILITY OF BREADFRUIT (Artocarpus altilis) IN BROILER DIETS AS PARTIAL REPLACEMENT FOR CORN (Zea mays)** Roger Y Ibaez Jr[1,] Jacob Frederick P Velza[1,] Riza A Bartolay[2,] Allen Y Ibaez[3] [1]Dr Emilio B. Espinosa Sr. Memorial State College of Agriculture and Technology [2]Ipil National High School [3]Antonio Lee Llacer Sr. Integrated School
Energy-3	**Comparative Study of Slope and Azimuth Methods to Determine the Angle of Solar Panels** Rimbawati[1,] Kris April Mas Sahlul[1,] Munawar Alfansury Siregar[1] [1]Universitas Muhammadiyah Sumatera Utara Email rimbawati@umsu.ac.id
Energy-4	**Improving of Aluminum Alloys Process in Crucible Furnace by Waste Cooking Oil from Restaurant in Chiang Mai for Melting** Suwattanarwong Phanphet[1,] Sermkiat jomjunyong[2,] Chatree Maneekosol[3,]Chan Yodle[4,] Athiwat Wangmai[5] [1,5]Department of Industrial Technology, Faculty of Science and Technology, Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300E-mail: suwatwong_pha@cmru.ac.th, suwattwong@gmail.com, athiwat229@gmail.com [2] The Engineering Institute of Thailand under H.M. The Kingâ€™s Patronage (Northern) Chiang Mai University, Chiang Mai, THAILAND 50200 E-mail: Sermkiatj@gmail.com [3] Faculty of Education Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300 E-mail: Chamanee04@gmail.com [4] Department of Environmental Science, Faculty of Science and Technology, Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300 E-mail: chan_yod@cmru.ac.th
Energy-5	**Improving and Quality Checking of Grey Cast Iron by Used the Scrap Steel for Manufacturing in Chiang Mai Province** Suwattanarwong Phanphet[1,] Ratanaree Suttipong[2,] Somsak boonjaeng[3]Surasak Nummeesri[4,] Jirasan kamkun[5] [1,2,3] Department of Industrial Technology, Faculty of Science and Technology, Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300 E-mail: suwatwong_pha@cmru.ac.th, uwattwong@gmail.com, nokdum2513@gmail.com, somsak_boo@cmru.ac.th [4,5]Department of Environmental Science, Faculty of Science and Technology, Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300 E-mail: duydui@hotmail.com
Energy-6	**Solar Power Plant Design Analysis Residential Electrical Loads** Noorly Evalina[1,]a, Rafli Fikri[2,] Faisal Irsan Pasaribu[3,] Abdul Azis Hutasuhut[4,] Nadilah Sary[5] [1,2,3,)]Department of Electrical Engineering, University Muhammadiyah Sumatera Utara Jl. Kapten Mukhtar Basri postcode 20238, Medan Indonesia [a)]Corresponding author: noorlyevalina@umsu.ac.id
Energy-7	**The Relationship between CO2 Emissions and Economic Growth in Indonesia** Dewi K Purnomo[1,] Wisnu Wibowo[2]

	[1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia [2]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia dewikarina.purnomo-2019@feb.unair.ac.id
Energy-8	**Hydrogen: Can it Replace Gasoline?** **Nobutaka Ito Visiting Professor** School of Renewable Energy Maejo University, Thailand. nobuito@mju.ac.th
Energy-9	**INVESTIGATING THE EFFECTS OF CNT/TIO2 PHOTOANODE MATERIAL ON DYE-SENSITIZED SOLAR CELLS USING AFZELIA XYLOCARP AND COLEUS** Maria Onyemowo [1,2], Sabarikirishwaran Ponnambalam[1,2], Yuwalee Unpaprom[2,3], Rameshprabu Ramaraj[1,2] [1]School of Renewable Energy, Maejo University, Chiang Mai, 50290, Thailand [2]Sustainable Resources and Sustainable Engineering Research Lab, Maejo University, Chiang Mai, 50290, Thailand3Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand Corresponding Author Email: rrameshprabu@gmail.com
Energy-10	**Low-Cost Solar Energy Harvesting: A Study on Dye-Sensitized Solar Cells Using Inthanin Leaf Extract as a Natural Photosensitizer** **Maria Onyemowo [1,2], Yuwalee Unpaprom[2,3], Rameshprabu Ramaraj[1,2]** [1]School of Renewable Energy, Maejo University, Chiang Mai, 50290, Thailand [2]Sustainable Resources and Sustainable Engineering Research Lab, Maejo University, Chiang Mai, 50290, Thailand [3]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand Corresponding Author Email: rrameshprabu@gmail.com
Energy-11	**ANALYSIS OF ENERGY FLOWS AND ADDED VALUE OF CORN AGRO-INDUSTRY IN WEST PASAMAN, INDONESIA** Kiki Yulianto, Santosa, AzrifirwanDepartment of AgroIndustry Technology, Andalas University, Indonesia Corresponding Author: kikiyulianto@ae.unand.ac.id
Energy-12	**The Impact of Electricity Consumption and Economic Growth on Carbon Dioxide Emissions in ASEAN-3** Dyah Ayu Palupi[1] ,Rudi Purwono[1] [1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia Email dyah.ayu.palupi-2019@feb.unair.ac.id
Energy-13	**Production of Rice Husk Pellets for Electricity Generation in Indonesia** Rusdianasari[1], Iwan Arissetyadhi[2], Yohandri Bow[3], Leila Kalsum[1], Aida Syarif[1], and Fatahul Arifin[4] [1] Renewable Energy Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia [2] PT PLN (Persero) UIW S2JB, Indonesia [3] Energy Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia. [4] Mechanical Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia. rusdianasari@polsri.ac.id
Energy-14	**Green energy generation through NaOH pretreatment of swine manure and Limnocharis flava for biogas production** Jirakorn Katpraditsup[1]sup, Suwannachom Chatnarinsup[2]sup, Rameshprbu Ramarajsup[3]sup and Yuwalee Unpapromsup[2]sup sup[1] sup>Montfort College, Chiang Mai 50000, Thailand [2]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand

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ABSTRACT BY CATEGORY

Socio-economic

Social-1

AN OVERVIEW CONTRACT FARMING ON SMALLHOLDERSOCIAL BUSINESS: THE IMPLEMENTATION TRIPLE BOTTOM LINE AND ISLAMIC SOCIAL FINANCE

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Abstract: Over the last two decades, there have been a variety of production restrictions that smallholder farmers or contract farmers in many underdeveloped nations must contend with, including a lack of access to services such as effective extension and rural loans facilities, both of which are necessary pre-conditions for upgrading commodity value chains. Contract farming has the potential to be a socially sustainable business as its ability to perform well under triple bottom line parameters. Despite the potential to be a socially sustainable business, contract farming is underdeveloped and unable to generate a stable income for the rural poor. Therefore, this study attempts to understand smallholder welfare in terms of monetary support and social likelihood ecosystem. This study also identified bottom line namely; survival, sufficient, and sustainable model to support and protect contract farming businesses from risk. Excluding the poorest or most vulnerable smallholders could also exacerbate pre-existing societal inequalities and prevent those groups from accessing services and inputs that facilitate an upgrade in their standard of living. This study used a focus group approach to understand the factors contributing to the effectiveness of the Triple Bottom Line of contract farming for smallholders. The focus group interviews that will be carried out in this study are influenced by Glazer and Strauss seminal works. The expected outcome will show that the agricultural sector holds a central position in the economic systems of the developing countries. For the smooth continuation of contract farming, its contribution to the economic system, and the proper working ecosystem of the agriculture sector, blending with the so-called new contract farming Triple Bottom Line are strongly required. In the livestock sector, the expected evidence will highlight the crucial role of survival, sufficient and sustainable in terms of contract farming social business. The evolution of the contract farming process will have numerous implications for the domain of triple bottom line such as survival, sufficiency, and sustainability. This, however, could be materialise of any new type of contract farming on the farm and has to be coupled up with intervention from the authorities. This study will make a significant practical contribution to improving existing contract farming. The Triple Bottom Line will help governments in developing countries design policies and scenario perhaps could be of a more sustainable ecosystem for contract farming. Existing smallholder agricultural entities can transform their business models to aligned perhaps go beyond triple bottom line parameters. Social business contract farming will foster and ensure small-scale farmers' wellbeing without sacrificing the economic goals of the agricultural firms.

Keywords: Triple Bottom Line, Contract Farming, social business, Islamic Social Finance

Social-2

Supply Chain Risk Management: A Conceptual Study in Livestock Industry in Malaysia

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Abstract: The supply chain has become an essential element for any organization, but risks are the major obstacles to achieving performance as they can disrupt not only the organization but the whole system. A risk, when it occurs, causes adverse effects on outputs. Thus, it is compulsory to manage the risks efficiently and effectively to improve performance. The purpose of this paper is to compare the impact of supply chain risks on the industry's performance, especially in the livestock industry. First, Supply Chain risks are identified and classified into several criteria based on previous literature. Then, an instrument is developed from a pool of items. The question for the interview session is adopted from a literature review of supply chain risk sources. The finding of this study revealed that overall supply chain risks can be categorized into five constructs which are supply risks, demand risks, operational risks, financial risks, and information risks. This study provides a detailed picture of the relationship between supply chain risks and the performance of the livestock industry in Malaysia.

Keywords: Risk management, Supply chain management, Performance

Social-3	**Welfare Level of Goat Farmers Using Farmer's Exchange Rate Approach in Sidoarjo Regency** **Pawana Nur Indah[1]Risqi Firdaus Setiawan[2,] and Nisa Hafi Idhoh Fitriana[3]** *UPN Veteran Jawa Timur, Surabaya Indonesia.* *Coresponding Author :pawana_ni@upnjatim.ac.id* **Abstract: The purpose of this study 1) To determine the level of welfare of goat breeders and 2) To determine the effect of price index factors paid by farmers on the price index received by goat breeders.This study uses NTP time series data with the base year 2012 = 100 as the basis for calculating the years 2019 - 2020. The location studied was determined by purposive sampling method in 2 Subdistricts in Sidoarjo Regency which are centers of goat. The sample was selected by purposive random sampling as many as 30 goat breeders. The NTP analysis method was carried out descriptively and the analysis of the factors that influenced the NTP was carried out using multiple linear regression. The results showed that the exchange rate of goat farmers in Sidoarjo regency in 2020 increased by 4.10 percent from 113.22 in 2019 to 117.32 in 2020. This shows that goat breeders in Sidoarjo district are experiencing a surplus or prosperity. The production input price index which includes the price of seeds, feed, and labor wages that must be paid by goat breeders is a factor that has a significant effect on the goat price index received by breeders.** Keywords: Farmers' exchange rates, goat, livestocwelfare
Social-4	**Present scenario of solid waste management in india and lessons for developing countries** Ms Pragya Sharma Assistant Professor, Government Girls College, Dungarpur, India **Abstract: The increasing population and the altered lifestyle brought about by the higher per capita income are the main contributors to trash generation. As a result, both the volume and the diversity of solid waste are continuously expanding. Formerly, the wastes were natural and harmless to the environment, allowing them to be simply dumped in low-lying locations. Today, however, the organic component of trash has sharply decreased while the inorganic component has multiplied. Moreover, trash from businesses, clinics, buildings, homes, and many other sources has a negative impact on the environment. Additionally, in nations that were unable to strictly apply the agreed regulatory framework, the chemicals produced by improperly disposing of these wastes penetrate the air, or leaches into land, and water resources, generating dangerous and toxic impacts. This review may provide a workable solution for mitigating solid waste management in developing nations and will give a peep into pesent waste management techniques**
Social-5	**Evaluation of Yield and Artemisinin Content of Six Polyploid Accessions of Artemisia annua Grown in Tawangmangu Region Indonesia** **Usman Siswanto[1,] Dyah Subositi[2,] Ani Isnawati[2,] Yuli Widiyastuti[2]** [1]Agriculture Faculty, University of Tidar Jl. Barito No. 2, Kedung Sari, Kecamatan Magelang Utara, Magelang Jawa Tengah [2]Research Center for Pharmaceutical Ingredients and Traditional Medicine, Medicinal Plant and Traditional Medicine Research and Development CenterNational Research and Innovation Agency, Indonesia, Jl. Raya Lawu 11, Tawangmangu, Karanganyar, Jawa Tengah 57792 Email usiswanto@yahoo.com **Abstract: The high incidence of malaria in Indonesia has resulted in a very high dependence on malaria drugs. The effort to self-sufficiency in artemisinin raw materials is very possible because of the suitable geographical climate for large scale cultivation of Artemisia annua. Artemisinin production will be efficient and economical if the content levels reach more than 0.6%. On the other hand, Artemisia annua is a short-day plant, which is a typical sub-tropical plant. Growing this species in the tropics causes a short vegetative period and results in low levels of artemisinin. The development of a polyploid variety of A. annua with better growth character than its wild type of parental accession has been underway. To examine the stability of its growth and yield, a field study was carried out to measure the growth potential and adaptation of polyploid varieties in Tawangmangu region at the altitude of 1.200 m above sea level. A total of 25 plant seeds per accession were grown in each experimental plot with a plant spacing of 40 x 60 cm and 3 replicates. The parameters observed were plant height, stem diameter, fresh weight and dry weight of biomass, essential oil, and artemisinin content. The results showed that 6 polyploid accessions resulted in different morphological characteristics based on growth, leaf shape, branching, stem color, and flowering characteristics. In general, each accession has performed inconsistency in the growth, yield, and artemisinin content. Artemisinin levels of each individual sample of each accession were highly fluctuated. This variation in levels indicated that each accession number was not genotypically stable or uniform.** Keywords: Artemisia annua, polyploid, accession, artemisinin, Tawangmangu

Social-6	**Sustainable Agriculture and Food Education (SAFE) for Thai School Lunch Programme** Supot Boonraeng, Chatree Maneekosol, Tanyawan Sridechakul, Piluntasoot Suwannalert, and Naksit Panyoyai Chiang Mai Rajabhat University, Mae-Rim Campus, Saluang Sub-district, Mae-Rim District, Chiang Mai Province 50330 *Corresponding author E-mail: naksit_pan@cmru.ac.th **Abstract: In early 2023, the preliminary survey of fresh vegetables in local markets supplied for school lunches in Chiang Mai was at risk of contamination of agricultural chemical residues. Therefore, agriculture and food education are essential to establish a learning-through-practice system between educational institutes and communities for a safe supply chain from food producers to consumers.Â Objectives:Â The objectives were to 1. convey a SAFE system through school lunch management and 2. carry on a participatory mechanism to drive the SAFE lunch.Â Methods:Â The research method was a quantitative study that obtained an interview summary from a network of schools and community enterprises. The undergrads of agriculture teaching from Chiang Mai Rajabhat University (CMRU) performed a school project on safety and healthy lunches at the community schools.Â Result: the SAFE system is aware of the variety and sufficiency of produce, food access in communities, reproductive resilience for food shortage, and food utilization based on safety and nutritional aspects. The initial driving mechanism of agriculture and food supply is community producers, who directly distribute fresh foods to food handlers in a school canteen. The food handlers involve safety inspection of lunch catering till waste disposal. CMRU, in collaboration with the Foundation Promotes Healthy Food Consumption, supports 4-year practical teachers to educate food safety and nutrition lunch supply chain using an active learning programme of kitchen garden practices and public communication with students and communities.Â Conclusion:Â SAFE in Thai schools was designed to reflect food security in a community, where lunch ingredients came from community farmers and some from lunch programmes. In addition, agricultural undergraduates were the educators of SAFE in schools and communities.** Keywords: agriculture, food, education, learning programme, school lunch
Social-7	**RISK ANALYSIS OF VANNAMEI SHRIMP CULTIVATION** **Endang Yektiningsih[1], Syihabuddin Ahmad Al Abid[1], Sri Widayanti[1]** [1]Faculty of Agriculture, University of Pembangunan Nasional "Veteran" Jawa Timur Email endangyn@gmail.com **Abstract: One of the commodities that contributes to increasing the value of fisheries exports is vannamei shrimp. In vaname shrimp cultivation, there are many sources of risk that have the potential to cause failure and losses to farmers. This research was conducted in Tanggulrejo Village, Manyar District, Gresik Regency. This study aims to: 1) Identify the risks of vannamei shrimp farming, 2) Know the risk level of vannamei shrimp farming, and 3) Recommend strategies that can be carried out by farmers. The sampling method used purposive sampling with a total sample of 35 farmers from a total population of 131 farmers. The analytical method used is Failure Mode Effect Analysis. The results showed that there were 15 identified risk sources and there were seven priority risks, namely disease risk, seasonal and weather changes, price fluctuations, poor environmental conditions, low technology, cultivation techniques and quality of vannamei shrimp seeds. Risk management strategies that can be carried out by farmers are selecting seeds that are ready to spread and healthy, improving the environmental quality of shrimp, increasing capital for cultivation technology, increasing skills regarding vaname shrimp cultivation, breaking the marketing chain that is too long and calcifying remediation if the soil in the pond is acidic.** Keywords: Risk Analysis, Failure Mode Effect Analysis, Vaname Shrimp
Social-8	**Multidimensional Poverty across Agroecologies in Occidental Mindoro, Philippines** Charles Allen Herpacio[1], Irham Irham[2], Lestari Rahayu Waluyati[2] [1]Department of Agricultural Socioeconomics, Faculty of Agriculture, Gadjah Mada University, Yogyakarta 55281, Indonesia [2]Department of Agricultural Socioeconomics, Faculty of Agriculture, Gadjah Mada University, Yogyakarta 55281, Indonesia . Corresponding author: charles.a.h@mail.ugm.ac.id **Abstract: Poverty in the context of rural farming is site-specific. The differences in natural resource endowment and availability of social services across agroecologies shape farming households' well-being. This study assessed the multidimensional poverty and its determinants across upland, lowland, and coastal areas in Occidental Mindoro, Philippines. Using the Alkire-Foster methodology, data from 210 randomly selected farming households revealed that five out of seven households are multidimensionally poor. The coastal area registered the highest Multidimensional Poverty Index at 0.41, where most households are deprived of education, decent housing, clean fuel source, paved access road, and farmland. For all the agroecologies, the households' lack of education and incapacity to take on economic opportunities and secure productive assets limits them from investing in things that improve their living conditions. Estimates of binary logistic regression also showed that non-indigenous farming households with female and educated householders, few dependents, larger agricultural holdings, access to formal credits, and non-farm business are significantly less likely to fall into poverty. The local government and concerned development organizations should invest in social protection programs that improve access to formal education, spur on-farm and non-farm livelihood opportunities, and enhance public infrastructure services to reduce multidimensional poverty in Occidental Mindoro**

	Keywordsâ€" agroecologies; deprivations; multidimensional poverty; farming households
Social-9	**Analysis Sustainability of Coconut Farming (Cocos nucifera Linn) in Indragiri Hilir District, Riau Province, Indonesia** Sisca Vaulina[1,] Elinur[1,] Ilma Satriana Dewi[1,] Selvia Sutriana[2,] Mukhlis[3,] Fega Abdillah[4] [1]Department of Agribusness, Faculty of Agriculture Universitas Islam Riau, Jalan Kaharuddin Nasution No, 113 Perhentian Marpoyan Kota Pekanbaru 28284, Provinsi Riau, Indonesia [2]Department of Agrotechnology, Faculty of Agriculture Universitas Islam Riau [3]Agricultural Polytechnic, Payakumbuh, West Sumatera [4]Graduate Student Department of Agrotechnology, Faculty of Agriculture Universitas Islam Riau Corresponding author: siscavaulina@agr.uir.ac.id **Abstract. Coconut is a livelihood in Indragiri Hilir district. Climatic suitability, soil topography and soil structure are suitable for coconut. Therefore, sustainable production is very necessary. The purpose of this study was to analyze: (1) characteristics of coconut farmers, (2) status of sustainability of coconut plantation farming, and (3) dominant or sensitive factors in the sustainability of coconut plantation farming. The research method used a survey method, research was carried out in August-September 2022, location was in Indragiri Hilir Regency, Riau Province, with population is coconut farmers and number of samples are 126 farmers. Data analysis uses Rap-Coconut Ordination analysis with Multidimensional Scaling (MDS) method, consists of 5 dimensions and 21 attributes. The results showed: (1) farmers had the same characteristics, productive farmer age; junior high school graduation; 3-4 family dependents and 25-39 years of farming experience. (2) Sustainability status coconut farming is quite sustainable (index values 53.58). (3) The most sensitive and influential attributes: Ecology (use of pesticides); Socio cultural (family participation and perceptions community); Economic (selling price system); Technology (coconut planting distance); Institutional (participation in coconut counseling activities).**
Social-10	**Detection of SARS-CoV-2 from Cats with Positive COVID-19 Owners in Bandung, Indonesia** Roostita Lobo Balia[1,2,] Fauzi Rohman[3,] Okta Wismandanu[1,2,] Lidya Chaidir[4,5,] Tyagita Hartady[1,2,] Pranyata Tangguh Waskita[1,3,] Vesara Ardhe Gatera[6,] Sarasati Windria[1,2,] Mas Rizky AA Syamsunarno[4,5,] Gemilang Lara Utama[7,8] [1]Department of Public Health, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia. [2]Veterinary Medicin Study Program, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia, [3]Master Program in Biotechnology, Graduate School, Universitas Padjadjaran, Bandung, Indonesia, [4]Department of Biomedical Sciences, Faculty of Medicine, Universitas Padjadjaran, Bandung, Indonesia. [5]Research Center for Translational Biomaker Research, Universitas Padjajaran Jatinangor, Indonesia. [6]Department of Biology Pharmacy, Faculty of Pharmacy, Universitas Padjajaran Jatinangor, Indonesia. [7]Faculty of Agro-Industrial Technology, Universitas Padjadjaran, Bandung, Indonesia.8Center for Environment and Sustainability Science, Universitas Padjadjaran, Bandung, Indonesia.Affiliation **Abstract: The study aimed to detect SARS CoV-2 in cats living with positive COVID-19 owners in Bandung, Indonesia. Nineteen cats from seven COVID-19â€"confirmed patients were included. Swab samples from nasopharyngeal and rectal were obtained for RT-qPCR test and blood sera were collected for rapid IgM/IgG antibody of SARS CoV-2. Four cats were positive by RT-qPCR from nasopharyngeal samples, in which, only one was detectable from rectal swab. None showed antibody formation by examining IgM/IgG rapid test from serum samples. Our results suggest that SARS-CoV-2 can be contracted to cats living with COVID-19 owners and warrant further study.** Keywords: Cats, nasopharyngeal swab, rectal swab, SARS-CoV-2, Indonesia
Social-11	**Analysis Of The Influence Of Agricultural Sektor Economic Growth On Rural Poverty Level In 34 Provinces In Indonesia** Wardha Tia Ivani[1] ,Ilmiawan Auwalin[2] [1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia [2]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia wardhatia.ivani-2019@feb.unair.ac.id **Abstract: This study aims to analyze the effect of economic growth in the agricultural sector on rural poverty rates in 34 provinces in Indonesia for the 2011-2020 period. By considering other variables such as economic growth in the non-agricultural sector, education, unemployment, and dummy village funds. The method used is panel data regression. This method is a combination of 2011â€"2020 time series data and cross-sectional data from 34 provinces in Indonesia and is tested using the Random Effect Model (REM) model. The results showed that the economic growth in the agricultural sector had a significant negative effect on the rural poverty rate. Other findings from this study also explain that the variable economic growth in the non-agricultural sector has no significant negative effect on the rural poverty rate, the education variable has a significant negative effect on the rural poverty rate, the unemployment variable has a positive effect on the rural poverty rate, and this study also shows that the dummy fund variable village has no significant positive effect on rural poverty**.

	Keyword: Rural Poverty, Economic Growth in the Agricultural Sector, Economic Growth in the Non-Agricultural Sector, Education, Unemployment, Dummy Village Funds
Social-12	**The Impact of the Korean Wave on Exports of South Korean Food Commodities to ASEAN-5 Countries** Alyssa C H Tandy[1] ,Rossanto D Handoyo[2] [1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia [2]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia alyssachiara.handini-2019@feb.unair.ac.id **Abstract: This study aims to examine and analyze the impact of the Korean Wave on exports of food commodities from South Korea to ASEAN-5 countries (Indonesia, Malaysia, Thailand, Singapore and the Philippines) by considering another variables such as gross domestic product per capita, interest rates, google trends search and distance between countries from 2010 to 2020. This study analyzes the export of cultural goods from South Korea as a proxy for the Korean Wave using the Gravity Model and tested using the Fixed Effect Model (FEM). The results of the study explain that the Korean Wave variable has a positive effect on exports of South Korean food commodities. Other findings from this study explain that the variables of gross domestic product per capita of South Korea as an exporting country, distance and exchange rate have a negative effect on exports of South Korean food commodities, this study also show that the variable gross domestic product per capita of ASEAN-5 countries and search trends on google trends have a positive effect on exports of South Korean food commodities.** Keywords: Korean Wave, Food Commodities, Export, South Korean, Gravity Model.
Social-13	**Analysis of the Work Posture of the Malay Songket Weaving Craftsman Wan Syamsinar Dumai** Fitra[1,] N J Marbun[1,] Yusrizal[1,] T Mesra[1,] Azmi[1,] M Arif[1,] Juni S[1,] and F Anggraeni[1] [1]Industrial Engineering Study Program, Sekolah Tinggi Teknologi Dumai, Riau - Indonesia Email famukhtyfitra@gmail.com, ovibanjarnahor@gmail.com, yusrizalpuket2@gmail.com, trisnamesra74@gmail.com, azmi.omy@gmail.com, pakarifmt@gmail.com, junisaputr4@gmail.com, febyanggraeni16@gmail.com **Abstract: Songket is a type of traditional Malay woven fabric that was inherited from time to time. The Malay Songket Weaving Wan Syamsinar is one of the songket woven cloth craftsmen in the city of Dumai. The workers at the place use manual methods. Therefore, manual work is at risk for musculoskeletal disorders. Knowing the level of work posture risk experienced by weavers while working is the purpose of this study. In data processing, the authors used the Rapid Upper Lamb Assessment method, to find out the musculoskeletal disorders experienced by workers using the nordic body map questionnaire. Results of discussion and data analysis of the 3 work postures carried out showed that the posture of arranging the threads of the six workers was at a low risk with a range of 3-4 levels, in the posture of pulling the loom handle of the six workers at a low risk with a range of 3 â€“ 4 risk levels, for the posture of pushing the loom handle 3 workers are at low risk ranging from risk level 3-4 required some action in the future while 3 more workers are at moderate risk with risk level range 5-6 actions in the near future** **.** Keywords: Musculoskeletal disorders, Nordic Body Map, Rapid Upper Limb Assessment, Weaving
Social-14	**Building UMKM Sector In The Pandemic and Post Covid-19 Era Through Digital Media and Creative Economy (Case in UMKM Breadfruit Chips and Fan-Fried Banana) in Riau Province.** Fahrial, Tibrani, Fachmi Gunawan, Putra Maulana Faculty of Agriculture, Universitas Islam Riau, Pekanbaru Jl. Kaharuddin NST. No.113, Marpoyan, Pekanbaru 28284, Riau, Indonesia E-mail: fahrial2018@agr.uir.ac.id **Abstract: Production and businessâ€™s income of breadfruit chips and fan-fried bananas is fluctuating. Meanwhile, breadfruit chips and fan-fried bananas are popular and well-known snacks in Riau. Data analysis: descriptive qualitative, quantitative and SWOT. This research was conducted to see the characteristics, profile, business, strategy, SWOT, and implementation of the business. Research shows: 1) Agribusiness UMKM are in the age group 35 to 57, the level of education from junior high schools, the experience of trying 1-10 years, the number of family dependents 3 people and the average employee of 3 people, 2) UMKM business profile is to use personal capital, training, and labor from within and/or outside the family depending on the availability of raw materials, >300 customers and management goes well, 3) Breadfruit chips and fan-fried bananas are profitable businesses, especially fan-fried bananas, 4) Strategy for developing this business in the Pandemic and Post Covid-19 era is to increase the amount of production and raw materials that are managed professionally managed, 5) Strengths, weaknesses, opportunities and threats entering in quadrant I, meaning it has potential to be developed more advanced, 6) In Riau, the implementation of this business potential has developed in Pekanbaru and Kampar, There is a need for development of this business in other areas and procurement of sufficient raw materials to meet high market needs.** Keywords: UMKM, Creative Economy, Covid-19, Digital Media.

Social-15	**Application of Identification Disease On Fig Leaf Images Using The Deep Learning Method** **Waeisul Bismi[1], Dwiza Riana[2*], Alya Shafira Hewiz[3]** [1,2] Faculty of Information Technology, Graduate School of Computer Science, Nusa Mandiri University, Jakarta, Indonesia 3 Faculty of Medicine, Airlangga University, Surabaya, Indonesia
Social-16	**Investigating Acceptance of Paylater Payment in Online Food Delivery Services Through a Technology Acceptance Model** Fadlan Hamid Alfebi[1] Bobby Himawan[2] Dwiza Riana[3] Sri Hadianti[4] Magister Program of Computer Science Universitas Nusa Mandiri www.nusamandiri.ac.id Email 14210242@nusamandiri.ac.id, 14210247@nusamandiri.ac.id, dwiza@nusamandiri.ac.id*, sri.shv@nusamandiri.ac.id **Abstract: The development of technology has drastically changed the behavior of human daily life. Purchases of goods and services that usually be done in cash with banknotes and coins are now slowly turning to digital payments. The COVID-19 pandemic that has hit since 2020 is further accelerating the adoption of digital payments worldwide. Digital payments on credit called paylater are starting to emerge as a new trend because they spoil users with a 'use now, pay later' system. By using the Technology Acceptance Model method, author tries to dig deeper into the factors that encourage adaptation of paylater, especially in online food ordering services. The results of this study are expected to enrich theoretical and practical insight to fellow researchers and business managers to understand changes in consumer behavior and society in general.** Keywords: payment, paylater, technology acceptance, tam.
Social-17	**Evaluation of Technical and Economic Performance of Farm Machinery Hire Services in Indragiri Hulu Region, Province Riau** Zulhanafiah, Ujang Paman, Saipul Bahri Magister Management Agribusiness, Graduate Program of Islamic University of Riau, PekanbaruJl. Kaharuddin NST. No. 113, P. Marpoyan, Pekanbaru 28284, Riau Indonesia Corresponding Author: pamanu@agr.uir.ac.id **Abstract: Most of farm machines in Indragiri Hulu Region are managed by farm machinery hire services especially machines aided by government. Such management system is expected to increase technical and economic performances of farm machines operated. This research attempts to evaluate the technical and economic performances of farm machinery hire service in Indragiri Hulu Region, Riau Province. The field surveys were conducted in 2022 in 11 farm machinery hire service providers from 11 districts in the province. A total of 33 managers and operators (11 managers and 22 operators) were selected purposively and interviewed using questionnaires to field collect data. The collected data were analysis by using descriptive and quantitative approaches. The results showed that machinery hire services manage and operate 3 to 6 types of machines like hand tractors, mini tractors, water pumps, rice transplanters, combine harvesters, and power threshers. Most farm machines worked under capacity due to unskilled operators and poor field conditions, so seasonal working became low. However, the farm machinery hire services was profitable businesses on farm level in the region. The result suggests that field machine capacity must be increased to reach maximum seasonal working in order to get more profit.** Keywords: Technical and economic performance, farm machinery hire services, field capacity, seasonal working.
Social-18	**Impact Analysis on Income and Increasing Farmer Participation in Small-Scale Irrigation Management during the Covid-19 Pandemic in Lima Puluh Kota District** Taufika Ophiyandri[a], Bambang Istijono[b,*], Qoyyumi Aulia[b], Bayu Martanto Adji[a], Benny Hidayat[a] and Adi Putra[c] *[a] Department of Civil Engineering, Andalas University, Indonesia* *[b] Post-Graduate School, Andalas University, Indonesia* *[c]Sumatra River Regional Office V, Indonesia* **Corresponding author: bistijono@eng.unand.ac.id* **Abstract: Irrigation management is a very important activity in supporting agricultural production and national food security. The IPDMIP is a program where one of the indicators is to increase farmer participation in small-scale irrigation management which is also a follow-up to the implementation of Law number 17 of 2019 concerning Water Resources. This research was made to determine the effect of the implementation of the IPDMIP program in Lima Puluh Kota District on farmers' income, to find out the obstacles in implementing IPDMIP to increasing the participatory participation of farming communities, and to**

	determine the increase in participatory farmers in the management of irrigation networks by comparing conditions before and after the implementation of IPDMIP. The data used in this study came from primary and secondary data, which were then processed. By using cost analysis, revenue analysis and income analysis, the differences in farmers' income before and after IPDMIP in each irrigation area were obtained, namely USD 62.13 in the Batang Mungo irrigation area, USD 34.23 in the Bukik Lurah irrigation area and USD 61.78 in the Bandar Baliak Sariak irrigation area. By using descriptive analysis it was concluded that the participatory level of farming communities in maintenance planning in the 3 irrigation areas studied increased from 6% to 71%, while the participatory level in maintenance implementation increased from 20% to 97% after the IPDMIP was held. From the perspective of income and participatory farmers, this research emphasizes the need for a review of the IPDMIP application technique or the IPDMIP follow-up program to be implemented in the future.
Social-19	**Asia Techno Farm Initiative project proposal** Nobutaka Ito Visiting Professor School of Renewable Energy. Maejo University, Thailand nobuito@mju.ac.th **Abstract: Asia is a huge agricultural region with about half of the world's population and one-third of the world's agricultural land. However, due to factors such as small-scale farming, family labor, low income, and working poverty in Asian agriculture, it is possible to manage the quality of agricultural products and transfer, maintain, and pass on technology to increase added value, even if the production volume is big. By launching a human resource development program in the community of Asia, we can promote Asian agriculture and contribute to the world by preparing for the food crisis that will surely come in the near future. This concept has already been reported as the Asia Food Project and Future Farmers of Asia growing program as a part of it. Furthermore, in 2017, the author, Ito cooperated in holding a workshop on precision agriculture at the request of the Thai government, but the project has not yet been implemented due to factors such as theCOVID-19 disaster etc. There must be plenty of researchers with sufficient contributions related to the project that match the purpose and effect of supporting the budgeting of government agencies for drafting projects, and the strong enthusiasm and motivation of participants to serve the world, participating agencies, and participating organizations in their implementation. It is necessary to be In this paper, I will introduce and show the specific contents of the curriculum in the project, the problems in the project management and the concrete measures to solve them.** Keywords: Technology transfer, Human resources development, Smart agriculture, Asian agriculture
Social-20	**BIOECOLOGICAL, TECHNOLOGICAL, AND ETHICAL COMPONENTS AS DEVELOPMENT INDICATORS FOR MELITOURISM SOCIAL ENTERPRISE** AMELIA R NICOLAS, PhD ProfessorCentral Bicol State University of AgricultureBicol, Philippines Email amelia.nicolas@cbsua.edu.ph **Abstract: In the Philippines, meliponiculture, commonly known as stingless beekeeping, is not a primary livelihood for most novice beekeepers. The business and tourism aspects of the operation are often neglected. Moreso, the bioecological, technological, and ethical components are given less attention. This paper thus aimed at developing indicators for melitourism social enterprise, focusing on and comprehensively discussing the aspects of bioecology, technology, and ethics. These components, classified as biotic or abiotic factors, are essential in sustaining melitourism. Findings revealed that the stingless bee colonies' survival, abundance, and sustainability in the meliponary are influenced by environmental factors, food sources, type of technology, and how people manage natural resources. The study, anchored on the Isenberg Entrepreneurial Ecosystem and Sustainable Livelihood Model, used an extensive literature review. The most supported indicators based on the number of research conducted on these concerns are the food source, species, hive type, hive propagation method, and care for our natural resources.** Keywords: meliponiculture, melitourism, social enterprise, stingless beekeeping
Social-21	**Promotional Media Preference for Local Chocolate in the Bicol Market** Ma Teresa B Lirag, Edmundo B Casaul Jr and Ramona Isabel S Ramirez **Abstract: The Philippines is starting to have strong gains in the chocolate confectionery as the demand is constantly increasing for one of the intermediate cacao-based products, tablea. A study was conducted to determine the promotional media preference for creating awareness of the local chocolate developed by the university and identify the barriers in the promotion and marketing sphere. A total of 65 respondents were randomly chosen and a structured questionnaire and focused group discussion was undertaken to gather data from the field. Results of the study showed that various marketing technologies and product promotions are preferred for introducing the chocolate-tablea developed by the university. Consumers had outgrown their desire to buy chocolates in the traditional market outlet of souvenir shops and utilization of innovative social media marketing is highly predominant. Likewise, inclination in the use of digital platforms has been established and widely employed resulting to the dwindling utilization of traditional media. Towards this end, it is crucial to identify future activities that will make use of**

	digital technology to push and promote tablea to increase its competitiveness, continuous trainings must be provided to entrepreneurs on online marketing strategies, provision of financial support must be continued for upscaling the product and consumer-centred research must be continuously conducted to address the diverse needs of the consumers when new products are introduced in the market. Keywords: Promotional strategies, confectioneries, marketing, market outlet
Social-22	**UNDERSTANDING FACTORS AFFECTING YOUNG CONSUMERS PURCHASE INTENTION OF UNPOLISHED RICE** Hanilyn A Hidalgo, Darlene OronanDepartment of Agribusiness, Central Bicol State University of Agriculture, Philippines hanilynhidalgo@cbsua.edu.ph **Abstract: Unpolished rice remains unpopular to the general consumer. Polished rice is still highly preferred globally. The complexity of the environment has led to changing the behavior of consumers. The paper's main objective was to understand the factors affecting the young consumers in the purchase of unpolished rice. The study employed an online survey to 236 millennial and centennial Filipino consumers in the country. The study used the descriptive research design and quantitative method in determining the factors of consumption. To determine the relative importance of the different latent variables included in the framework in influencing purchase intention of unpolished rice, a Structural Equation Modeling was also conducted. Furthermore, a multiple regression analysis was added in the data analysis to include the socio-demographic variables and latent variables in purchasing unpolished rice. The study showed some proof that rice is still the main plate for young consumers. Young consumers have a high awareness level of unpolished rice. They purchase and consume unpolished rice as well as polished rice. All variables influence the purchase intention of unpolished rice. In the multiple regression results, health benefits, store atmosphere, quality, accessibility, and price are important influencers in this study. Three types of the market were observed using the advanced generalized SEM. To reach its target market's maximum reach, the accessibility issue should be addressed through collaborative efforts from the government and the private sector. The unpolished rice may be brought closer to the market if general information is widely visible in retail stores that are accessible to the buyers across income.** No data [ID= 273]
Social-23	**The Effect Agricultural Exports on Economics Growth: A Case Study of Indonesia** Eva Nur Kumalasari[1] ,Ni Made Sukartini[1] [1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia Email eva.nur.kumalasari-2019@feb.unair.ac.id **Abstract: Economic growth is the main goal of most countries because it is closely related to increasing per capita wealth. Exports are considered as an important factor in driving a country's economic growth and sustainable development, as reflected in the Export-Led Growth (ELG) hypothesis. The ELG hypothesis assumes that strong exports help developing countries to overcome some obstacles to economic growth, such as insufficient resources, low level of technology, and inadequate production scale. The main objective of this study is to determine the effect of agricultural exports on economic growth in Indonesia. This study will be analyzed using the Fixed Effect Model (FEM) method and taken from secondary data for the 2005-2018 period. Other research findings reveal that exports have a positive effect on economic growth.** Keyword: Indonesia, Agricultural Exports, Economic Growth, Fixed Effect Model (FEM) Method
Social-24	**Influence Contribution to Economic Education and Tourism Management Towards Increasing Community Welfare in the Olele Tourism Object Bone Bolango Regency.** Meyko Panigoro[1,] Ardiansyah[2,]Cristian Polamolo[3] [1,2,3]Lecturer at the Faculty of Economics, Universitas Negeri Gorontalo, Indonesia Emailmeyko.panigoro@ung.ac.id, ardiansyah@ung.ac.id **Abstract: Tourism is one of the sectors that contributes the most to economic growth and is one of the priority sectors. In the province of Gorontalo itself, the tourism sector was chosen as a development priority sector because the government realized that the tourism sector was able to boost people's welfare by involving young people and women as workers. This study aims to examine: 1) the effect of the contribution of economic education on improving people's welfare in olele tourism objects; 2) the influence of tourism management on improving people's welfare in olele tourism objects, 3) the influence of the contribution of economic education and tourism management on increasing people's welfare in olele tourism objects. This research is an explanatory research with a quantitative approach using multiple linear regression methods. The population is all the people in the olele tourism village consisting of Olele Tengah hamlet, Pentadu hamlet, Hungayokiki hamlet and Idanto hamlet. The sample of this research was 297 heads of families using proportional random sampling technique. The data collection process uses a questionnaire. The results of this study can be concluded: 1) the contribution of economic education has a positive and significant effect on improving people's welfare in olele tourism objects; 2) tourism management has a positive and significant effect on**

	improving people's welfare in olele tourism objects. Keywords: economic education, tourism management, community welfare·
Social-25	**Assessing selected stingless bee farms in Bicol, Philippines using the indicators of melitourism as a social enterprise** No data [ID= 487] **Abstract: The demand for stingless bee honey has been growing over the years as more and more people are becoming aware of its health benefits. The demand is such that beekeepers are hard pressed to keep up supply-wise. Furthermore, very few people are aware of the existence of stingless bees, even though they are indigenous to the Bicol region. Unique because of their stingless nature, they have a high potential to be of interest for farm tourists who are looking for something new and educative. However, despite the high demand for stingless bee honey and the potential of stingless bees as an attraction, melitourism has barely gained traction as a tourism subsector in the Philippines. This qualitative and descriptive study aims to assess selected stingless bee farms in the Bicol region using the indicators for melitourism as a social enterprise. The researchers undertook environmental scanning and conducted interviews among stingless bee farmers and other tourism stakeholders. The study shows that not all stakeholders are involved in the melitourism endeavors of the farmers. The farmer also needs to incorporate the communityâ€™s local culture to give the tourists a wholistic narrative about the community where the beekeeping activity is being conducted. Melitourism has a potential to grow as subsector of farm tourism if all the stakeholders are involved and incorporated with other local cultural treasures and traditions in its narrative presentation.** Keywords: Melitourism, agritourism, farm tourism, stingless bee, stingless bee honey
Social-26	**Satisfaction and Customer Loyalty for Sokan Rice in Bengkulu, Indonesia** Nyayu Neti Arianti[1], Reflis[1], Adrian Rizky Rama Putra, Melli Suryanty[1] [1]Department of Agricultural Socio-Economics, Faculty of Agriculture, University of Bengkulu Correspondent Email: nnarianti@unib.ac id **Abstract: SokanÂ rice is a pera rice brand which is quite popular among rice consumers in Bengkulu. Generally, rice in Indonesia is fluffier and stickier, but pera rice is not. Pera rice is almost identical to Basmati rice, which India and Pakistan cultivate. Although the center of pera rice production in Indonesia is in West Sumatra Province, in recent years, this type of pera rice has begun to enter the Bengkulu City rice market and has many loyal consumers. This study analyzes consumer satisfaction and loyalty toÂ SokanÂ rice in Bengkulu City. We examine sixteenÂ SokanÂ rice attributes to the consumers to know the consumer satisfaction index and level of consumer loyalty. The research methods use Importance Performance Analysis (IPA), the Consumer Satisfaction Index (CSI), and the Pyramid Loyalty. We found that the index satisfaction ofÂ SokanÂ rice consumers is 0.812, which means that generally, the consumers are very satisfied with the attributes ofÂ SokanÂ rice. However, three rice attributes must be repaired: rice cleanliness, prices, and the display of rice price lists in a shop.Â Consumers dominate sokan rice consumer loyaltyÂ at the fourth levelÂ (liking the product). This level is the transition point at which the consumer is passionate about theÂ SokanÂ brand and a trustworthy brand enthusiast. Their affinity for the brand is based primarily on emotion. In many cases,Â SokanÂ rice consumers need help articulating clearly why they like the brand. They just do.** Keyword: Pera rice, Sokan Brand, Consumer, Satisfaction, Loyalty.
Social-27	**LEGAL PROTECTION FOR THE FRANCHISEE AGAINST UNILATERAL TERMINATION BY THE FRANCHISOR IN FOOD AND BEVERAGE RESTAURANT FRANCHISING AGREEMENTS IN INDONESIA** Ni Luh Made Mahendrawati, IB Gede Agustya Mahaputra, IA Cynthia Saisaria Mandasari Warmadewa University, Bali, Indonesia, Corresponding author: made.mahendrawati@gmail.com **Abstract: Unilateral termination of the agreement by the franchisor in a food and beverage restaurant franchise often occurs in Indonesia without regard to the consequences of losses suffered by the franchisee. The form of legal protection for the parties is not specifically regulated in one statutory regulation by the Indonesian goverment, but in general it is determined in the restaurant franchise agreement made by the franchisor which has been agreed upon by the franchisee and carried out in accordance with the agreement of the parties. In every legal relationship including a franchise agreement, there must be a balance and equal standing between the parties to avoid conflicts of interest. From these problems, the issues that will be discussed are the legal consequences of the food and beverage restaurant franchise agreement which was terminated unilaterally by the franchisor and legal protection for the franchisee against unilateral termination of the agreed franchise agreement. The purpose of this research is to find clear interpretations and concepts regarding the form and format of the food and beverage restaurant franchise agreement so as to provide justice, legal certainty, and benefits for the parties making the franchise agreement. To answer these problems, this study uses normative juridical research methods with a concept and statutory approach. The results of this study will have an impact on considerations of renewing franchise legal arrangements,**

	especially in the form or format of a food and beverage restaurant franchise agreement so as not to cause ambiguity in the rules and their application. Keywords: Legal Protection, Restaurant, Franchise, Unilateral Termination
Social-28	**Identify the potential utilization of environmental services and natural tourism in South Halmahera Regency** Aqshan Shadikin Nurdin[1]a, Andy Kurniawan[1,]Ramli Hadun[1,] Abdul Kadir Kamaluddin, Mahdi Tamrin[1,]Rosita[1] Department of Forestry, Faculty of Agriculture, Universitas Khairun, Ternate,North Maluku, Indonesia a)Corresponding author: aqshan@unkhair.ac.id **Abstract: Environmental services are products of biological natural resources and their ecosystems in the form of direct benefits (tangible) and indirect benefits (intangible), which include natural tourism or recreational services, water/hydrological protection services, soil fertility, erosion and flood control, beauty, uniqueness, biodiversity, carbon sequestration and storage. South Halmahera Regency is one of the regions in North Maluku Province that has diverse natural wealth such as natural beauty that has potential as a tourism object. This study aims to assess the use of environmental services carried out by communities around the research area. This study used survey and interview methods. Data analysis was carried out by quantitative descriptive methods. Based on the results of observations and assessments that refer to the parameters of the Bureau of Land Management, this tourist attraction is included in class B, namely (Medium quality). The assessment is seen from the aspect of the quality of tourism objects consisting of elements of authenticity, uniqueness, beauty, integrity and availability of development land, and institutional aspects. Although currently the management has not been optimal, support from related parties is needed in the development of tourism.** Keywords: potential, environmental services, nature tourism
Social-29	**DETERMINING FACTORS INFLUENCING RURAL TOURISM (A NEXUS OF BALI PROVINCE, INDONESIA)** I Wayan Parwata Faculty of Engineering and Planning, Warmadewa University Email iwayanparwata01@gmail.com **Abstract: The aim of this paper is to analyze the contribution of determining factors on rural tourism in the Province of Bali, Indonesia. In Indonesia, rural tourism development is to transform rural areas as touristsâ€™ destinations. The study identified 14 determining factors including the predictor or independent variables and criterion variables or dependent variables. The research design applies a multiple regression analysis, of which data were collected using a structured questionnaire. Multiple regression analysis was used to predict the contribution of the predictor variables on the criterion variables whose values were measured quantitatively using a structured questionnaire. Results show that location (access, parking area, traffic, feasibility), facility (tidiness, neatness, cleanliness, utilization), service (reliability, responsiveness, guarantee, empathy, performance), touristâ€™s attraction (type, activity, souvenir), promotion (content, media, timing, frequency) could account for variation of the touristsâ€™ decision making to rural tourism in the Province of Bali (R=0.459; R Square =0.459; Adjusted R Square=0.067). Factors that influence the unsuccessful rural tourism in Bali are: parking space is inadequate, facilityâ€™s untidiness, incompleteness, uncleanliness, improper facility utilization, personnelâ€™s low reliability, irresponsiveness, and low assurance, low quality of promotion media, infrequent promotion, monotonous touristâ€™s activity, less varied and unique souvenir, which affect touristâ€™s reluctant visit decision making to rural tourism in the Province of Bali.** Keywords: Determining factors, rural tourism, a nexus, regression analysis
Social-30	**Factors Influencing the Utilization of Dental and Oral Health Services (Case Study at the Matur Health Center, Agam District)** Ibnu Fajar Putra[1,] Anne Putri[2,] Lendrawati[3,] Aries Tanno[4] [1,2)]Magister Manajemen ITB Haji Agus Salim Bukittinggi [3,4)]Universitas Andalas Padang, Indonesia **Abstract: This study aims to see the predisposing effect on the utilization of dental and oral health services in the mature health center of Agam Regency, the effect of Enabling on the utilization of dental and oral health services in the mature health center of Agam Regency and the effect of reinforcing on the utilization of dental and oral health services in the mature health center of the Regency. Religion. The number of samples is 60 respondents. The analysis technique used was a quantitative descriptive analysis technique which was carried out on three variables that were thought to influence the utilization of dental and oral health services at the Matur Public Health Center, Agam Regency. The analysis tool used is SEM PLS. The results of the study found that the predisposing factor had no significant effect on the Utilization of Health Services at the Matur Health Center. The Enabling factor has a significant effect on the Utilization of Health Services at the Matur Health Center and the Reinforcing Factor has a significant effect on the Utilization of Health Services at the Matur Health Center. Enabling Factors, Predisposing Factors, and Reinforcing Factors in predicting Health Service Utilization belong to the strong category, which means that the**

	model has predictive relevance with a value of 0.656. Variable Health Service Utilization is influenced by variables, Predisposing Factors, Enabling Factors and Reinforcing Factors by 76.6% and the remaining 23.4% is influenced by other variables. Keywords: Health Services, Enabling, Predisposition, Reinforcing
Social-31	**The Effect of Work Competencies and Workload on Work Motivation and Their Impacts on the Performance of Saiba Operators in the Jambi Regional Police** Aries Tanno[1,] Anne Putri [2,] Deny Juwanda [3] Yulianda Nofika Sari[4,] Siti Maryam[5] [1)]Universitas Andalas, Padang, Indonesia [2,4)]Magister Manajemen ITB Haji Agus Salim Bukittinggi, Indonesia [3)]Magiter Manajemen STIE KBP Padang, Indonesia [5)]Accounting Study Program ITB Haji Agus Salim Bukittinggi, Indonesia **Abstract: This study aims to determine the effect of work competence and workload on work motivation and their impact on the performance of saiba operators. This research is motivated by the low ability of operators in the use of saiba applications as accounting information systems for preparing financial statements, multiple positions resulting in increased workload of saiba operators that have an impact on the quality and quantity of financial statement presentation, low competence of saiba operators who are still low in presenting financial statements , the low participation of saiba operators in the development of saiba accounting information systems and the suboptimal performance of saiba operators in the Jambi Regional Police. Data processing method is path analysis. Data collection techniques using a questionnaire. The research respondents were 35 Saiba Operators at the Jambi Regional Police. Hypothesis testing was calculated using the IBM Statistical Package for Social Science (SPSS) version 24.0. The results of this study found that work competence has a significant effect on work motivation, workload has no significant effect on work motivation, work motivation has a significant effect on performance, work competence has a significant effect on performance, workload has a significant effect on performance, work competence has a significant effect on performance with work motivation as an intervening variable and workload does not significantly influence performance with work motivation as an intervening variable on SAIBA Operators in the Jambi Regional Polic**e. Keywords:work competence, workload, work motivation, performance, saiba operators.
Social-32	**ANALYSIS OF THE INFLUENCE OF MAINTENANCE BANK SYARIAH INDONESIA ON MOBILE BANKING ECONOMIC TRANSACTION ACTIVITIES IN THE TERRITORY OF INDONESIA IN THE LAST WEEK** Alamin[1,]Nidaan Alfia, Wahyu Nusantara Illahi,S[3,] Fauziah Sukmawati[4,] Hadi Subeno[5,] Husnul Bashir[6,] Refiter Putra[7,] Wira Andespa[8,] Ahmad Ridwan[9,] Elvi Nasriandani[10,] Zelfia Khairani[11,] Winda Febriani[12,] Asyari[13] [1,2,3,4,5,6,7,8,9,10,11,12,13]Fakultas Ekonomi Dan Bisnis Islam,Uin Sjech M. Djamil Djambek Bukittinggi, Indonesia Email Daffapramuda7@Gmail.com **Abstract: Indonesia Sharia is a financial institution currently trending but has experienced extraordinary maintain in recent times. The purpose of this study is to determine the influence of maintenance Bank Syariah Indonesia on mobile banking economic transaction activities in the territory of Indonesia. This research method is quantitative with descriptive analysis and data collection with questionnaires and the level is the Likert scale of correspondent data on Indonesian Islamic bank customers randomly from various regions of Indonesia affected by a total of 38 people. The results of this study are: Based on the ANOVA test, a value of F = 0.197 was obtained with a probability of significance of 0.022, a significance value of 0.022 when compared to a value of.** Keywords : Maintenance, Transaction, Mobile Banking
Social-33	**Analysis of the Influence of Halal Tourism on the Interest of Foreign Wasatawan Case Study on Islamic Tourism Places in West Sumatra** Fifa Alfionasup[1]sup,Febrina Adita Putrisup[2]sup,Melisa Anggrenisup[3]sup, Restikasup[4]sup, Mardhiyya Azhari Bsup[5]sup, Rahma Elsa Fitrianisup[6]sup,Rani Ashari Febriansup[7]sup,Zulfa Suryanisup[8]sup,Eka Novia Herdiamysup[9]sup,Desma Handayanisup[10]sup, Tifany Yeldi Astutisup[11]sup, Vivi Rosdiyantisup[12]sup, sup[1]sup>,2,3,4,5,6,7,8,9,10,11,12 Faculty of Economics and Islamic Business, Uin Sjech M. Djamil Djambek Bukittinggi, Indonesia Email: fifaalfiona723@gmail.comAbstract **Abstract: Halal tourism in West Sumatra is currently an attractive nominated among the world community so many foreign tourists go on vacation to tourist attractions in West Sumatra. This study aims to see the influence of halal tourism on the interest of foreign tourist case studies on Islamic tourist attractions in West Sumatra. This research method is quantitative with descriptive analysis and data collection with questionnaires and the level is the Likert scale from correspondent data on tours that have come to West Sumatra, correspondent data as many as 38 tourists. The results of this study are: Based on the ANOVA test, a value of F = 0.197 was obtained with a probability of significance of 0.022, a significance value of 0.022 when compared to a value of <alpha (0.05), then the H0 hypothesis was rejected and the Ha hypothesis was accepted, which means that there is**

	a significant influence on halal tourism on the interest of foreign tourist, a case study on Islamic tourist attractions in West Sumatra. The Level of Influence of Halal Tourism Variables on Foreign tourist Case Study on Islamic Tourism Places in West Sumatra was 0.385 or 38.5% while 61.5% was influenced by other variables not included in this study. Keywords: Halal tourism, Interests, overseas tourists
Social-34	**ANALYSIS OF INFLATION AND RUPIAH EXCHANGE RATE ON MUDHARABAH SAVINGS AT SHARIA COMMERCIAL BANKS** Mesis Rawati[1], Wewis Gilang Sari[2], Yolanda Effendy[3], Siti Aisyah[4], Herliza Agustin[5], Febri Rahmita[6], Selvi Purwaningsih[7], Ridha Fauzana[8], Tisa Amelia[9], Rayzul Hawari[10], Andriawan[1] [1] Faculty of Islamic Economics and Business, Sharia Economics, State Islamic University of Sjech M.Djamil Djambek Bukittinggi, Indonesia Email yolanda.yy@gmail.com **Abstract: Inflation has always been a hot economic topic discussed by various circles, inflation is one of the macroeconomic symptoms associated with the decline in the exchange rate (money). This concludes that the impact of the economic crisis depends on the nature of the income and wealth of each group. If the income is fixed or increasing but lower than the inflation rate, then the condition is severe. Conversely, if their income rises higher the inflation rate, then their material well-being increases. This study aims to analyze the effect of inflation and the rupiah exchange rate on Mudharabah savings in Islamic banking. The data used are time series data published by Bank Indonesia from the Sharia Banking Statistics Report and the Central Statistics Agency (BPS). This research method is included in the type of quantitative research. The results of this study show that simultaneously the variables Inflation, and Exchange Rate together have a significant effect on Mudharabah Savings.** Keywords: Inflation, Exchange Rate (Exchange Rate) and Mudharabah Savings.
Social-35	**ANALYSIS OF INFLATION AND RUPIAH EXCHANGE RATE ON MUDHARABAH SAVINGS AT SHARIA COMMERCIAL BANKS** Mesis Rawati[1], Wewis Gilang Sari[2], Febri Rahmita[3], Selvi Purwaningsih[4], Herliza Agustin[5], Yolanda Effendi[6], Siti Aisyah[7], Ridha Fauzana[8], Tisa Amelia[9], Rayzul Hawari[10], Andriawan[11], Awaluddin[12] [1,2,3,4,5,6,7,8,9,10,11,12F]aculty of Islamic Economics and Business Sharia EconomicsState Islamic University of Sjech M. Djamil Djambek Bukittinggi, Indonesia Email: mesisrawatiwati@gmail.com **Abstract: Inflation has always been a hot economic topic discussed by various circles, inflation is one of the macroeconomic symptoms associated with the decline in the exchange rate (money). This concludes that the impact of the economic crisis depends on the nature of the income and wealth of each group. If the income is fixed or increasing but lower than the inflation rate, then the condition is severe. Conversely, if their income rises higher the inflation rate, then their material well-being increases. This study aims to analyze the effect of inflation and the rupiah exchange rate on Mudharabah savings in Islamic banking. The data used are time series data published by Bank Indonesia from the Sharia Banking Statistics Report and the Central Statistics Agency (BPS). This research method is included in the type of library research, namely by looking for research data or information through reading scientific journals, reference books, published financial statements and publication materials available in the library as support in this writing. The results of this study show that simultaneously the variables Inflation, and Exchange Rate together have a significant effect on Mudharabah Savings.** Keywords: Inflation, Exchange Rate (Exchange Rate) and Mudharabah Savings.
Social-36	**Implementation of Organic Rice Farming Based on Local Wisdom: Case of Rice Farming in Bali Province, Indonesia** Gede Sedana[1] and I Ketut Wirawan[2] [1] Faculty of Agriculture, Dwijendra University, Indonesia Email: gedesedana@gmail.com [2] Faculty of Law, Dwijendra University, Indonesia Email: iketutwirawan@gmail.com **Abstract: Modern agriculture (green revolution) is recognized as having brought rapid progress for agricultural development but has a negative impact on the environment due to the widespread use of agro-inputs and intensive land exploitation. Regarding SDGs in various countries, it should be carried out organic farming to improve and develop better agroecosystems and products. This is in line with the local wisdom in Bali province, Indonesia, namely Tri Hita Karana (THK) which emphasizes the harmony and balance to environment. SRI technique is one of the practices introduced by the government to farmers. This paper aims to describe organic farming based on local wisdom, to portrait the knowledge and attitude of farmers toward SRI technique, and government support to rice organic farming through System of Rice Intensification (SRI). THK concept has been implemented to support sustainable agriculture development consisting of economic viability, ecologically sound and friendly, socially just, culturally appropriate. SRI technique implemented by farmers is addressed to develop the principles of feeding the soil to provide food for the plants, and not feeding the plants directly or natural building soil fertility. In term of THK, this is a manifestation of respect to the God of Fertility. Farmers can make efficiency of agricultural inputs uses, and good**

	quality of rice so that the price is higher. It provides benefits for improving soil, water and air in paddy fields and their surroundings. THK application is used as a guide in organic farming, so that farmers always maintain a harmonious relationship with God, nature, and fellow humans. The average level of farmer knowledge regarding the SRI technique is in the high category with a score of 72.50%, and their attitude is in the agree category with a score of 78,80 %. The government has supported organic farming through the policy and provide the subsidy of inputs for production and massive extension and training to farmers. Keywords: organic farming, soil fertility, harmony, subsidy
Social-37	**Implementation of Organic Rice Farming Based on Local Wisdom: Case of Rice Farming in Bali Province, Indonesia** Gede Sedana[1] and I Ketut Wirawan[2] [1] Faculty of Agriculture, Dwijendra University, Indonesia Email: gedesedana@gmail.com [2] Faculty of Law, Dwijendra University, Indonesia Email: iketutwirawan@gmail.com **Abstract: Modern agriculture (green revolution) is recognized as having brought rapid progress for agricultural development but has a negative impact on the environment due to the widespread use of agro-inputs and intensive land exploitation. Regarding SDGs in various countries, it should be carried out organic farming to improve and develop better agroecosystems and products. This is in line with the local wisdom in Bali province, Indonesia, namely Tri Hita Karana (THK) which emphasizes the harmony and balance to environment. SRI technique is one of the practices introduced by the government to farmers. This paper aims to describe organic farming based on local wisdom, to portrait the knowledge and attitude of farmers toward SRI technique, and government support to rice organic farming through System of Rice Intensification (SRI). THK concept has been implemented to support sustainable agriculture development consisting of economic viability, ecologically sound and friendly, socially just, culturally appropriate. SRI technique implemented by farmers is addressed to develop the principles of feeding the soil to provide food for the plants, and not feeding the plants directly or natural building soil fertility. In term of THK, this is a manifestation of respect to the God of Fertility. Farmers can make efficiency of agricultural inputs uses, and good quality of rice so that the price is higher. It provides benefits for improving soil, water and air in paddy fields and their surroundings. THK application is used as a guide in organic farming, so that farmers always maintain a harmonious relationship with God, nature, and fellow humans. The average level of farmer knowledge regarding the SRI technique is in the high category with a score of 72.50%, and their attitude is in the agree category with a score of 78,80 %. The government has supported organic farming through the policy and provide the subsidy of inputs for production and massive extension and training to farmers.** Keywords: organic farming, soil fertility, harmony, subsidy

Product-Development

Product-1	**Analysis of Materials Pakaging In Agro-Industrial For Quality Sesame Oil** Luluk Sulistiyo Budi Maruf Pambudi Nurwantara, Dian Ardifa Iswari Faculty of Agriculture. Agrotechnology Studies Program.Merdeka Madiun University.East Java. Indonesia Faculty of Entrepreneurship Muhammadiyah University of Madiun .East Java. Indonesia Email luluksb@unmer-madiun.ac.id **Abstract: The raw material is an essential factor in agro-industry growth. Quality raw materials will produce quality end products of agro-industry as well. General characteristics of agroindustry are easily damaged. not uniform and not always available. Similarly for sesame agroindustry whose production period is unqualified anxiety is all due to capacity constraints. The purpose of this research is how to maintain the quality of raw materials of sesame agroindustry by using good packaging method. The research method used factorial random analysis. The first factor is sbr1. sbr2. sbr3. sbr4. and m2 and the second factor is storage and packing element with a plastic bottle. polymer bottle. plastic. The results showed that there was an interaction between the packaging with the varieties tested. Likewise. the packaging of increased quality and oil produced. Proper storage raw materials will give positive results in agro-industry mining.** Keywordsâ€" Raw Materials. Packaging. Agroindustry. Sesame Oil.
Product-2	**CHARACTERIZATION OF VEGETAL CHITOSAN AS AN EMERGING ANTIMICROBIAL FOOD PACKAGING ALTERNATIVES** Rovina Kobun[1,] Iversen Luk Jun Lam[1,] Mariah Aqilah Mohd Affandy[1,] Mailin Misson[2] [1]Faculty of Food Science and Nutrition, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysia 2Biotechnology Research Institute, Universiti Malaysia Sabah, Jalan UMS, 88400 Kota Kinabalu, Sabah, Malaysiarovinaruby@ums.edu.my

	Abstract:The biodegradable natural polymers are the subject of a wide spectrum on research to employ them as alternatives to petroleum-based synthetics for food packaging. Chitosan, extracted from superior living organisms, increases hydrogen bonds in polymer chains, strengthening bioplastics. Commonly, chitosan comes from marine crustacean exoskeletons, which fluctuate seasonally and are difficult to extract. Thus, mushroom cellular walls are utilized to obtain chitosan by deacetylating their high chitin content. This study compares the physicochemical, morphological, and antimicrobial properties of vegetal chitosan from five mushroom species to commercial chitosan. The utilized mushrooms are Auricularia auricula-judae, Hericium erinaceus, Pleurotus ostreatus, Tremella fuciformis, Lentinula edodes and the chitosan powder from crabs. After extraction, the samples were characterised physiochemically and morphologically. This study examined degree of deacetylation, ash, moisture, solubility, FTIR, SEM, EDX, and XRD. As for the antimicrobial analysis, PCA was used in which the microbial samples were inoculated from two different sampling parameters consists of a human hand and a banana. Each fungus species yielded different percentages of chitin and chitosan. All FTIR spectra depicted a similar absorbance pattern with different peak intensities. EDX spectroscopy provided affirmation of the extraction of chitosan in the samples of H. erinaceus, L. edodes, P. ostreatus and T. fuciformis. The XRD graphs reveals to almost consistent to one another except for the samples of A. auricula-judae, which showed sharp peaks at ~ 37Â° and ~ 51Â°. The crystallinity index for the same sample was also lower than the others by 17%. The L. edodes sample degraded fastest under moisture content, while the P. ostreatus sample was the most stable. H. erinaceus had the highest solubility and inhibition of skin microflora and peel microbes of Musa acuminata Ã— balbisiana. This research extensively aims to engineer a promising active packaging ingredients to delay fresh produce senescence.

KEYWORDS Chitosan, Smart Packaging, Antifungal, Forest fungi, Postharvest

Product-3	**Utilization of coffee by-products for kombucha production: evaluation of physicohemical and sensory quality** Murna Muzaifa[1,2,3,] Yusya Abubakar[1,2,3,] Safrida[3,4,] Cut Nilda[1,3,] Irfan[1] 1Department of Agricultural Product Technology, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia 2Centre for Coffee and Cacao Research, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia 3Halal Research Centre, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia 4Departement of Biology, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia Email murnamuzaifa@unsyiah.ac.id **Abstract: Coffee skin is the largest by-product of coffee processing and has not been utilized optimally. The coffee skin produced differs based on the type of process applied, which can be either pulp or husk. This study also aims to determine the effect of the type of coffee skin and the concentration of sugar used on the quality of the produced kombucha. This study used a randomized block design (RBD) with two factors, the type of coffee skin (pulp and husk) and sugar concentration (K1 = 10%, K2 = 15%, K3 = 20%). Parameters analyzed for kombucha products were pH, alcohol, tannin, total phenolic compounds, antioxidant activity, hedonic and descriptive tests for color, aroma and taste. The results showed that the type of coffee skin had a significant effect on pH, alcohol content, tannins, antioxidant activity, total phenols, color, aroma and taste of kombucha. The best cascara kombucha tea is obtained from husk with a sugar concentration of 15%. The results of this study are expected to expand the use of cascara and its commercialization.** Key words: cascara, coffee by-product, husk, kombucha, pulp
Product-4	**Design and Analysis of Economic Scale for Downstream Palm Biomass into Palm-Cellulose Blend Bioplastic Industry** Hermawan[1,] Sawarni Hasibuan[2,] Bambang Wahyudiono[3] [1,3] Universitas Pakuan, Bogor, Jawa Barat, Indonesia [2]Universitas Mercu Buana, Jakarta, Indonesia **Abstract: The potential of empty palm fruit bunches biomass from the processing of palm oil mills in Indonesia reaches 56.35 million tonnes per year. The cellulose content in the empty palm fruit bunches biomass reaches 40% cellulose can be used for various downstream products, including bioplastic composite products. Downstream product biomass of empty palm fruit bunches as a raw material for the production of bio-plastics, starch-cellulose blend, has been extensively studied on a laboratory scale but has not been commercialized successfully. The aim of this study was to design a starch cellulose blend bioplastic industry using the raw material of empty palm bunches biomass. The design produces two separate factories, namely a cellulose factory and a bioplastic composite factory. The bioplastic industry scenario is carried out using 3 capacity scales, i.e. large scale 190,000 tons/year, medium scale 115,00 tons/year, and small scale 40,000 tons/year. Financial analysis of the all scales of production capacity as a whole is feasible. The result of profit margin is at a minimum of 17.6% with an average payback period between 3-5 years and an IRR between 24-49%. Analysis of the economic value produces an Escale index of 0.64 which indicates that economies of scale have been achieved. The economic scale of the bioplastic starch-cellulose blend industry from empty palm fruit bunches biomass is at a production capacity of 40,000 tons per year with a minimum supply of empty palm empty fruit bunches biomass of 20,203 tons/year. At the smallest economic scale, the actual BEP is only 6627.4 tons/year, where this condition can be achieved because the**

	bio-plastics industry has relatively small fixed costs. Keywords : starch cellulose-blend bioplastic; empty palm fruit bunches biomass; industrial design, smallest economic of scale.
Product-5	**CHARACTERISTICS OF ORGANIC RED RICE SPOTS (Oryza Nivara) WITH THE ADDITION OF PANDAN LEAF FLOUR** I Ketut Budaraga Eddwina Aidila Fitria Harfon Sagoto Department of Agricultural Product Technology, Faculty of Agriculture, Ekasakti University, Veteran Street No. 26 B Padang, Indonesia Corresponding author: iketutbudaraga@unespadang.ac.id **Abstract: The simplest form of processed red rice is the manufacture of brown rice flour. Brown rice flour can be used as a component of a mixture with wheat flour in ordinary sponge cake. On the other hand, domestic industrial demand forces Indonesia to import wheat from abroad. the use of domestic wheat from year to year. To reduce the use of wheat, it can be substituted with brown rice flour to produce steamed cakes which contain high nutritional content and are preferred. To increase the taste of coke cakes in the manufacture, pandan flour is added. The purpose of this study was to determine the characteristics of the brown rice flour substitution of steamed cakes with the addition of pandan flour as a flavor and to determine the best addition of pandan flour to produce brown rice flour steamed cakes that the panelists liked. The results of this study were the Characteristics of Organic Red Rice Steamed Sponge (Oryza Nivara) with the addition of Pandan Leaf Flour which had a very significant effect on water content, ash content, fat content, protein content, total sugar content and organoleptic test of steamed sponge cake and based on organoleptic test results, sponge cake Steam is the most preferred by consumers, namely treatment A with the addition of pandan leaf flour as much as 3% with an average value of 5.65 by organoleptic test, where the value of water content (13.32%), ash content (0.69%), crude fiber content (5.95%), antioxidant levels (6.23%).** Keywords: Characteristics, coccus cake, brown rice, pandan,
Product-6	**SURFACE AREA OF INTESTINAL VILLI AND BODY WEIGHT CHICKEN KUB AFTER GIVING NEEM LEAF AQUEOUS EXTRACT (Azadirachta indica) IN DRINKING WATER** DA Yulihastuti[1], I Setyawati[2] [1]Laboratorium Animal Physiologi Departement Biology, Faculty Mathematic and Natural Sciences, Udayana University [2]Biology Study Program, Faculty of Mathematics, Natural and Earth Sciences. Manado State Universityemail: ariani_dwi@unud.ac.id **Abstract: Neem (Azadirachta indica A.Juss) is one of the herbal plants that can be used as animal feed. Giving herbs is an effort to increase optimal and efficient productivity (WHO, 2002). The phytochemical compounds of neem leaves contain flavonoids, saponins, tannins and terpenoids. The purpose of this study was to see the effect of neem leaf aqueous extract (NLAE) on the surface area of â€‹â€‹the intestinal villi and body weight of Kampung Unggul Balitbangtan (KUB) chickens. Using a completely randomized design (CRD) with 200 unsex KUB-1 chickens aged 1 week with an initial weight of 53 Â± 2 g with four treatments namely P0 (without NLAE), P1 (1% NLAE), P2 (3% NLAE) and P3 (5% NLAE), five replicates and 10 individuals per repeat unit. Neem leaves were taken from the Bukit Jimbaran area, South Kuta, Badung. Neem leaf aqueous extract was given for five weeks. The percentage of body weight gain of KUB chickens at the age of 1â€“6 weeks that were given NLAE were P0 88.67%, P1 88.97%, P2 88.68% and P3 88.57%. The body weight gain between chickens given neem leaf aqueous extract and the control was not significantly different (P>0.05) between treatments. The surface area of â€‹â€‹the intestinal villi of KUB chickens in treatment P1 (1% NLAE) had the highest value compared to the other treatments. The conclusion of this study was that the administration of NLAE at a concentration of 1% -5% did not show a significant difference in body weight gain up to 6 weeks of age in all treatments and did not show a difference in the surface area of â€‹â€‹the intestinal villi of KUB chickens.** Keywords: Neem, aqueous ,villi, intestine, weight
Product-7	**Preparation and Characterization of Poly(vinyl alcohol)/ Cellulose Nanocrystal/ Zinc Oxide Biocomposites for Potential Food Packaging Application** Nor Hakimin Abdullah Advanced Materials Research Centre (AMRC), Faculty of Bioengineering and Technology, Universiti Malaysia Kelantan, Locked Bag 100, 17600 Jeli, Kelantan, Malaysia norhakimin@umk.edu.my **Abstract: In this study, cellulose nanocrystals (CNC) and commercial zinc oxide (ZnO) were prepared as a hybrid filler to reinforce the polyvinyl alcohol (PVA) matrix. Initially, the different concentrations of CNC (1wt%, 2wt%, 3wt% and 4 wt%) were mixed with ZnO, and the mixture was characterised by stability and Attenuated Total Reflection- Fourier Transform Infrared (ATR-FTIR). The prepared CNC/ZnO hybrid filler (with different ratios) was then added to 50 mL**

	of 5 wt% PVA and vigorously mixed for 40 minutes at 90Â°C until the mixture was completely homogeneous and well mixed. The prepared PVA/CNC/ZnO nanocomposites were then characterised using visual inspection, scanning electron microscopy (SEM) and thermogravimetric analysis (TGA). The results found that the CNC/ZnO mixture was homogenous and well dispersed for up to 90 days. The FTIR-ATR spectra revealed the presence of the stretching and bending vibrations of the hydroxyl group (1635 cm-l), O-H bending and C-O-C stretching (3318 cm-1). Visual inspection of PVA/CNC/ZnO nanocomposites showed that increasing the weight ratio of CNC/ZnO in nanocomposite thin films leads to opaquer and whiter thin films, while the SEM revealed the surface morphology of PVA blend integration with CNC/ZnO became rougher as the ratio increased. TGA analysis showed the highest thermal stability with a higher CNC/ZnO hybrid filler concentration than the rest of the thin films. The tensile strength and modulus of nanocomposite films increased from 1.75 to 16.25 MPa and from 125.266 to 366.304 MPa at CNC/ZnO/PVA (1wt%) to CNC/ZnO/PVA (3wt%), respectively and started to decline at CNC/ZnO/PVA (4wt%)). The prepared CNC/ZnO/PVA nanocomposites could be potentially used for biodegradable food packaging applications. Keywords: Cellulose nanocrystals, ZnO, hybrid filler, PVA, biodegradable
Product-8	**Improvement of sensory characteristic of sliced bananas (Musa acuminata Linn.) as a stirred yogurt topping** M E Fauziah[1,] D Yunita[1,] M Muzaifa[1,] E Mugampoza[2] [1]Department of Agricultural Product Technology, Faculty of Agriculture, Universitas Syiah Kuala, Jl. Tgk. Hasan Krueng Kalee No. 3, Darussalam, Banda Aceh 23111, Indonesia [2]Department of Food Science and Technology, Kyambogo University, P.O. Box 1, Kampala, Uganda Email dewi_yunita@usk.ac.id **Abstract: Yogurt can be consumed with sweet and/or fruits, as a base or topping. However, fruits topping breaks down faster specifically in fruits that easily turning into brown colour like bananas. Therefore, this study aimed to improve the sensory characteristic of slice bananas (Musa acuminata Linn.) as a stirred yogurt topping. Ascorbic acid was used in three different concentrations (C; 1%, 2%, and 3%) at three different soaking times (T; 4 mins, 5 mins, and 6 mins). Samples without soaking in ascorbic acid were used as a control. The sliced bananas soaked in ascorbic acid and used as the yogurt topping were analysed for colour (L*, a*, and b*) and hedonic test (taste, aroma, and colour) of 30 semi-trained panellists. The most preferred sample was then analyzed by descriptive test (taste, aroma, and colour). The results showed that panellists mostly liked the sliced banana soaked in 2% ascorbic acid for 4 minutes. It had a strong sour taste, yogurt aroma, and brownish yellow colour. The color values of the preferred sample of L*, a*, and b* were 98.67 (white), 13.9 (red), and 47.3 (yellow), respectively. On the other, the control sample had sour taste, banana aroma, and blackish yellow colour. The color values of the control sample of L*, a*, and b* were 94.2 (white), -5 (green), and 37.8 (yellow).** Keyword. Banana, stirred yogurt, topping, sensory.
Product-9	**Enhancement of Antimicrobial Activity Nanogel Hand Sanitizer Containing Eugenol and Citronellal Oil** Asmawati, Irfan[1,] N Arpi[1,] R Moulana[1,] Rasdiansyah[1] [1]Department of Agricultural Product Technology, Faculty of Agriculture, Universitas Syiah Kuala Email asmawati@usk.ac.id **Abstract: Hand sanitizer is often used as a hand washing agent to remove microbials on the hands. Commercial hand sanitizers usually contain alcohol as anti-microbials, and when used in the long term will increase the risk of hand irritation. Some essential oils, e.g eugenol and citronellal oil, have the anti-bacterial activity which can be used as to replace alcohol in commercial hand sanitizer. The antimicrobial in hand sanitizer containing eugenol and citronellal will be improved through nano-technology. The aim of this study was to determine the effect of differences oil (eugenol and citronellal), the concentration of the oil (2.5% and 5%), and the speed of homogenization (6000 and 12000 rpm) on the anti-microbial activity, antioxidants activity, and the characteristics of the nanogel hand sanitizer produced. The results showed that the oils, oil concentration and homogenization speed had a significant effect on the anti-microbial activity, antioxidant activity, physical and and sensory characteristics of nanogel hand sanitizer. The diameter of inhibition zone of nanogel hand sanitizer that was formulated using eugenol oil (6.3-7.1 mm) higher than citronellal oil (6.1 mm-6.4 mm). The lowest antioxidant activity was found in nanogel hand sanitizer formulated by 2.5% eugenol oil and homogenized at 6000 rpm of 54.1%. The pH value of the hand sanitizer was 7.07 â€“ 7.20. Based on the hedonic test, the panelists preferred the color, aroma and texture of nanogel hand sanitizer containing 2.5% citronella oil which was homogenized at 12000 rpm.** No data [ID= 463]
Product-10	**Formulation and Market Potential of Aloe-Buni Functional Drinks** Luh Kade Datrini[1,] Luh Suriati [2,] I Gede Pasek Mangku[2,] Hanylin A Hidalgo[3,] Josephine Red[4,] Bartholomew Elopere[2,] Anak Agung Sagung Manik Cindrawati[5,] Ni Luh Putu Sulis Dewi Damayanti[5]

	[1]Accounting Program Study, Economic Faculty, Warmadewa University, Denpasar, Indonesia. [2]Department of Food Science and Technology, Faculty of Agriculture, Warmadewa University, Bali, Indonesia. [3]Department of Agribusiness, Faculty of Economics and Management, Central Bicol State University of Agriculture, Pili, Philippines. [4]Food Science Department, Faculty of Engineering and Food Science, Central Bicol State University of Agriculture, Pili, Philippines. [5]Magister of Science of Agriculture, Postgraduate Program, Warmadewa University, Bali, Indonesia Corresponding author: luhkadedatrini65@gmail.com **Abstract: Products made from natural raw materials are currently in great demand by the public and have even become a trend in several countries. Food products with high nutritional value are needed in everyday life. One of the potential products is functional drinks. Aloe vera (Aloe barbadense Miller) is a functional plant because all parts of the plant can be used. In making aloe vera drinks, the part that is used is the flesh of aloe vera. Another agricultural product that is rich in nutritional value is buni fruit (Antidesma bunius). Buni fruit is known to have pharmacological activity as anti-dysentery, antioxidant, anti-cancer and anti-diabetic. Buni fruit extract exhibits antibacterial properties, Î±-glucosidase inhibitory activity, antidiabetic properties, important antioxidant properties. The weakness of this beverage product is the occurrence of precipitation because the total content of flavonoids in buni fruit is quite high. Drink formulation from aloe vera gel and buni fruit is a basic thing that needs attention to extend the shelf life. The aims of this study were as follows: 1) To determine the effect of the proportions of aloe vera (Aloe barbadense M.) and Buni (Antidesma bunius L.) on the formula of Aloe-buni functional drink products. 2) Evaluate the market potential of Aloe-buni functional beverage products. This research consists of 2 stages: the formulation of the Aloe-buni health drink and the market potential of the aloe-bunius health drink. Completely Randomized Design factorial pattern was used for the formulation stage and descriptive method for the potential Aloe-bignay beverage market stage.** Keywords: functional drink, aloe vera, buni fruit, market potential, health drink
Product-11	**Characteristics Evaluation of Sweet Bread Fermented by Liquid Yeast From Fresh Fruits and Dried Fruits** LT Pangesthi[1] and L Sulandari[2] [1,2] Home Economic Department, Universitas Negeri Surabaya, Surabaya, Ketintang Street 60231, Indonesia. Emailluciapangesthi@unesa.ac.id **Abstract: Sweet bread made from fruit yeast has a foam-like structure formed as a result of fermentation by liquid fruit yeast. Natural liquid yeast from fruit can develop bread dough and improve bread quality, but up to this time there is least information about the characteristics of bread produced. In this study, natural yeast from fresh fruit (papaya, banana) and dried fruit (dates, raisins) in the form of A-dough was applied in the making of sweet bread. Characteristics of sweet bread include the volume of initial and final dough development, time of dough development, volume of bread development after baking and organoleptic properties have been evaluated. The results showed that the initial and final dough development of sweet bread did not differ both in natural yeast from fresh fruit (banana, papaya) and dried fruit (raisins, dates). Sweet bread with raisin liquid yeast required shorter dough development (4,5 hours) compared to the other three types of liquid yeasts. The result of sweet bread after baking showed a different volume of development, with the greatest value in raisin liquid yeast. The organoleptic properties of sweet bread include tenderness, pores, crust, cross-sectional color, aroma, taste and overall preference showed differences in the four natural liquid yeasts. Sweet bread from natural liquid yeast, dried fruit (raisins) produced sweet bread with the best organoleptic criteria compared to the other three types of natural yeast, especially in tenderness, pores, taste and overall sweet bread preference**. Keywords: Fresh and Dried Fruits; Fermentation, Liquid Yeast; Organoleptic Properties; Sweet Bread
Product-12	**Effects of Functional Bread Vla Dadih to Pregnant Women on Newborn Length to Prevent Stunting** Helmizar[1,] Indri Juliyarsi[2,] Rince Alfia Fadri[3,] Frima Elda[4,] Yusrawati[5] [1]Department of Nutrition, Faculty of Public Health, Andalas University, Indonesia [2]Department of Animal Husbandry, Andalas University, Padang, Indonesia [3]Department of Food Technology, Agricultural State Polytechnic of Payakumbuh [4]Department of Nutrition, Faculty of Public Health, Andalas University, Indonesia [5]Department of Midwifery, Faculty of Medicine, Andalas University, Indonesia **Abstract: Lack of food intake in pregnant women will have an impact on the growth and development of newborns. Babies with low body weight and body length less than 42 cm are at risk for stunting. This study aims to determine the benefits of functional bread vla Dadih as a product that contains nutritional components to support the body length of newborns. This research was a quasi-experimental study consisting of 88 pregnant women who were divided into intervention and control groups. The sample selection used a randomized controlled trial (RCT) design with a gestational age of 12-20 weeks. This research began with biochemical nutritional analysis and product testing at the Food Technology Laboratory, Andalas University. The analysis used differences in the length of newborns and the effect of intervention**

	using the indepent sample T test. The results showed that the best formulation was 10% composite flour substitution (F1) and 10% Dadih addition (F1). The difference in the mean length of newborns in the intervention group (48.70 Â± 1.45) cm and the control (47.84 Â± 1.32) cm was statistically significant No data [ID= 522]
Product-23	**SENSORY PREFERENCE, NUTRIENTS CONTENT OF VLA DADIH, AND LACTIC ACID BACTERIA ASSESSMENTS OF DADIH** Helmizar[1,] Iza Ayu Saufani[2,] Indri Juliyarsi[3] [1] Department of Nutrition, Faculty of Public Health, Andalas University, West Sumatera, Indonesia [2] Department of Nutrition, Mohammad Natsir Bukittinggi University, West Sumatera, Indonesia [3] Faculty of Animal Science, Andalas University, West Sumatera, Indonesia Email saufani@yahoo.com **Abstract: Dadih is a fermented buffalo milk with various lactic acid bacteria (LAB). Dadih could be developed into other products such as vla. This study aimed to identify the LAB produced by dadih and analyze sensory preference, and nutrients content of vla dadih. Dadih collected from Agam District, West Sumatera then LAB isolate identified by 16S rRNA gene. Vla dadih was made from dadih varied at 10%, 20%, and 30% concentrations. The best sensory preference analyzed nutrients content by proximate test. The results showed that dadih containing Lacticaseibacillus paracasei. The addition of 10% dadih resulted in vla dadih with acceptable texture and sensory characteristics which had yellowish white of color, taste and aroma was slightly acidic. The selected vla dadih contained 223.83 kkal/100g of calories. Besides, the nutrients content was 3.74% for protein, 8.75% for total fat, 0.73% for ash, 32.53% for carbohydrate, and 54.25% for moisture content. So, dadih is a potential functional material for new product development.** Keywords: Dadih, Lactic acid bacteria, Nutrients content, Sensory, Vla
Product-24	**THE EFFECT OF ROBUSTA COFFEE (Coffea canephora) LEAF EXTRACT ON TESTICULAR HISTOLOGY OF MICE EXPOSED TO CIGARETTE SMOKE** NGAM Ermayanti[1]a, AASA Sukmaningsih[1,] NMR Suarni[1,] and IGAM Widhyastini[2] [1]Biology Department, Faculty of Mathematics and Natural Sciences, Udayana University Bali, 80361 Indonesia [2]Biology Department, Faculty of Mathematics and Natural Sciences, Nusa Bangsa University Bogor, 16166 Indonesia a)Corresponding author: manikermayanti@unud.ac.id **Abstract: Cigarette smoke is a source of free radicals that can trigger health problems, including disorders of the reproductive organs, namely impaired testicular function. Free radicals formed from cigarette smoke can be minimized by giving antioxidants and one of them is by giving robusta coffee leaves. A study has been carried out which aims to determine the effect of giving robusta coffee leaf extract on testicular histology of mice exposed to cigarette smoke. The experimental design used was a completely randomized design (CRD) with five treatment groups and each consisted of 6 male mice. K- (without being exposed to cigarette smoke), K+ (exposed to cigarette smoke and given Na-CMC 0.5%), R1 (exposed to cigarette smoke and given robusta coffee leaf extract 60 mg/kgbw), R2 (exposed to cigarette smoke and given robusta coffee leaf extract 120 mg/kgbw), R3 (exposed to cigarette smoke and given robusta coffee leaf extract 180 mg/kgbw). Exposure to cigarette smoke was given one stick a day and then given oral robusta coffee leaf extract once a day for 35 days. At the end of the study, the mice were sacrificed and then histological testicular preparations were prepared using the paraffin method. The parameters observed were the height of the germinal epithelium and the diameter of the seminiferous tubules of the mice testes. The results showed that the control and treatment of robusta coffee leaf extract in mice exposed to cigarette smoke had a significant effect.** No data [ID= 213]
Product-25	**Cream Cheese Characteristic with Various Carrageenan Concentrations as Stabilizer** **Kesuma Sayuti[1,2,] Tuty Anggraini[1] and Jihan Fadhila[1]** [1]Food and Agricultural Product Technology, Faculty of Agricultural Technology, Universitas Andalas, Kampus Limau Manis-Padang, Indonesia 251632 Corresponding authorâ€™s e-mail: kesuma@ae.unand.ac.id **Abstract: This study aimed to determine the effect of carrageenan concentration difference on the characteristics of the physicochemical and organoleptic of cream cheese. The experimental design was completely randomized (CRD) with 5 treatments and 3 replications. The data were analyzed statistically by ANOVA, followed by Duncanâ€™s New Multiple Range Test (DNMRT) with a significance of 5%. The treatment in this study was adding carrageenan 0%, 0.3%, 0.4%, 0.5%, and 0.6%. The result showed that adding carrageenan affects water content, water activity, ash content, fat content, viscosity, and texture. But had no significant effect on pH, aroma, and taste. The best treatment was cream cheese with**

	the addition of 0.4% carrageenan with a water content of 55%, water activity of 0.867, ash content of 0.6%, fat content of 18.07%, viscosity of 627.83 cPs, pH 5.5 and organoleptic acceptance with a value of aroma 4.4; taste 4.3; and texture 4.6.
Product-26	**QUALITY PROFILE OF CANNED AYAM RARANG AT VARIOUS STERILIZATION DURATION** Baiq Rien Handayani [1*], Mutia Devi Ariyana [1], Afrisha Sekar Namira [1], Asep Nurhikmat [2], Setyaning Pawestri [1], Adi Herwahyudi [3], and Pavalee Chompoorat Tridtitanakiat [4] [1)]Faculty of Food Technology and Agroindustry, University of Mataram, West Nusa Tenggara, Indonesia [2)]Research Center for Food Technology and Processing â€“ National Research and Innovation Agency DI Yogyakarta, Indonesia [3)]PT Yola Pribumi- East Lombok, West Nusa Tenggara, Indonesia [4]Faculty of Agroindustry, Chiang Mai University. Thailand *Corresponding authotr: baiqrienhs@unram.ac.id **Abstract: Ayam rarang is one of the legendary cuisines of West Nusa Tenggara, which has a short shelf life at room temperature. Hence, it needs sterilization treatment to extend its shelf life while maintaining its quality. This study aimed to determine the quality profile of ayam rarang treated with different lengths of sterilization. This study used an experimental method with a single-factor randomized block design (RBD), namely 3, 6, 9, 12, 15, and 18 minutes of sterilization time. The quality observed was protein content, pH, TBA level, and hardness/texture level (physically). Observational data were analyzed by analysis of variance with a significant level of 5% using the Co-stat application. Significantly different data were tested further with the Honest Significant Difference (HSD) test. The results showed that the duration of sterilization had a significantly different effect on protein content, pH value, and texture but did not affect the rancid value of ayam rarang. Sterilization of ayam rarang for 12 minutes fulfilled the F0 value and was not significantly different from the quality of chicken without sterilization on protein content, pH, rancidity, and level of hardness/textural value.** Keywords: canned chicken, cuisine, quality profile, sterilization, Lombok
Product-27	**IMPLICATIONS OF GREEN PRODUCTS IN THE PALM OIL PROCESSING INDUSTRY IN WEST SUMATRA** Candrianto, Radna Ningsih,[2], Desniorita[3] [1,2)] Program Studi Manajemen Logistik Industri Agro, Politeknik ATI Padang [3)] Program StudiTeknologi Rekayasa Bioproses Energi Terbarukan, Politeknik ATI Padang Corresponding author: candriantokemenperin@gmail.com **Abstract: Palm oil is a plantation commodity that has high value and the industry is classified as labor intensive and is an important and strategic commodity. In addition to providing great benefits, this industry also experiences problems in controlling its production waste. So it needs to be handled with the principle of sustainability. The government's role is expected to be able to overcome this by issuing regulations that support increased productivity in order to ensure sustainable palm oil production without any negative effects that arise in the socio-cultural and environmental spheres. With ISPO certification from the government, it will encourage palm oil entrepreneurs to create green products. Thus the purpose of this research is to find out how the implementation of green products in the palm oil industry in West Sumatra is driven by environmental knowledge, intentions and behavior of environmentally friendly entrepreneurs. As many as 112 managers of the palm oil industry in West Sumatra were the respondents in this study. The data were analyzed using structural equation modeling. The results showed that environmental knowledge, intentions and behavior of environmentally friendly entrepreneurs play an important role in creating environmentally friendly palm oil products. These findings help palm oil industry managers in West Sumatra in protecting the environment.** Keywords: Environmental knowledge; the intention and behavior of environmentally friendly
Product-28	**Chemical Analysis and Antibacterial Study of Pineapple Waste Extracts in Multipurpose Cleaning Product Formulations: A Circular Economy Approach** Siti Hanisha Sophia Binti Samat Haron[1], Nurul Azila Abdul Razak[1], Nurzawani Md Sofwan[2], Nur Diana Binti Wakimin[3], Bohari M Yamin[4], Nor Wahida Awang[1] [1]Faculty of Applied Sciences, Universiti Teknologi MARA (UiTM) Sarawak Branch, Samarahan 2 Campus, 94300 Kota Samarahan, Sarawak, Malaysia [2]Faculty of Health Sciences, Universiti Teknologi MARA (UiTM) Sarawak Branch, Samarahan Campus, 94300

	Kota Samarahan, Sarawak, Malaysia [3]Faculty of Chemical Engineering, Universiti Teknologi MARA(UiTM) Shah Alam, 40450 Shah Alam, Selangor, Malaysia [4]Department of Chemical Sciences, Faculty of Science and Technology, Universiti Kebangsaan Malaysia (UKM), 43600 Bangi, Selangor, Malaysia Corresponding authorâ€™s email: norwahida@uitm.edu.myÂ **Abstract: The circular economy approach exemplified by the valorization of pineapple waste in cleaning products utilizing bioactive enzymes could replace conventional cleaning products containing harmful chemicals that are hazardous to human health and the environment. Therefore, safer household cleaners with organic biocides are suitable alternatives to eliminate germs and disinfect surfaces. Nonetheless, there is limited molecular-level scientific evidence on the compounds from the crude extract of pineapple waste. The objectives of this paper are, (1) chemically extract crude pineapple waste enzyme from parts of pineapple waste, (2) conduct antibacterial screening against 4 types of bacteria, and (3) develop the formulation of the pineapple waste-derived cleaning product. The extract was then analyzed using Fourier Transform Infrared spectroscopy (FTIR), High-Performance Liquid Chromatography (HPLC), Gas Chromatography-Mass Spectroscopy (GC-MS), and Nuclear Magnetic Resonance (NMR) spectroscopic techniques. The results indicated that the stem and peel extracts produced the highest inhibition zones with excellent antibacterial activity against Vibrio parahaemolyticus at 37 Â°C, with 9.0 mm and 6.0 mm radius, respectively, and total inhibition at 30 Â°C, when compared to the positive control, streptomycin. The enzyme was subsequently incorporated into the multipurpose cleaning formulation. Numerous tests indicated that Formula 10 is the most stable and effective formula on all surfaces. The data presented here is anticipated to facilitate the development of environmentally friendly, economically viable cleaning products derived from pineapple waste, thus offering a promising future for large-scale commercial production of natural-based cleaners.** Keywords: detergent formulation, biological studies, chemical analysis, computational chemistry, pineapple waste.
Product-29	**Effects of thermal physical starch modifications on physicochemical and functional properties of purple, orange, and white sweet potatoes flour** N Arpi, S Noviasari, and M K Fadhli Agricultural Product Technology Department, Faculty of Agriculture, Universitas Syiah Kuala, Jalan Tgk. Hasan Krueng Kalee 3, Kopelma Darussalam-Banda Aceh 23111, Indonesia *Email: normalina.arpi@unsyiah.ac.id **Abstract: Native starch has limited applicability due to inherent weaknesses. Starch modification needed to improve starch performance and application. This study aims to determine the properties of sweet potato flours as affected by three types of thermal starch modifications. Purple, orange, and white sweet potatoes (SP) were utilized, and starch thermal modifications were conducted using Heat Moisture Treatment (HMT), Annealing (ANN), and Preheating Treatment (PHT). The data obtained were analyzed statistically using Analysis of Variance. The results showed that Î²-carotene content was higher in the orange SP flour with ANN and PHT modifications, additionally orange SP flour also has high solubility. The PHT modification causing elevated gel consistency especially in the purple SP, and a trend of higher swelling power. The images of SEM show that starch granules destruction was immense in the PHT modification, followed by the ANN and then the HMT. The DSC thermogram show that the ANN modification had the lowest gelatinization temperatures, followed by PHT and HMT modifications. The study showed that the PHT thermal modification resulted in a good functional properties of SP flour particularly purple SP.** Keywords: sweet potato, physical modifications, heat moisture treatment, annealing, preheating treatment
Product-30	**The potential use of cocoa leaf from pruning waste for developing quality functional drink** Z Zainuri[1,] Y Rusnayanti[2] and S Saloko[1] [1]Faculty of Food Technology and Agroindustry, University of Mataram, Lombok, Indonesia [2]Alumni o Food Technology and Agroindustry, University of Mataram, Indonesia Corresponding author: zainuri.ftp@unram.ac.id **Abstract: Pruning is very important aspect in cocoa production. Utilizing the leaf waste from pruning process may contribute to added value and provide functional drink alternative. The aim of this research was to determine the optimal drying temperature and time on the quality characteristics of cocoa leaf green tea. This research was designed as Completely Randomized Block with 2 factors that were drying temperature (40oC, 50oC and 60oC) and drying time (40 minutes and 50 minutes). Quality characteristics were assessed including the moisture content, antioxidant activity, color, aroma and the taste of the cocoa leaf green tea. The results revealed that drying the leaf at 50Â°C for 40 minutes produced cocoa leaf green tea with high antioxidant activity, distinctive aroma and slightly bitter taste but remained acceptable for the panelists. Further research is needed for optimizing the process to produce better cocoa leaf green tea quality and improve the panelist preference level t.**

	Keywords: cocoa, drying, green tea, quality, temperature
Product-31	**THE EFFECT OF ADDITION OF CARRAGENAN AND CITRIC ACID ON THE STORAGE LIFE OF MORINGA LEAF JELLY DRINK (Moringa oleifera)** Satrijo Saloko, Siska Cicilia, Irena Dwi Mulyaningtias Faculty of Food Technology and Agroindustry, University of Mataram Corresponding Author : s_saloko@unram.ac.id **Abstract: Jelly drink is a functional drink in the form of a gel and is consumed as a hunger delay. The jelly drink is made from moringa leaf extract with the addition of carrageenan and citric acid and is stored for 12 days. The purpose of this study was to determine and examine the effect of adding carrageenan and citric acid on the shelf life of Moringa leaf jelly drinks. This study used a completely randomized design (CRD) with 2 factors, namely carrageenan concentrations (0.2%; 0.3% and 0.4%), and citric acid concentrations (0.1% and 0.2%). Each of the two factors was combined to obtain 6 treatment combinations namely P1K1, P1K2, P2K1, P2K2, P3K1 and P3K2. Each combination was repeated 3 times to obtain 18 experimental units. The parameters tested in this study were crude fiber content, total acid, antioxidant activity, mineral content, pH value, viscosity, turbidity, color, and organoleptic which included aroma, taste, texture and color. Observational data were analyzed for diversity with a significant level of 5% using the Co-Stat application. if there is a significant difference, a further test is carried out with the Honest Significant Difference (HSD). This research was conducted in two stages, the first stage was to determine the effect of adding carrageenan and citric acid on the quality of Moringa leaf jelly drink products, then to estimate the shelf life for the best treatment using the Accelerated Shelf Life Test (ASLT) Arrhenius model. The results showed that the interaction between the addition of carrageenan and citric acid had a significant effect on chemical quality (total acid, pH value and mineral content), physical quality (viscosity) but had no significant effect on chemical quality (crude fiber content, antioxidant activity), quality physical (color and turbidity), organoleptic quality (aroma, texture, taste and color). The main stages of research regarding chemical, physical and organoleptic quality showed that the results of the treatment with the addition of 0.4% carrageenan and 0.1% citric acid were of the best quality with a crude fiber content of 19.66%; total acid of 2.63%; pH 3.14; Ca 275.19 ppm; Zn 30.71 ppm; Fe 1.44 ppm; antioxidant activity 63.69%; Viscosity 17.73 cPs; ËšHue value 127.23 and turbidity 114.67 ntu. This treatment has organoleptic quality with a slightly sour taste, does not smell unpleasant, has an orange color, and has an easily aspirated or semi-solid texture. The jelly drinks were stored using hot filled PET bottles for 12 days at 10ËšC and 30ËšC. The results of the calculation of the Arrhenius model selected the pH value parameter as a critical parameter to determine the shelf life of the jelly drink. The results showed that the shelf life for the best treatment was 114 days at 10ËšC and 51 days at 30ËšC.** Keywords: Jelly Drink, Carrageenan, Citric Acid, Shelf Life, ASLT, Arrhenius
Product-32	**The Inclusion of Brown Algae Sargassum crassifollium in Diet on Broiler Performance** Maria Endo Mahata, Indah Fitri Sakinah Limbong, Dian Saputri, Roh Franco Tua Cibro Sepri, Zurmiati Faculty of Animal Science , Andalas University, Kampus Limau manis Padang Correspondence author: maria@ansci.unand.ac.id **Abstract: The brown algae Sargassum crassifolium contains nutrients, metabolizable energy,and active ingredients such as alginate, fucosantin and fucoidan which poultry need to achieve good health and performance. This brown seaweed potentially for increasing broilerâ€™s health and performance. Alginate, fucoidan and fucosantin are knonw for their anti bacteria,immunoglubulin-promoting and anti cancer effects, as well as for lowering cholesterol. In addition, fucosantin is described as an antioxidants, and anti-inflammatory agent. The aim of this experiment was to evaluate the effect of Sargassum crassifoliium in the diet on broilerâ€™ performance. The experiment was conducted in a Completely Randomized Design with four different levels (0,6,12 and 18 %) of Sargassum crassifolium brown algae in broilerâ€™diet, and each treatment was replicated five times. Measurements: feed intake,daily weight gain, feed conversion, body weight, abdominal fat pad percentage, carcas percentage with and without skin, physiological organs like hurt, pancreas, gizzard and small instestine. The result showed the brown seaweed affected feed consumption,daily weight gain, feed conversion, body weight, abdominal fat pad percentage, carcas percentage with and without skin significantly (P<0.05), while did not affect (P.>0.05) on fisiology organ (hurt, pancreas, gizzard and small intestine). The conclusion is that the brown algae Sargassum crassifollium can be used up to 12 % in the broiler diet and has a positive effect on the performance of broiler.**
Product-33	**Increasing the Competitiveness of Agroindustry Sago Products ThroughResource Optimization** **Septina Elida,, Azharuddin M Amin, Joko Sutrisno, Darsono** Doctoral Program of Agricultural Science, Faculty of Agriculture, Universitas Sebelas Maret (UNS), Surakart1a 57126, Central Java, Indonesia. Email: septinaelida62@gmail.com Departement of Agribusiness Faculty of Agriculture, Universitas Islam Riau (UIR). Pekanbaru, 28284, Indonesia. Email:azharuddin@agr.uir.ac.id Departement of Agribusines, Faculty of Agriculture, Universitas Sebelas Maret (UNS), Surakarta, 57126 Central

	Java Indonesia. Email: jokosutrisno@staff.uns.ac.id and darsono@staff.uns.ac.id **Abstract: Sago is an agricultural commodity that can be used as a raw material for the future support of the agroindustry in the Meranti Islands Regency. The research aims to optimize resource use to increase the sago agroindustry's competitiveness. Surveys were used as the research methodology. The census was chosen as a way to take 56 respondents for review. SEM-PLS and Diamond Porters used data analysis methodsâ€"factors condition: natural, human, scientific, capital, and infrastructure resources. Demand conditions include household or small industry demand, export demand, and demand between districts, provinces, and countries. Related and supporting industries include manufacturing, home, distribution of sago farmers, sago refineries ownership, and a sewage treatment industry. Firms, structure, strategy, and rivalry have competition between regions and countries and create labour. The government's role includes ease of licensing, research on sago, access to capital, and development. Chances include domestic political conditions and the use of social media. Competitiveness can be reflected in business profits. Factor conditions, demand conditions, related and supporting industries, firm structure, strategy and rivalry, the government role, and chances were determinants of increasing competitiveness of the agroindustry sago product with a coefficient of determination (R2) of 0.639. The factor conditions the most determinant in increasing competitiveness of the sago agroindustry. In the future, utilization conditions need to be optimized to increase the competitiveness of the sago agroindustry as well as it can improve the welfare of the community.** Keywordsâ€" Competitiveness, Agroindustry, sago, Natural resources, Human resources
Product-34	**Value Added Analysis and Development Strategy of Canned Traditional Food Sayur Lilin (Saccharum edule)** Hamidin Rasulu[1], Angela Wulansarisup[1]sup, Abdul Kadir Kamaluddinsup[1]sup, Ikrima M Mustafasup[2]sup, Juharnisup[3]sup, Janiah Husensup[4] [1]Faculty of Agriculture, Khairun University, Ternate, Indonesia [2]Faculty of Economy and Business, Khairun University, Ternate, Indonesia [3]Faculty of Fisheries and Marine, Khairun University, Ternate, Indonesia [4]Master Student of Agricultural Science, Khairun University, Ternate, Indonesia *Corresponding author: angela.wulansari223@gmail.com **Abstract: Sayur lilin is a traditional food made from sugarcane flower (Saccharum edule) and coconut soup. The development of canned sayur lilin was aimed for extending itâ€™s shelf life, increasing itâ€™s economic value, and expanding itâ€™s market. This study was purposed to analyze the value added and determine the development strategy of canned sayur lilin business. Analysis methods used in this study were consisted of value added analysis by Hayami, internal factor evaluation (IFE) matrix, external factor evaluation (EFE) matrix, internal-external (IE) matrix, and SWOT analysis. The result of value added analysis showed value added ratio of canned sayur lilin was 70,57%. The score of IFE matrix was 2,925 (average) and the score of EFE matrix was 3,000 (high). The combination of IFE and EFE in IE matrix showed canned sayur lilin was in quadrant II. Quadrant II is described as grow and build. The suitable development strategy for canned sayur lilin business is market penetration and development, also product development. Based on added value and SWOT analysis, canned sayur lilin is potential to be developed. Strategies that can be applied are recipe modification, product socialization, cooperation with local government and related parties, and also social media promotion.** Key words: sayur lilin, canned traditional food, added value analysis, IFE matrix, EFE matrix
Product-35	**Agritainment: Development of Agricultural Activities towards Tourism** E Rusdiyana[1,] M L Arwindianti[1,] T Kurnianingsih[1,] Sugihardjo[1,] E Lestari[1,] R Setyowati[1,] Widiyanto[1,] N Wijayanto[2] [1]Agricultural Extension and Communication Study Program, Faculty of Agriculture, Universitas Sebelas Maret, Jl.Ir. Sutami No. 36.A, Kentingan, Jebres, Surakarta, 57126, Indonesia [2)] Travel business study program, Vocational School, Universitas Sebelas Maret, Jl.Ir. Sutami No. 36.A, Kentingan, Jebres, Surakarta, 57126, Indonesia Email eksarusdiyana@staff.uns.ac.id **Abstract: The potential for agricultural businesses in the fields of plantations, fisheries, animal husbandry, and forestry widely supports the development of agriculture in the agrotourism sector. So far, the agrotourism sector is still limited to picking fruits/vegetables, enjoying culinary, and educating how farmers work. Agrotourism has yet to be developed much towards performing arts inspired by agricultural activities. This study aims to formulate a model for developing agricultural activities that can be elevated to the performing arts (agritainment). This study used a qualitative approach; data were collected through interviews, observations, and focus group discussions (FGD). Research informants include farmers, artists, academics, tourism officials, and actors. The validity of the data is determined using source triangulation and method triangulation. This research takes a case study in Karanganyar Regency. The results showed that agricultural activities that can be developed into agritainment meet the requirements for activities that can be developed towards**

	attractions, amenities (availability of tourism supporting facilities), and the exact value and distinctiveness of the activities raised. Keywords: agritainment, attractions, tours, agriculture.
Product-36	**Mucor sp. (Fungal Philospheric) of Gambir Leaf Surface (Uncaria) as a Biosynthetic Mg-doped ZnO Nanorods Media for Antibacterial Applications** Yetria Rildaa, Eka Satria Putra [a], Syukri Ariefa, Syukria, Anthoni Agustien[ba)]Department of Chemistry, Faculty of Mathematics and Natural Sciences of Andalas University, Campus Unand Limau Manis Padang, 25163, Indonesia [b)]Department of Biology, Faculty of Mathematics and Natural Sciences of Andalas University, Campus Unand Limau Manis Padang, 25163, Indonesia*Corresponding author: yetriarilda@sci.unand.ac.idAbstract **Abstract: The antibacterial activity of ZnO-NRs compounds has been tested for its ability to inhibit the cells of pathogenic bacteria such as Staphylococcus aureus and Salmonella sp. Therefore, this study aims to increase the antibacterial activity through the modification of ZnO morphology with doped Mg2+ ions under sol-gel-hydrothermal synthesis conditions at pH 10-12. The mechanism of biosynthetic reactions was followed using enzymatic grooves of the cell phyllosphere isolate of gambir leaves (Uncaria) as a reducing compound and capping agent. The XRD analysis showed ZnO and Mg-doped ZnO products were wurtzite structures based on intensities 2Î¸ = 31.78Â°, 34.43Â°, 36.27Â°, hkl (100), (002), (101), consisting of hexagonal geometry (ICSD standard -157724). Mg-doped ZnO has the same intensity as the control and no impurity intensity is obtained. SEM-EDX analysis gives nanospheric morphological patterns, while nanorods have a more dominant size distribution in the 125-175 nm range. FT-IR analysis at wave numbers 401-584 cmâ^'1 is a Zn-O stretch. Furthermore, UV-DRS analysis indicated optical properties based on the uptake on blue-shift regions with Î»max â‰¤ 400 nm and had a change in the bandgap (Eg) value, namely ZnO: 3.37 eV after conversion on Tuoc-Plot. The greater the concentration of Mg+2 ions, the smaller the bandgap value of 3.13, eV, 3.10, eV, 3.11eV, and 3.12 eV. Based on the antibacterial activity against bacteria Gram (+) S. aureus and Gram (-) Salmonella sp., the largest inhibitory zone is in Gram (-) bacteria at 24 mm.** Keywords: Philospheric, Uncaria gambir, Biosynthesis Mg-doped ZnO, Nanorods, Anti- bacterial
Product-37	**DEVELOPMENT OF GUMMY WITH MIRACLE FRUIT POWDER AS ITS SWEETENER AND ITS PHYSICOCHEMICAL PROPERTIES** Siti Suhara R and Tengku Ezzah, T A Universiti Teknologi MARA **Abstract: The miracle fruit has gained popularity in the food industry as a natural sweetener because of its ability to modify the taste of sour food products. This fruit has a special property where consuming it before sour foods will cause them to taste sweet, due to the presence of glycoproteins called miraculin, which are responsible for the sweet taste of the fruit. Sugar has been widely incorporated in the production of various products to meet consumer demands. It serves as a preservative, flavor enhancer, and texture modifier in food products. Despite its importance, the consumption of sweeteners such as sucrose and glucose can have negative effects on consumer health, as they can lead to a high calorie intake in products like gummy candies. The aim of this study is to replace the sweeteners in gummy candies with natural alternatives that will reduce the amount of sugar consumed in them. One such alternative is the use of miracle fruit powder as a natural sweetener and food colorant in gummy candies. This will result in the production of gummy candies made with natural ingredients that align with the current trend in the food industry. The formulation of the gummy candies will involve using varying ratios of miracle fruit powder to replace some of the sugar content. The gummy candies will undergo several analyses, including their water activity, color analysis using a colorimeter, texture profile analysis (TPA) to measure their chewiness, springiness, firmness, and hardness. Additionally, the glass transition temperature of the gummy candies will be determined using the Differential Scanning Calorimeter (DSC) to ensure candies have good thermal stability, the protein content can be protected and the candies can maintain their texture and taste during processing and storage. Sensory evaluation of the gummy candies will be conducted at the final stage of the study to determine their overall acceptability among consumers. A 9-point hedonic scale will be used for this purpose. The main goal of this study is to develop gummy candies that can reduce the sugar intake of consumers and provide them with an alternative to traditional gummy candies.**
Product-39	**Characterization of Lactic Acid Bacteria Producing Bacteriocin from Smoked Giant Catfish (Arius Thalassinus)** Tita Rialitaa, Sumanty Debby Moodya, Edy Subrotoa, Heditia Febby Susantoa aDepartment of Food Industrial Technology, Padjadjaran University, Jl.Ir. Sukarno km.21 Jatinangor-Sumedang 45363, West-Java, Indonesia Corresponding author: tita.rialita@unpad.ac.id

	Abstract: Bacteriocin is a ribosomally synthesized peptide that functions to inhibit the growth of pathogenic bacteria so that it can be used as a bio-preservative. Many bacteriocins are produced by lactic acid bacteria. Some types of smoked fish found lactic acid bacteria that can produce bacteriocin. This study aims to obtain lactic acid bacteria isolated from smoked fish-type giant catfishÂ (Arius Thalassiuns)Â that have high antimicrobial activity and test their stability against temperature, pH, and the presence of surfactants. The research used the experimental method that was analyzed descriptively. Bacteria isolated from fish meat located on the head, body, and tail with agar media enrichment method MRS + CaCO3. Colonies were identified based on morphological and physiological characters and antibacterial tests using the good method with MHA media. Based on the study result, 15 isolates of lactic acid bacteria from smoked giant catfish, were marked by negative catalase test results, the colonies round and milky white, and Gram-positive bacteria. Three selected isolates showed strong antimicrobial activity inhibitingÂ Escherichia coliÂ andÂ Staphylococcus aureus,Â and the most effective inhibiting toÂ Salmonella sp. The observation of morphological, physiological, and biochemical characteristics of these isolates can be categorized into theÂ Lactobacillus plantarum. Bacteriocin-like from three isolates of LAB had characteristics stable to temperatures up to 121oC, stable in the pH range 2-6, and bacteriocin activity increased with the addition of SDS (Sodium Dodecyl Sulfate) and EDTA (Ethylenediaminetetraacetic acid) surfactants. The results showed that the three isolates ofÂ L.plantarumÂ bacteria had the potential to produce bacteriocins that could be developed as natural preservatives for food products. Keywordsâ€" bacteriocin, lactic acid bacteria, smoked giant catfish
Product-30	**ASSESSMENT MODEL FOR HALAL PRODUCT: AN APPROACH TO HALAL PERFORMANCE** Dini Wahyuni[1], Sukaria Sinulingga[2], Nazaruddin[2], Juliza Hidayati[2], Irwan Budiman[3] [1] Engineering Department, Universitas Sumatera Utara, Indonesia, [2] Industrial Engineering Department, Universitas Sumatera Utara, Indonesia, sukariasinulingga45@gmail.com [3] Industrial Engineering Department, Universitas Prima Indonesia, Indonesia, irwanb01@gmail.com Email dini@usu.ac.id **Abstract: Halal food is a requirement of Islamic law. As the number of the world's Muslim population increases, the demand for halal food availability is also getting higher. A halal certificate is proof of the halal status of a product issued by an authorized institution. There are a number of criteria that must be fulfilled in order for a company to be entitled to a halal certificate. Field audits are one way to assess a company's readiness for halal certification. The measuring instrument that is used is subjective because it only gives a checkmark in the assessment column. In this study, a quantitative model was developed using a 3-Likert scale. Model development is carried out through a document review of conventional assessment methods, developing models with a quantitative perspective, observing and collecting data on SMEs (Small and Medium-sized Enterprises), testing models, and analyzing the strengths and weaknesses of the model. Model testing on several SMEs and model comparisons conducted by respondents show that the developed quantitative models tend to be easier to understand (72,22%), easier to use (55,56%), more objective (72,22%), more consistent (77,78%), and more representative (77,78%). This research contributes to developing a quantitative assessment model that can overcome the subjectivity found in the previous model.** Keywords: Assessment Model, Quantitative Model, Halal Assurance System, Certification, Halal Food
Product-40	**Eggshell as an adsorbent for removingÂ metallic ions (Pb) and (Fe) in aqueous solutions** **Eka SriYusmartinicorespondingauthour , Atikah, Mardwita, Suli** Fakultas Teknik, Program Studi Teknik Kimia, Universitas Muhammadiyah Palembang **Abstract: Cangkang telur merupakan bagian terluar dari telur yang berfungsi memberikan perlindungan bagi komponen-komponen isi telur dari kerusakan secara fisik, kimia maupun mikrobiologis. Setiap cangkang telur memiliki 10.000-20.000 pori-pori sehingga diperkirakan dapat menyerap suatu solute dan dapat digunakan sebagai adsorben. Penelitian ini bertujuan untuk mengaktivasi cangkang telur yang akan digunakan sebagai adsorben. Aplikasi dari cangkang telur sebagai adsorben dilakukan terhadap larutan Timbal (Pb) dan Besi (Fe). Metode penelitian ini terdiri dari 3 tahap yaitu persiapan adsorben, aktivasi adsorben, dan proses adsorpsi. Proses adsorpsi dilakukan dengan variasi massa 0,75 gram, 1 gram, 1,25 gram, 1,50 gram, 2 gram serta variasi waktu kontak 20,30,40,50,60 menit. Hasil penelitian menunjukan kapasitas adsorpsi tertinggi pada massa optimum logam Pb adalah 1,5gram sebesar 98,914%, dan logam Fe sebesar 96,386%. Hasil kapasitas adsorpsi tertinggi pada pengaruh waktu kontak logam Pb yaitu pada waktu kontak 40 menit sebesar 99,30%, dan kapasitas terbaik yang terdapat dalam adsorbsi logam Fe yaitu pada waktu kontak 50 menit sebesar 99,82%.**
Product-41	**Efficacy of Marasmius sp in the Production of Laccase with a Submerged Fermentation System in the Addition of Substrate from Rice Straw and Corncobs** **Tri Yuliana[1], Agra Maharddhika[1], Tita Rialita[1], Ratu Safitri[2]** [1] Faculty of Agro-Industrial Technology, Universitas Padjadjaran, Bandung, Indonesia [2] Mathematics and Natural Science, Universitas Padjadjaran, Bandung, Indonesia

	Corresponding Author: t.yuliana@unpad.ac.id **Abstract: Marasmius sp. is a lignin-degrading basidiomycetes fungus that grows on wood media or with high concentrations of lignin such as corn cobs and rice straw. Lignin degradation involves the activity of lignolytic enzymes produced by white rot fungi, one of which is the laccase enzyme. Laccase enzymes can be applied to the bakery, wine industry, wastewater detoxification, and waste color removal. This study aimed to obtain the activity of the laccase enzyme produced by the fungus Marasmius sp. using media with the addition of rice straw and corn cobs substrate in a submerged fermentation system. The method used is an experimental method followed by descriptive analysis. The results of a qualitative test on Potato Dextrose Agar (PDA) media produced brownish red, which showed that Marasmius sp. could produce laccase enzyme. The highest enzyme activity with a liquid fermentation process using the media Potato Dextrose Broth (PDB) was achieved by the treatment of adding rice straw and corncobs with the best activity reaching 68.38 (U/mL) and Optical Density (OD) value 0.09. The results of pH measurements showed that the laccase enzyme from Marasmius sp. worked optimally at pH 5 achieved on the 5th day of incubation.** Keywords: Laccase, Lignin Degradation, Marasmius sp. Enzyme Activity
Product-42	**PHYSICAL CHARACTERISTICS OF INSTANT NOODLE WITH VARIATION OF AMOUNT OF MULU BEBE BANANA FLOUR AND EGG** Erna Rusliana Muhamad Saleh[1,] Yusnaeni[2] and Syamsul Bahri[1] [1]Department of Agricultural Product Technology, Universitas Khairun [2]Department of Animal Husbandry, Universitas Khairun Corresponding author email: ernaunkhair@gmail.com **Abstract: Pisang mulu bebe is a typical banana of North Maluku. Utilization of mulu bebe banana flour in instant noodles has not been carried out. This research attempts to utilize mulu bebe banana flour as a substitute for wheat flour in making instant noodles. The purpose of this study was to determine the physical characteristics of instant noodles with variations in the amount of mulu bebe banana flour and eggs. The experimental design used was a Completely Randomized Factorial Design (RALF) with two factors, namely variations in the ratio of banana flour to wheat flour (0:100%; 25%:75%; and 50%:50%) and the number of eggs added (15% and 22.5%). Each treatment was repeated three times, so there were 18 experimental units. Parameters observed were texture, color (L, a*, b*), cooking time, and absorption. The results showed that instant noodles with varying amounts of mulu bebe banana flour and eggs had texture (1.01-2.89 N/m), color L (23.67â€“57.03), color a* (-1.88â€“3.55), color b* (19.83â€“30.67), cooking time (2 minutes 42 secondsâ€“4 minutes 59 seconds), and water absorption (103.33%â€“150%).** Keywords: physical characteristics, instant noodle, mulu bebe banana flour
Product-43	**Catfish Waste (*Pangasius sp*.) Fermentation by Probiotics** for Essential Amino Acid and Fatty Acid Production **Ratu Safitri[12], Eri Sulistiati [2,] Abun[3] and Tri Yuliana[4] Yuli Andriani[5]** [1]Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, Jl. Raya Bandung Sumedang Km. 21, Jatinangor, 45363, Indonesia [2]Program Study Of Biotechnology, Post Graduate School Universitas Padjadjaran, Jl. Dipati Ukur, Bandung, Indonesia [3]Faculty of Animal Husbandry, Universitas Padjadjaran Km. 21, Jatinangor, 45363, Indonesia [4]Faculty of Agro-Industrial Technology, Universitas Padjadjaran, Bandung, Indonesia [5] Department of Fisheries, Faculty of Fishery and Marine Science, Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363, West Java, Indonesia ABSTRACT. Catfish *(Pangasius sp.)* Waste is very potential as a medium for producing amino acids and essential fatty acids because of its high nutritional. The catfish waste comprises the head, bones, tailbone, skin, belly flap, trimmings, and fish stomach. Catfish waste contains 22.96% carbohydrates, 35.81% protein, and 12.47% fat and can optimize as raw material for producing amino acids and essential fatty acids through solid-state fermentation using probiotics. This study aims to analyze the ability of probiotics of L. plantarum, L. curvatus, and B. subtilis to produce amino acids and essential fatty acids through solid-state fermentation (SSF) in catfish waste. The research method experimentally uses an entirely randomized design (RBD) and measured amino and fatty acid levels in optimal fermentation conditions. The result shows The highest increase in amino acid levels in catfish waste fermentation for 84 hours by L. curvatus was valine 2.43%; L-leucine 4.96%; L-phenylalanine 3.60%; L-arginine 5.89%; L-threonine 3.95%; and L-histidine 2.43% with an increase in the number of essential amino acids by 27.68%. The highest rise in L-lysine levels in fish waste fermentation by B. subtilis was 3.73%. The most significant increase in fatty acid levels in catfish waste fermentation by L. plantarum ATCC 8014 was 0.2% oleic acid, omega-6 15.03%, and omega-3 30.88%. The fermentation of catfish waste by L. curvatus increased omega-3 by 5.94%. The fermentation of catfish waste by B. subtilis increased omega-6 by 4.22% and omega-3 by 7.98%. The L. plantarum ATTC 8014 consortium could not increase fatty acid levels in catfish waste fermentation.

	Keywords: Catfish Waste, Probiotics, Solid State Fermentation, Amino Acids, Fatty Acids.

Agriculture

Agriculture-1	**KUB DOC's Growth Rate and Mortality Level Given Commercial Feed** **Heri Dwi Putranto[1], Bieng Brata[1], Zodi Setiawan[1], Yossie Yumiati[2]** [1]Dept of Animal Science, Fac.of Agriculture, University of Bengkulu, Jalan W.R. Supratman Kandang Limun, Bengkulu 38371, Indonesia [2]Dept of Agribusiness, Fac. of Agriculture, Dehasen University, Jalan Raya Meranti, Sawah Lebar, Bengkulu 38227, Indonesia Email heri_dp@unib.ac.id **Abstract: KUB chicken was selected for 6 generations from various types of native chickens originating from Cianjur, Depok, Majalengka and Bogor and it produced by Balitbangtan. KUB chickens can be used as laying hens or broilers. This chicken is never been reared in University of Bengkulu before. Especially, no commercial feed have been normally used for local chicken feeding management regarding economic reason. The purpose of study was to analize the performance of feed consumption, body weight, FCR and mortality rate of mixed-sex KUB DOC during 28 days of an intensive rearing phase. Research was conducted during September to October 2021 at the Commercial Zone of Animal Laboratory (CZAL) Department of Animal Science, Faculty of Agriculture, University of Bengkulu Indonesia. The were 100 KUB DOCs used in this study. Variables collected weekly, tabulated and calculated for average, standard deviation, and coefficient of variation. Results showed the average body weight was 7,351.25 Â± 2,893.37 g/chick, the average feed consumption was 190.16 g/chick/day, the average FCR was 2.45 and mortality rate was 0%. It can be concluded that mixed-sex KUB DOCâ€™s body weight was increased as similar to their increase feed consumption and resulted a zero mortality. However, feeding them by commercial feed seems less efficient based on their FCR â‰¥ 1.** Keywords: Commercial Feed, DOC, Growth Rate, KUB Chicken, Mortality Level
Agriculture-2	**The Determinants of Technical Efficiency of Farmers Soybean Production: Empirical Evidence From Tanjab Timur District Jambi Province** Edison[1] [1]Agribusiness Department, University of Jambi Corresponding author Email: ediedison950@yahoo.co.id **Abstract: The various levels of production will reflect the existence of uncertainty and risk factors in soybean farming. The main problem of soybean crop is that the productivity level is still low. The factor causing low productivity is due to the limited ability of farmers to allocate inputs in the form of seeds, fertilizers, and appropriate pesticide in peat land. This study aims to estimate technical efficiency and its determinants in soybean production in Tanjab Timur District, Jambi Province, Indonesia. In this study, soybean data were used in the 2021 planting season. A sample of 120 soybean farmers was taken randomly by applying stratified random sampling that based on cross-sectional data collected in 2022. The Cobb-Douglas stochastic frontier production function, incorporating inefficiency effects was employed to analyze the data. The results showed that technical efficiency ranged from 60.62 to 91.27%, with an average of 72,8 %. Significant factors found to positively affect soybean yield were seed quantity, potash fertilizer, labor, and soybean variety while nitrogen fertilizer and pesticide were negatively related to soybean yield. Significant determinants of technical efficiency that were positively related to technical inefficiency include educational attainment, training, credit access, and household labor.** Keywords: Technical efficiency; soybean farming; determinants of technical efficiency; stochastic frontier production function.
Agriculture-3	**Expression of leukocyte and mercury level in acutely intoxicated milkfish with aquaria flushing technology with hibiscus extract** **L Kadir[1] and O R P A Nussa[2]** [1]Department of Public Health, Faculty of Sport and Health Science, Gorontalo State University, Jalan Jenderal Sudirman No, 6 Gorontalo 96128

	[2]Department of Veterinary Medicine, Universitas Wijaya Kusuma Surabaya, Indonesia
Email asi_1403@ung.ac.id **Abstract: The disease of acute intoxication of mercury (Hg) is also referred to as Minamata Disease or Minamata Syndrome. This particular disease is commonly found in humans or fish in the sea waters. The negative effects that occur in humans and animals that are acutely intoxicated by a particular amount of mercury are almost incurable if the treatments or therapy are implemented too late. Rosella is included among the medicinal plants in Indonesia that are very beneficial to health. The present work was aimed to identify the effect of the provision of Rosella flower (Hibiscus Sabdariffa Linn) extract with aquaria flushing method in the inflammatory process observed in the profile of blood leukocyte. This experimental study employed a post-test control group design and involved five treatment groups of milkfish. Results: As based on the two-ways ANOVA test conducted on the treatment variable, it was acquired that Fcount value of leukocyte was at 18.992 and p-value at 0.000 (p 0.01), while the R-squared value of leukocyte was at 240.877. The numbers indicate that, based on the variability of treatment on the milkfish and the observation day, the leukocyte level arrived at 240.8%. Meanwhile, the Post-Hoc test that employed the Duncan method showed a significant difference in leukocyte level between fish treated with Hibiscus extract and non-treatment fish in the P1 group (P = 1.000), with the mean value at 240.8.** No data [ID= 30]
Agriculture-4	**STUDY OF SEVERAL ECOLOGICAL ASPECTS IN THE LUBUK LARANGAN AREA ALONG THE BATANG BUNGO RIVER, BUNGO REGENCY, JAMBI PROVINCE, INDONESIA** [1,2]Rini Hertati, [2]Indra J Zakaria, [2]Dahelmi Dahelmi, [2]Wilson Novarino [1]Department of Fisheries Resources Utilization, Faculty of Fisheries, Muara Bungo University Jambi, Indonesia
[2]Faculty of Mathematics and Natural Sciences, Andalas University, Padang, West Sumatra, Indonesia. **Abstract: The decline in freshwater fish populations in the Batang Bungo River is thought to be caused by ecological factors, community activities and the use of fishing gear that are not environmentally friendly so that they have an impact on future sustainable capture fisheries. The research location was determined using purposive sampling with interview questionnaires as many as 40 fishing fishermen in the lubuk larangan area in the Batang Bungo River utilization zone. The research was conducted at three stations, station one upstream Dusun Laman Panjang, station two in Hamlet Rantau Pandan and station three in Dusun Tebat. The fish catch yielded 16 species, 5 orders, 5 families and 16 genera. Cypriniformes order 1 genus, order Labyrinthici 1 genus, order Perciformes 1 genus, order Siluriformes 1 genus and order Tetraodonntiformes 1 genus. The type of fish that is mostly caught is the Order Cypriniformes, namely Lampam fish (Barbonymus schwanenfeldii). Crate mining without permits and C excavation were found at station three, based on laboratory test results for mercury (Hg) of 0.092 ppm when compared to water quality standards Government Regulation No. 82 of 2001 shows that heavy metal pollution has occurred in the waters.** Keywords: Studies, aspects, ecology, lubuk larangan, Batang Bungo River.
Agriculture-5	**Identification of Genes Under Salinity Stress in Upland Rice Lines as a New Genetic Source for Coastal Breeding Programs** Reny Herawati[1,] Masdar[1,] Marulak Simarmata[1]
[1)]Department of Crop Production, Faculty of Agriculture, University of Bengkulu **Abstract: Utilization of marginal land, including coastal areas for rice cultivation is a breakthrough to boost national rice production. The potential of Indonesia's coastal land which is on a coastline of 106,000 km is estimated to be 1,060,000 ha. Molecular gene detection has been widely carried out and helps breeders to select genotypes that have salinity stress control genes before being released as new varieties. The experiment used a factorial Split Plot Design, where the main plot was the NaCl concentration of 0.150 mM, while the subplots were 16 lines and Salumpikit and IR20 were check tolerant and sensitive varieties respectively. Gene detection used specific primers, namely DREB2A, P5CS, and OsAPX1. Total DNA extraction will be carried out following the Wizard Genomic DNA Purification Kit protocol. The results showed that there was consistency in the salinity stress treatment with gene expression in the lines tested. Treatment with 150 nM NaCl was able to induce P5CS gene expression in all lines. These lines have the potential as a new genetic source for rice breeding programs for coastal lands.** Keywords: Salinity stress, genes, upland rice lines, local varieties
Agriculture-6	**EVALUATING THE POTENTIAL OF FERMENTED LEGUMINOUS PLANT LEAVES AS A FERTILIZER FOR RICE (Oryza sativa) PRODUCTION** **Roger Y Ibaez, Jr, Jacob Frederick P Velza, Cristito C Pelayo Jr**
Cawayan Campus, Dr. Emilio B. Espinosa Sr. Memorial State College of Agriculture and Technology, 5405,

	Philippines **Abstract: The results showed that the control group that received synthetic fertilizers had significantly (P>0.05) taller rice plants compared to the groups that received fermented leguminous leaves. However, among the fermented leguminous leaves, rice plants that received Madre de cacao showed the highest plant height, which could be attributed to its high phosphorus content. The study also found no significant differences (P** KEYWORDS: acacia, fermented leguminous leaves, ipil-ipil, madre de cacao, organic fertilizer, synthetic fertilizer
Agriculture-7	**The Genetic Profile of the Walik Kembang Sula (Ptilinopus melanosphila) Based on mtDNA COI** Sariffudin Fatmona, Abdurahman Hoda, Oktora Dwi Putranti, Gunawan Study Program of Animal Production, Agricultural Fakulty, Khairun University, Jl. Gambesi Ternate South, Maluku Nort, 97719 Email Author: Sariffudinunkhair2002@gmail.com. **Abstract: The Sula Fruit Dove (Ptilinopus magoliensis) is a bird species in the family Columbidae. The P. mangoliensis has been separated from the Banggai Fruit Dove (Ptilinopus subgularis) and has medium size 33-36 cm. The color of the fruit doveâ€™s feathers is dominated by green with relatively long tail. Currently in Sula, the population of the fruit dove is declining. This study aimed to determine the genetic profiles and behaviors of the Ptilinopus melanosphila and Ptilinopus magnificus (GenBank) based on the gene sequences of Cytochrome-c Oxidase Sub-unit 1. This study used a pair of forward and reverse primer to amplify the mtDNA CO1. The primer was designed using the online Primer designing tool from NCBI, based on the CO1 gene sequences of Ptilinopus magnificus. Sequens of Forward Primer were used are: 5- GCATAATTGGCACCGCACTC -3 and Reverse Primer: 5- GTATAGTACTGGGTCGCCTC -3â€™. To compare, gene sequences obtained from the GenBank with the access code KF446986.1 were used. After being observed, genetic analysis was edited and multiple alignment was done using the MEGA 7 application. Haplotype composition data, nucleotide similarity and difference, and nucleotide transition/transversion substitution were analysed using the MEGA 7 application, The alignment results show that the CO1 gene sequence samples have domains that are conserved with the sequences of comparison species of P. magneficus; the total mutase point 52, monomorphic sites: 566, polymorphic sites: 52. The genetic distances based on the phylogenetic tree were discovered in three clusters, namely two clusters of the Ptilinopus melanosphila and one cluster of Ptilinopus magnificus. The male feeding frequency (37.63%) with the behavioral average of 5.51 is lower than that of female (37.7%) with the behavioral average of 5.2. The types of feed preferred based on feeding: Papaya (4.08 g), banana (5.17 g), baby yellow corn (18.33 g), and peanut (36g).** Keyword: Genetic Profile, P mangoliensis, mtDNA CO1, Morphology, Behavior, Ex-Situ.
Agriculture-8	**SCREENING OF LOCAL VARIETIES OF RICE (Oryza Sativa L.). SOUTH SUMATRA USING PEG 6000 SOLUTION AND THE MOLECULAR MARKER METHOD (SSR)** Mery Hasmeda[1,] Fikri Adriansyah and Zendi Alhamami Faculty of Agriculture, Sriwijaya University Palembang Indonesia **Abstract: The aims of this study was to find local rice South Sumatra varieties that was resistant to drought stress using Polyethylene Glycol (PEG) and PCR-RAPD solutions. This research was conducted at the Agricultural Cultivation laboratory, Faculty of Agriculture, Sriwijaya University, North Indralaya District, Ogan Ilir Regency, South Sumatra. This study used 2 factors, the first factor is Aquades solution as control, PEG with a concentration of 10%, and PEG with a concentration of 20%. The second factor, namely PCR-RAPD, was used by combining PCR techniques with random sequens primers for the purpose of genome random locus amplication. The parameters being observed were sprout length, bud length, main root length, seminal root length, germination percentage, dry weight of shoots, dry weight of roots, vigor index and PCR-RAPD amplication results. The results of PEG research showed that solar rice, golden solar, tehas and short varieties were tolerant of drought stress. DNA amplification showed that DNA bands on each marker against solar rice, golden solar, tehas and short varieties were identical to comparison variety genes that are resistant to drought stress.** Keywords : Local Rice, PEG, PCR-RAPD, Molocular Marker
Agriculture-9	**Effect of Bio-wastes Combination on Mechanical Properties of Foam Concrete** No data [ID= 124] **Abstract: Experiments in foam concrete have explored various materials added to the mix proportion. As an agricultural country, Indonesia has much potential for bio waste to be incorporated in foam concrete for sustainable and eco-friendly building materials. Rice husk ash (RHA), eggshell powder (ESP) and coconut fiber (CF) are all natural wastes that are abundantly available. This experiment tried to incorporate those bio-wastes as materials to form a foam**

	concrete. This experiment partially substituted cement with RHA and ESP with a max of 15% and added 2% of CF. The result shows the workability and flow ability properties of the fresh concrete still conform to the standard. Substituting porous substances such as RHA and CF could decrease the dry density of hardened concrete by up to 27%. While the mechanical properties of foam concrete for compressive strength, splitting tensile strength and modulus of elasticity consequently foresee a decline for all parameters, the compressive strength is still comparable with previous research. And still it has enormous potential for use in thermal insulation and seismic purposes. Keyword: Bio-waste, foam concrete, rice husk ash, coconut fiber, eggshell
Agriculture-10	**STUDY ON THE PHYLOGENETIC OF SEVERAL MELON (Cucumis melo L.) GENOTYPES** Catur Herison, Hevia Purnama Sari, Marwanto and Rustikawati Faculty of Agriculture, University of Bengkulu, Jl. WR Supratman, Kandang Limun, Bengkulu 38120 **Abstract: The demand for a high-quality seeds tends to increase as melon become more popular for the famers. However, the domestic production of improved seed has not been able to meet these needs. One way to overcome this problem was by domestic breeding programs to develop new superior varieties obtained from selection on the transgressive segregants possessing characters better than that of the parents (heterobeltiosis). This study was to characterize and identify superior traits valuable in melon breeding programs, and determine prospective parents based on their genetic relationships among genotypes established by morphological and molecular traits. The experiment was a completely randomized design (CRD) single factor with three replications. The melon genotypes employed as the treatment in this study were â€˜Sisiliaâ€™, â€˜Eagleâ€™, â€˜Sweet Memoryâ€™, â€˜Melon Orenâ€™, â€˜Halest Bestâ€™, â€˜Kinantiâ€™, â€˜Melon Hibridaâ€™, â€˜Yubariâ€™, â€˜Honey Dewâ€™, and â€˜Rock Melonâ€™. The results revealed that the ten melon genotypes showed diverse characteristics. â€˜Kinantiâ€™ was the sweetest genotype, â€˜Rock Melonâ€™ possessed the highest fruit weight and fruit flesh, and â€˜Halest Bestâ€™was the most attractive flesh color. With a similarity level of 70%, the genotypes could be clustered into five groups. The highest genetic distance was discovered between genotypes in group I and V, II and V, III and V, and IV and V.** Keywords: characterization, Cucumis melo, genetic relationship, selection,
Agriculture-11	**The Risk of Foot and Mouth Disease in Cattle in the Perspective of Breeders in Medan City, North Sumatra, Indonesia** No data [ID= 136] **Abstract: Foot and mouth disease is a disease with high transmission power in dark-cuffed animals. The impact of cows contracting this virus is economic losses, mainly due to decreased milk and meat production and decreased labor productivity, which usually works for cattle farms. The main obstacle is the difficulty of achieving the target livestock population growth rate. For this reason, it is necessary to analyze and mitigate the risks of this disease. In using the house of risk method as a research tool, 5 risk agents were produced which had a 38.06% impact on potential risk. Furthermore, an assessment of the difficulties in implementing risk mitigation actions is carried out and an assessment of the relationship between the risk agent and risk mitigation. Next, the calculation of Total Effectiveness and Effectiveness to Difficulty Ratio is performed. The results showed that the disease infection had a negative impact on the farm, which was rated as very bad or dangerous by the farmer, which meant causing the supply chain to fail with damage impacting the system without warning. It was also found that 25% of the 5 potentially critical risk agents were found. Risk mitigation efforts are proposed to improve quality control of both animal feed ingredients and beef slaughter products based on the Indonesian National Standard. Next, create standard operating procedures for the process of cutting, weighing and distribution of meat to the market or directly to consumers.** Keyword: Foot and mouth disease, dark-cuffed animals, house of risk method, Effectiveness to Difficulty Ratio
Agriculture-12	**Expanding Application of True Shallot Seed Production Technology Indoor to Support Shallot Agribusiness** Daru Mulyono[1], Winda Nawfetrias[1], Lukita Devi[1], Dwi Pangesti Handayani[1], Irna Surya Bidara[1], Eka Nurhangga[1], Delvi Maretta[1], and Siti Himawati[1] [1]Research Organization for Agriculture and Food, National Research and Innovation Agency (BRIN), Indonesia **Abstract: Shallot is a potential export commodity and has high economic value. The objective of the research is to expand application of the true shallot seed indoor production technology to support shallot agribusiness development. This research is a descriptive analytic by using data and information where it was collected from various scientific publications including discussion in the agricultural scientific meeting. In general, shallot farmers in Indonesia use tubers for cultivation, where the continuous use causes accumulation of pathogens which will reduce productivity. Cultivation of shallot by using true shallot seed is very profitable because that are disease-free seeds and has higher**

	productivity than using tubers. In 2021 average production of shallot in Indonesia quite low reach 10.3 ton/ha where it is only about 30% from the potential productivity. Global demand of shallots continues to increase but export volume from Indonesia in 2015-2021 tends to fall. One of the problem is the availability of high quality of seeds where it can be overcome through the widespread application of true shallot seed indoor production technology to farmers. The widespread application of true shallot seed indoor production technology to farmers can be done through the development of Shallot Farmer Association especially in the central production of shallot. Through the widespread application of true shallot seed, it is hoped will significantly support shallot agribusiness development in Indonesia. No data [ID= 146]
Agriculture-13	**HYBRIDIZATION OF BLACK RICE AND AROMATIC RICE** No data [ID= 149] [1] Faculty of Agriculture, Universitas Jember, Jl. Kalimantan 37, Kampus Tegal Boto Sumbersari, Jember, East Java, Indonesia [2] Faculty of Agriculture, Sebelas Maret University (UNS), Jl. Ir. Sutami 36A, Kentingan, Surakarta 57126, Central Java, IndonesiaEmail: ummisholikhah.faperta@unej.ac.id **Abstract: Black rice has the advantage of high anthocyanin content which is beneficial to human health, the anthocyanin functions as an antioxidant which has an important role as one of the compounds for anti-cancer, (Hyun and Chang, 2004; Karmei et .al, 1995) and is also useful for hypoglycemia and can lower cholesterol. Aromatic rice has an aroma that non-aromatic rice does not have. The fragrant aroma comes from the presence of a compound that is owned by aromatic rice which is produced by the volatile compound 2-Acetyl I pyrrolin (2AP), (Buttery et al, 1986; Singh 2000). Rice produced from artificial crosses is expected to have a combination of superior properties that are inherited from their parents, for example having superior physicochemical content, early maturity, having many productive tillers and high yield production. The purpose of this study was to cross black rice and aromatic rice to obtain new strains of aromatic black rice. Hybridization was carried out in two ways, namely the paste method and the sowing method. The success percentage of the sowing method was higher than the pasting method with percentage values from 32% to 68%, with details of PPM X H. PW (36%), H. Bantul X PPM (68%), MPN 05 X HL (50%) , H. PW X Pendok (32%). While the percentage of crosses using patch method was relatively lower with the values for each combination of crosses being PPM X H. PW (32%), H. Bantul X PPM (30%), MPN 05 X HL (24.8%), H. PW X Pendok (28%).** Key word. Hybridization, black rice, aromatic rice
Agriculture-14	**Characterization of the Tyrosinase Gene (TYR) of Aquarium-Maintained Nyalian Fish (Rasbora sp.)** SAMP Suryani[1], D N Sadguna[1], AA Putri Risa A[2], Yoga parawangsa[1], Agus Surya Pratama[1], IGA Dewi Seri Rejeki[3] [1]Program Study of Aquatic Resources Management, Warmadewa University, Indonesia [2]Program Study of Agrotechnology, Warmadewa University, Denpasar, Bali, Indonesia [3]Program Study of Animal Science, Warmadewa University, Denpasar, Bali, Indonesia Corresponding author: E-mail: suryanip@rocketmail.com **Abstract: Rasbora fish is a local Indonesian fish whose population has decreased. In the Province of Bali this fish is called the Nyalian fish and no one has cultivated this fish. Nyalian fish in Bali Province are used as consumption fish and have potential as freshwater ornamental fish. Catching Nyalian fish continuously can cause this fish decrease in population and can cause extinction. Nyalian fish conservation can be done by domestication and adapting fish caught from their natural habitat to aquaculture aquarium, then used in aquaculture activities and ensuring continuity of numbers and avoiding extinction. During the domestication process, the Nyalian fish will experience stress due to changes in their habitat. Stress in fish can be shown by a drastically darker body condition. Parts of the body that blacken or show a darker color are due to the activity of melanin as an active role in it. The Tyrosinase gene is one of the genes responsible for coding pigment patterns. The TYR gene has an important role in instructing the formation of the enzyme Tyrosinase. TYR gene expression can be used as a marker of stress conditions in fish that can be caused by internal and external factors. However, the genetic information of the TYR gene in Nyalian fish is very minimal, so this study intends to isolate and characterize the TYR gene in Nyalian fish. TYR gene amplification using two pairs of primers. Analysis of the sequencing results was carried out with BLAST. The Tyrosinase (TYR) gene was successfully amplified from Nyalian genomic DNA using two pairs of primers with a length of 525 bp.** Keywords: TYR gene, Nyalian fish, PCR
Agriculture-15	**Utilization of Spatial Technology in Making Map of Land Suitability Class for Mango (Mangivera indica L.) Plants in South Langowan District, Minahasa East Coast** Sandra Pakasi[1] ,Wiske Rotinsulu[1], Fangky Paath[1]

	[1]Agrotechnology Study Program, Agriculture of Faculty, Sam Ratulangi University, Manado 95115, Indonesia **Abstract: Land suitability evaluation is very important in the process of matching land types to specific uses. This study aims to make a map of the distribution of land suitability classes for mango plants in South Langowan District by utilizing Spatial Technology. This research was conducted using field survey and geoprocessing methods. Determination of land suitability classes using the method from FAO. In this study, 30 land map units (LMU) covering an area of 4910.82 Ha were obtained which were spread over several villages in South Langowan District. The resulting land suitability class map is S1 (Highly suitable) for nutrient retention criteria and available nutrients. While the criteria for temperature and rooting media are included in the land suitability class S2 (Moderately suitable) and the criteria for water availability and the level of erosion hazard are generally included in class S3 (Marginally suitable) spread over all LMUs. While the level of erosion hazard is a criterion that gives class N (Not suitable) for mango plants in 12 (twelve) LMU with an area of 258.16 Ha or around 5.26%. Meanwhile, 18 (eighteen) LMUs covering an area of 4652.66 Ha or around 94.74% are suitable for the development of mango plants.** Keywords: Spatial Technology, Land Evaluation, Mangivera indica L.
Agriculture-16	**Effect Of NPK 12:12:17:2+TE Fertilizer and Coconut Husk Ash as Amilioran On Growth And Photosynthesis Of Oil Palm Seedlings in Peat Media** Fathurrahman F[1,,]Qhairil Fajar [1,] Siti Zahrah[1,] Febri Doni[2,] Maizar[1,] Zaldi Arman[3] [1] Department of Agrotechnology, Faculty of Agriculture, Universitas Islam Riau, Pekanbaru, 28284 Indonesia [2] Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, Jatinangor 45363, West Java, Indonesia3Department of Food, Food Crops and Horticulture Riau Province, Indonesia Correspondence: fathur@agr.uir.ac.id **Abstract: Increasing the growth of oil palm seedlings can be done using fertilizer. The problem of growing oil palm seedlings in the field causes disruption in the availability of seeds. This is one of the factors caused by a lack of nutrients for growth. The purpose of this study was to determine the effect of NPK 12:12:17:2+TE (NPK) fertilizer and coconut coir ash (CCA) amiliorants on growth and photosynthetic levels of oil palm seedlings in peat soil growth media. The design used was a completely randomized design (CRD) consisting of two factors, namely NPK 12:12:17:2+TE consisting of control, 30 g, 60 g, 90 g. The coconut coir ash factor consisted of control, 40 g, 80 g, 120 g. Data were analyzed statistically and if significantly different continued Duncan's test 0.05. The best plant height was a combination of NPK fertilizer dose of 90 g and COA dose of 80 g resulting in a height of 104.53 cm. The highest increase in stem girth was 6.60 cm. For the highest chlorophyll content, namely 62.11 results from the combination of 90 g of NPK and 120 g of CCA. The rate of photosynthesis produced 39.11 Î¼mol CO2 m-2 s-1. The highest stomata conductance was 0.21 mol H2O m-2 s-1. The highest internal CO2 concentration was 177 Î¼mol CO2 mol-1. The best transpiration was 2.94 mM H2O m-2s-1. Whereas the highest water use efficiency was 16.15%. The results showed that increasing the dose of fertilizer and amilioran increased growth, photosynthesis, stomatal flow, internal CO2, reduced transpiration and increased water efficiency of use.** Keywords : Oil palm, fertilizer, elevated of growth, physiology
Agriculture-17	**Efficiency of Mud Crab Capture Fisheries (Scylla serrata) in Bengkulu Province, Indonesia** Indra Cahyadinata[1,] Irnad[1,] Ayub Sugara[2] [1]Department Socio Economic of Agriculture, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia [2]Department Marine Science, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia Coresponding author : irnadardenis@yahoo.co.id **Abstract: Bengkulu Province is one of the capture fisheries production centers in Indonesia, including mud crab (Scylla serrata). Mud crab capture fisheries must pay attention to the sustainability of fishermen's resources and income. This study aims to examine the efficiency of mud crab capture fisheries. To achieve this goal, sampling of 70 mud crab fishermen spread across 7 regencies/cities in Bengkulu Province. The analytical tools used are cost, revenue, income and business efficiency analysis. The results showed that mud crab fishing activities carried out by fishermen are included in the efficient category because the RC ratio value greater than one (R/C > 1). To maintain business continuity, fishermen's participation is needed to preserving mud crab resources, one of which is catching crabs weighing more than 200 grams or carapace width more than 15 cm.** Keywords : capture fisheries, mud crabs, efficiency, sustainability, Bengkulu
Agriculture-18	**EXPLORATION OF STREPTOMYCES SP. BACTERIA IN THE ALAS PURWO FOREST AREA, BANYUWANGI, EAST JAVA AND TESTS OF ITS INHIBITORY AGAINST RALSTONIA SOLANACEARUM CAUSES OF BACTERIAL WILT IN POTATO PLANTS**

	Retno Kawuri[1] Made Pharmawati[2,] Ida Bagus Gede Darmayasa[1,] Dinda Nur Malik Insani[3,] Jovita Illona Vania[3] [1]Microbiolgy Laboratory, Biology Study Program, F. MIPA Udayana University Bali Indonesia [2]Genetica Laboratory, Biology Study Program, F. MIPA Udayana University Bali Indonesia [3]Student Biology Study Program, F. MIPA Udayana University Bali Indonesia email retnokawuri@unud.ac.id **Abstract: Streptomyces bacteria can be used as a biological agent to control plant pathogens without damaging the environment. Exploration for Streptomyces in the forest area needs to be carried out which is expected to find species of Streptomyces which are rare and capable of producing new antibiotics to be used as biological pesticide agents. One of the pathogens that currently attack potatoes is Ralstonia solanacearum, a bacterial wilt disease that causes the greatest losses to cultivated plants. The purpose of this study was to explore and obtain potential Streptomyces bacteria candidates in the Alas Purwo Forest Area in Banyuwangi, East Java and to determine their inhibition against the pathogen R. solanacearum. Sampling was carried out in 3 areas of different vegetation types in the jungle zone of the Alas Purwo Forest, namely Sadengan Grassland, Tropical Rain Forest and Bedul Mangrove Forest. Streptomyces isolation using the International Streptomyces Project media (ISP4 and ISP2), identification using the identification book from Selman A. Waksman. The inhibition test used the dual culture method. The exploration results found a total of 24 isolates of Streptomyces sp from the three locations with different morphological and microscopic characteristics. The value of inhibition between Streptomyces sp and R. solanacearum varied. The highest inhibition was produced by Streptomyces sp2 of 4.63 cm which was significantly different from the 1% cloramphenicol control of 1.50 cm. In the future Streptomyces sp.2 culture can be used as a biological pesticide against the pathogen R. solanacearum that causes bacterial wilt in potato plants.** Key words; Streptomyces, exploration, vegetation, biological pesticides
Agriculture-19	**Potential of Secunder metabolic of Trichoderma sp against Purple Blotch Disease and Shallot Yields** Sri Wahyuni Manwan[1,] Ni Putu Sutami[2] dan Ni Made Delly Resiani[1] [1]Research Centre for Horticulture and Crop Estate, National Research and Innovation Agency Jl. Raya Jakarta â€“ Bogor, Cibinong, Jawa Barat [2]Assessment Institute for Agricultural Technology â€“ Bali, Indonesian Agency for Agricultural Research and Development (IAARD), Ministry of Agriculture. Denpasar, Bali Emails dellyresiani67@gmail.com **Abstract: Purple Blotch disease caused by Alternaria porri can cause high yield losses of 40-70% if not controlled. Control efforts have been carried out using chemical pesticides. The use of Secondary Metabolic of Trichoderma sp. is an alternative environmentally friendly control that can be done to suppress the development of this disease. The study was conducted in Tabanan Regency, Bali in February â€“ May 2020. This study used a randomized design of factorial with two factors. The first factor is the dose of MS Trichoderma sp. and the second factor is the shallot variety. The first factor consists of 4 levels Control / MS Trichoderma sp; 20 ml/l MS Trichoderma sp; 40 ml/l MS Trichoderma sp; and 60 ml/l MS Trichoderma sp. The second factor consisting of 3 levels shallot variety Bima brebes, Bali Karet and Local Tabanan. The results showed the application of MS. Trichoderma sp. and the onion variety showed the best yield with the lowest trotol attack in the combination of 40 ml/l MS treatment and Bali Karet Variety which was 11.55% and the highest dry tuber weight production of 14.10 tons per hectare.** Keywords: MS. Trichoderma sp, Purple Blotch, Production, Shallot
Agriculture-20	**Flavonoid from Chloroform Extract of Samanea saman Jacq. Leaves as an Inhibitor of The Growth of Fusarium solani, The Cause of Dragon Fruit Stem Rot Disease** Wiwik Susanah Rita[1,] Dewa Ngurah Suprapta[2,] I Made Dira Swantara[3,]I Made Sudana[2] [1]Chemistry Department, Faculty of Math. and Natural Sciences, Universitas Udayana, Kuta, Bali, Indonesia [2]Agricultural Department, Faculty of Agriculture, Universitas Udayana Denpasar, Bali, Indonesia [3]Master of Chemistry Department, Faculty of Math. and Natural Sciences, Universitas Udayana, Denpasar, Bali, Indonesia Email susanah.rita@unud.ac.id **Abstract: Rain tree (Samanea saman Jacq.) leaf chloroform extract can be used as an inhibitor for the growth of Fusarium solani, pathogenic fungi that cause stem rot disease on dragon fruit. The aim of this study was to isolate compounds in the antifungal active fraction of the chloroform extract of rain tree leaves. Extraction was carried out by maceration method followed by a partition into n-hexane, chloroform, ethyl acetate, and acetone. Separation of compounds in the active extract was conducted by chromatography methods, while phytochemical screening and spectroscopy method was applied to identify compounds. The antifungal assay was carried out by well diffusion agar. Extraction of 5 g of rain tree leaf powder produced 404.3 g of concentrated ethanol extract. The partition process produced concentrated extracts of n-hexane, chloroform, ethyl acetate, acetone, and water. Antifungal assay results showed that all extracts could inhibit the growth of fungi. Rain tree leaf chloroform extract was the strongest inhibiting the growth of Fusarium solani with a diameter of 22.5 mm. Separation of the compound in the chloroform**

	extract resulted in the most active isolate that can inhibit the growth of the fungi with an inhibition zone of 13 mm. Identification compound in the active isolate shows that the compound responsible for the activity of the rain tree leaf chloroform extract is flavonoids, especially flavonols. Keywords: Dragon fruit, Fusarium solani, Pathogenic Fungi, Rain Tree, Samanea saman Jacq.
Agriculture-21	**Evaluation of Genetic Diversity of Geronggang (Cratoxylum arborescens) from Riau Using Random Amplified Polymorphic DNA (RAPD) Markers for Peatlands Restoration** Deviona[1,] Dewi Indrayani Roslim[2] Chairul[3,] Ayu Aizatul Natasya[4] [1]Agrotechnology Departement, Faculty of Agriculture, Riau University Kampus Bina Widya Jl. HR. Subrantas Km 12,5, Pekanbaru 28293, Indonesia [2]Biology Departement, Faculty of Mathematics and Science, Riau University Kampus Bina Widya Jl. HR. Subrantas Km 12,5, Pekanbaru 28293, Indonesia [3]Chemical Engineering Departement, Faculty of Engineering, Riau University Kampus Bina Widya Jl. HR. Subrantas Km 12,5, Pekanbaru 28293, Indonesia [4]Master of Agricultural Science, Faculty of Agriculture, Riau University Kampus Bina Widya Jl. HR. Subrantas Km 12,5, Pekanbaru 28293, Indonesia ayuaizatul.natasya57@gmail.com **Abstract: Geronggang (Cratoxylum arborescens) is one of the original pioneer plantations of peatlands and an alternative wood for producing pulp. This research aimed to determine the genetic diversity within and between three populations of geronggang from Riau based on RAPD molecular markers. Samples were taken from Bantan Timur Village, Bengkalis Regency, Rawa Mekar Jaya Village, Siak Regency, and Lukun Village, Meranti Islands Regency. Leaf samples were taken on the branches of young leafy trees part with intact and healthy leaf surfaces. The DNA isolation method using (Geneaid) factory procedure. Primers selection was carried out on 10 primers from 36 geronggang individuals and the results of the selection obtained 5 selected primers capable of amplifying 23 individuals ofÂ CrotoxylumÂ arborescentÂ namely OPD20, OPAD10, OPC19, OPZ10, and OPV10. The total bands produced were 91 with 83 (91.21%) polymorphic DNA bands with ranges of about 100 pb-2,500 pb. The genetic distance coefficient is 0.502 groups of geronggang individuals divided into 3 groups that have the same genetic kinship. The first group with genetic 0.470 consisted of 9 individuals and the second group consisted of 13 individuals, while the third group consisted of one individual. Genetic diversity (He) in geronggang population ranging from 0.1968 Â± 0.2024 to 0.2321 Â± 0.1895 with an average genetic diversity valued at 0.2178 Â± 0.1839. The heterozygosity (He) value of geronggang population is moderate. The genetic difference between geronggang populations is moderate with a GST value of 0.149. The amount of genetic distance between populations was 0.0593 - 0.0976 and the Mekar Jaya and Bantan Timur populations have a genetic distance of 0.0976. The population of Rawa Mekar Jaya (Siak) village is a source of seeds recommendation for the peatland restoration program.** Keywords : Geronggang, Genetic Diversity, RAPD.
Agriculture-22	**The Effect of Some Spice Essential Oils on the Shelf-Life of Strawberry (Fragaria x ananassa) during Cold Storage** Yuliani Aisyah[1,] Asmawati[1,] and Ismail Sulaiman[1] [1]Department of Agricultural Product Technology, Faculty of Agriculture, Universitas SyiahKuala, Banda Aceh, Indonesia 23111 Corresponding Author: yuliani.aisyah@unsyiah.ac.id **Abstract: Strawberry is a fruit that contains high bioactive compounds. However, it is considered a highly perishable fruits, and have a short shelf life. Essential oils can be used as an appropriate technique to reduce post-harvest deterioration in fresh fruits thereby extending shelf life during storage. The current study assessed the impact of different essential oils, including galangal oil (Ga), ginger oil (Gi), eugenol oil (E) and cinnamon oil (C) on the changes in the physicochemical properties of stawberry coated with essential oil emulsions, and to determine the shelf life by using Accelerated Shelf Life Testing (ASLT) method through the Arrhenius approach, which is simulated in three conditions of storage temperature namely 2Â±1 Â°C, and 5Â±1 Â°C. The differences in the changes physicochemical properties of strawberry were assessed by determining the following parameters: weight loss, moisture content, firmness, total dissolved solids, vitamin C and sensory analysis. The results showed that the fruit treated with all essential oils treatments (Ga, Gi, E and C) had higher physicochemical properties than untreated fruits. At the end of the storage period, the treated fruits showed a greater acceptance and sensory attributes than the untreated fruits.** Keywords : Essential oil, strawberry, shelf life, fruit quality
Agriculture-23	**Organic paddy field management increases earthworm density and biomass** W S Dewi[1,] E Istikomah[1,] Iksaniah[1] and H A Salsabila[1]

	[1]Soil Science Department, Agriculture Faculty of Universitas Sebelas Maret, Jl. Ir. Sutami No. 36, Surakarta 57126, Central Java, Indonesia Corresponding author: widyatmanisih@staff.uns.ac.id **Abstract: Earthworms are vital in maintaining health and increasing soil fertility in paddy fields. Organic rice management is likely to improve the density and biomass of earthworms compared to inorganic (conventional) management. This study evaluated the effects of organic, semi-organic, and inorganic rice management on earthworm populations and biomass. The research was conducted in the organic paddy fields of Gentungan village, Karanganyar, Central Java. The study is descriptive and exploratory on five types of rice field management: 12-year, 7-year, 4-year, semi-organic, and inorganic rice fields. Repeat five times. The results showed that organic paddy field management could increase earthworms for a more extended period. Organic rice fields aged 12 years showed the highest density and biomass of earthworms, namely 163 individuals/m2 and 33.77 g/m2, with a weight per individual worm of 0.23 g/individual. Improvement in the density of earthworms was associated with an increase in soil organic C content (r = 0.03*). Improving soil biological and chemical characteristics must be linked to rice production and quality to understand organic rice's urgency comprehensively.** No data [ID= 485]
Agriculture-24	**Characteristics of Weeds due to the Application of Different Types and Doses of Organic Mulch to Soybean** Hasanuddin Hasanuddin, Siti Hafsah, Jumini Jumini, and Nurul Ikhwani Department of Agrotechnology Faculty of Agriculture Universitas Syiah Kuala, Banda Aceh, Indonesia email hasanuddin@unsyiah.ac.id **Abstract: One method of controlling weeds in soybean is using organic mulch. This study aims to determine the effect of the type and dose of organic mulch and its interaction on weed characteristics in soybean. This research was conducted at the Experimental Farm and Laboratory of Weed Management, Faculty of Agriculture, Syiah Kuala University, Banda Aceh from August to November 2022. The design used was a 3 x 4 bifactorial Randomized Completely Block Design (RCBD) with three replications. The mulch type factor consists of: water hyacinth, rice straw and siam weed. The mulch dose factors consisted of: 0, 8, 16 and 24 tons ha-1. The observed variables were weed coverage percentage, weed species, individual weeds and weed dry weight. The results showed that the dose of organic mulch affected the percentage of weed cover, individual weeds and weed dry weight. A dose of 24 tons ha-1 can reduce the percentage of weed coverage, individual weeds and weed dry weight. There is an interaction between the type and dose of organic mulch on the percentage of weed cover. Siam weed mulchtype with a dose of 24 tons ha-1 can reduce the percentage of weed coverage.** Keyword : organic mulches, weed, soybean
Agriculture-25	**Effect of phosphate nutrient sources and phosphate-solubilizing bacteria applications on sorghum in acid soils** D M Tarigan, S Utami, M I Sentosa, A Lestami, W A Barus, and A Munar Department of Agrotechnology, Faculty of Agriculture, Universitas Muhammadiyah Sumatera Utara, Mukhtar Basri No. 3, Medan, Indonesia Republic-20238. E-mail: dafnimawar@umsu.ac.id **Abstract: Sorghum is a plant that requires a large amount of P nutrient for its growth. Increasing P nutrients can be done by adding P sources to the soil by adding artificial inorganic fertilizers or natural inorganic fertilizers. Both of the fertilizers are insoluble, so it needs help from microbes to convert P to be available for plants, especially in acid soils. The study aims to identify the effect of phosphate nutrient sources and phosphate-solubilizing bacteria on sorghum in acid soils. This research was conducted at Helvetia Village, Sunggal District, Deli Serdang Regency, North Sumatra Province, Indonesia. This research was conducted using a factorial randomized block design (RBD), with two factors and 3 replications. The first factor is sources of phosphate nutrients consisting of 4 levels, namely without application, Triple superphosphate, Super Phophate-36, and Rock Phosphate. The second factor is phosphate solubilizing bacteria consisting of 4 levels, namely 0, 4, 8, and 12 g/plant. The results showed that the single application of Rock phosphate 17 g/plot and Burkholderia 12 g/plant significantly increased panicle length, seed weight per panicle, and seed weight per sorghum plant. The best interaction in increasing the growth and yield of sorghum in acid soils was the combination of Rock phosphate 17 g/plot and Burkholderia 8 g/plant.** Keywords: acid soil, Burkholderia sp, phosphate, sorghum
Agriculture-27	**Differences in Growth and Yield of Moringa oleifera Leaves by Submerssion Seeds and Variations of Planting Medium**

	Rini Sulistiani[1,] Surianto[2,] Bambang Arif Rahmadi[3,] and Wan Arfiani Barus[1] [1]Universitas Muhammadiyah Sumatera Utara, Faculty of Agriculture, Program study of Agrotechnology. [2]United Kingdom Indonesian Plantation. Gedung HSBC, Jl. Pangeran Diponegoro No.11, Madras Hulu, Kec. Medan Polonia, Kota Medan, Sumatera Utara 20151. [3]Universitas Muhammadiyah Sumatera Utara, Faculty of Agriculture, Student of Program study of Agrotechnology. Corresponding author email: rinisulistiani@umsu.ac.id. **Abstract: Moringa cultivation is generally done using seeds, but the seeds produced have a fairly hard seed coat, thus affecting germination and seed vigor. The research by immersing seeds with plant growth regulators (PGR) and a comparison of the composition of planting media need to be done to get the maximum PGR concentration and the right composition of the planting medium to grow. The study was conducted using a Split Plot Design with the main plots PGR consisting of Z1 (freshwater), Z2 (Coconut liquid), and Z3 (GA3). The subplot is Plant Medium consisting of M1 (soil: sand: manure-1:1:2); M2 (soil: sand: manure-1:2:1); M3 (soil: sand: manure-2:1:1). Data were examined by Analysis of Variance (F test) and continued by DMRT and correlation regression. The results of the analysis showed that PGR had a significant effect on plant height, stem diameter, and root length. The composition of the planting medium caused significant differences in plant height, stem diameter, fresh and dry leaf weight. The interaction between the planting medium and PGR caused differences in stem diameter at 2 and 8 weeks after planting. The recommended PGR treatment is fresh water to obtain longer roots and taller plants. M1 planting media produced the most number and weight of leaves. The combination treatment of Z3M2 produces the largest diameter**. Keywords: PGR; functional food; composition; secondary-metabolites
Agriculture-28	**Chemical and Functional Properties of Gelatin Extracted from Skin and Bones of Ocean Triggerfish in Comparison with Commercial Fish Gelatin** Fahrizal[1,2,] Normalina Arpi[2,] M Dani Supardan[3,] Sugeng Heri Suseno[4,] Fazilatul Husna[2,] Dara Amanatillah[2] [1]Program Studi Doktor Ilmu Pertanian, Universitas Syiah Kuala, Banda Aceh [2]Program Studi Teknologi Hasil Pertanian, Universitas Syiah Kuala, Banda Aceh [3]Program Studi Teknik Kimia, Universitas Syiah Kuala, Banda Aceh [4]Program Studi Teknologi Hasil Perairan, IPB University, Bogor Email normalina.arpi@usk.ac.id; fahrizal.z@usk.ac.id **Abstract: Potential utilization of gelatin derived from skin and bone of spotted ocean triggerfish (canthidermis maculate) were studied. Fish samples were initially treated with acid and alkali solution respectively and extracted with water at 50 C for 18 hours. Chemical and functional properties including yield, protein content, viscosities, gel strength, emulsifying and foaming properties, water holding capacity and oil holding capacity of the gelatin were analyzed and compared with commercial fish gelatin.** **The average yields of fish gelatin extracted from the skin and bones of spotted ocean triggerfish were 9.30 % and 2.36 %, respectively. The protein contents of the skin and bones gelatin were 82.36 % and 78.5 %, respectively. The viscosities were higher than commercial fish gelatin with values 7.59 and 5,39 cP. The gel strengths were lower with commercial fish gelatin with values of 86.7 and 84.2 (g/cm2) respectively. In fish skin gelatin, emulsifying properties, foaming properties and oil holding capacity were higher than commercial fish gelatin. The water holding capacity of skin and bone gelatin being similar to commercial fish gelatin. The chemical and functional properties for fish skin and bone gelatin suggested that their qualities were similar to commercial fish gelatin and suitable for the food and packaging applications** **.** Key word: skin, bone, gelatin, chemical, functional
Agriculture-29	**Growth, productivity and morphological character of katuk (Sauropus androgynus (L.)Merr.)plants on various shading intensity** A Rahayu[1,] N Rochman[1,] W Nahraeni[2] and Yuliawati[1] [1]Department of Agrotechnology, Agriculture Faculty, Djuanda University, Bogor, Indonesia [2]Department of Agribusiness, Agriculture Faculty, Djuanda University, Bogor, Indonesia email arifah.rahayu@unida.ac.id **Abstract: This study was aimed at assessing the effects of shade on the growth, productivity, and morphological characteristics of katuk/star gooseberry (Sauropus androgynus). A split-plot design was used. The main plot was shade treatments consisting of four levels, namely 0% (no shade), 25%, 50%, and 75%. The subordinate plot was the seed origins, namely Sukabumi, Cianjur, and Bogor. The arrangement of the main and sub plots was done based on a completely randomized design. Results showed that shade treatment up to 50% in katuk plant increased the number of leaves, number of leaflets, leaf length and width, number of branches, and stem circumference. Chlorophyll content was found to be increased with shade treatment up to 75%. Katuk plants of Sukabumi origin were found to be superior in plant height, leaf length and width, stem circumference, branch length, leaf segment length, and leaf area. Katuk**

	plants of Cianjur origin were found to be superior in number or leaves, number of leaflets, number of branches, leaf chlorophyll content, and number of stomata. Katuk plants were potential to be grown under shades. Key words: seed origin, number of leaves, chlorophyll, stomata
Agriculture-30	**IN VITRO TESTING OF FUNGAL AND BACTERIAL ANTAGONIST GROUPS TO Fusarium sp. WHICH CAUSES WILT DISEASE OF AWAK BANANA** **Susanna[1], Alfizar[1], Asyifa Thahirah[1]** [1]Department of Plant Protection, Faculty of Agriculture, Universitas Syiah Kuala, Banda Aceh, Indonesia Email Correspondence : Susanhasan@usk.ac.id **Abstract: Fusarium wilt disease caused by Fusarium oxysporum is one of the important diseases that infect banana plants. The percentage of fusarium wilt attack on banana plants ranges from 5-70%. One of the most prospective alternatives is biological control by applying antagonistic agents. The aim of this study was to determine the effectiveness of the antagonist agents of the fungal and bacterial groups in inhibiting the growth of Fusarium sp. the causal of awak banana wilt in vitro. The research used a non-factorial completely randomized design (CRD) with 5 treatments and 4 replications. The data obtained from the results of the antagonistic test were analyzed using ANOVA and continued with the smallest significant difference test at the 5% level. The results of the antagonistic test of T. harzianum, T. asperellum, P. aeruginosa and Bacillus sp. showed that the antagonist agent was able to inhibit the growth of Fusarium sp. with the percentage of inhibition respectively 61.52% (T. harzianum), 57.34% (T. asperellum), 14.88% (P. aeruginosa), and 12.52% (Bacillus sp.). The percentage of inhibition of the antagonist fungus group was better than the antagonist bacteria on the growth of Fusarium sp. with the best inhibition was shown by T. harzianum through competition and antibiosis mechanism.** Keywords: Antagonist agents; Fusarium sp.; Awak banana
Agriculture-31	**RESPONSE TO THE GROWTH AND PRODUCTION OF GREEN BEAN (Vigna radiata L) PLANT WITH THE APPLICATION OF HUSK CHARCOAL AND SEVERAL PLANT SPACE** Luh Kartin[1], Ida Bagus Komang Mahardika[2], Made Sri Yuliartin[3], Anak Agung Ngurah Mayun Wirajaya[4] [1,2,3,4] Agrotechnology Department, Faculty of Agriculture, Warmadewa University, Indonesia Email luhkartini59@gmail.com, gusmahardika62@gmail.com, yuliartinisri@gmail.com, mawir61@gmail.com **Abstract: This study aims to determine the effect of rice husk charcoal and several plant spacings used on the growth and yield of green beans (Vigna radiata L). This study was a factorial experiment with a randomized block design (RBD) consisting of two factors, namely husk charcoal (A) with three levels: A1 = 5 tons ha-1; A2 = 10 tons ha-1 and A3 = 15 tons ha-1. While the spacing (B) there are three levels, namely: B1 = 30 x 25 cm; B2 = 30 x 30 cm and B3 = 30 x 35 cm. The research was carried out in Subak Abianbase, East Denpasar Village, Denpasar City with an altitude of approximately 75 m above sea level and the time of the research was from March to May 2022. The interaction had a significant effect between the dose of husk charcoal and the spacing (A x B) on the pod length variable and had a very significant effect on the dry weight of harvested seeds per hole. The highest dry weight of harvested green bean seeds was obtained at the interaction of husk charcoal 15 tons ha-1 and spacing of 30 x 35 cm (A3B3), namely 39.67 g per planting hole and the lowest at charcoal husk 5 tons ha-1 and spacing of 30 x 30 cm (A1B2), which is 25.33 gr per planting hole** Keywords: Charcoal Husk, Planting Distance, Green Beans
Agriculture-32	**VEGETATIVE GROWTH AND ROOT DEVELOPMENT OF POTATO PLANTS (Solanum tuberosum L.) WITH THE APPLICATION OF MYCORRHIZA AND RHIZOBACTERIA** **W Warnita[1], Yulmira Yanti[2], Rohmi Suwinda[1]** [1]Department of Agronomy, Faculty of Agriculture, Andalas University. Padang 25163, West Sumatra, Indonesia [2]Department of Plant Protection, Faculty of Agriculture, Andalas University. Jl. Universitas Andalas, Limau Manih, Padang 25163, West Sumatra, Indonesia warnitaagr.unand.ac.id **Abstract: The Potato plant is a horticultural crop that is an alternative food diversification. Potato plant growth is affected by the application of mycorrhizae and rhizobacteria. The purpose of this study was to obtain the best mycorrhizae and rhizobacteria on vegetative growth and root development of potato plants. This research was conducted at the Microbiology Laboratory, Plant Physiology Laboratory, Faculty of Agriculture, Andalas University, and experimental garden Institute Assessment and Agricultural Technology in Sukarami Solok, from July to December 2018. The design used was a 2-factor factorial design in a completely randomized design (CRD). The first factor is Multisport, Acaulospora, Glomus SP 2, and Sclerocystis. The second factor is the type of rhizobacteria: without**

	Rhizobachteria, RZ.3.L2.1, and RZ.1.L2.3. Each treatment was replicated 3 times so that it consisted of 36 experimental units. Observational data were analyzed by analysis of variance with the F test of 5% followed by the LSD test of 5%. The best results of ILD and root fresh weight on the interaction of mycorrhiza Sclerocystis with RZ.1.L2.3 rhizobacteria Keywords: infection, mycorrhizal, potato, rhizobacteria, root
Agriculture-33	**Efforts to produce the off-season guava (Psidium guajava cv. Kristal) and improve fruit quality through fertilization and pruning** I **Nyoman Rai[1,] I Wayan Wiraatmaja[1,] and Ni Komang Alit Astiari[2]** [1]Agroecotechnology Stady Program, Faculty of Agriculture, Udayana University; [2]Agrotechnology Study Program, Faculty of Agriculture, Warmadewa University Correspondence: rainyoman@unud.ac,id **Abstract: The high market demand of guava (Psidium guajava L. cv. Kristal) and their promising prices causes the grower very interest in cultivating. This study aimed to obtain the best fertilizer package and the most effective method of pruning as an effort to produce off-season and improve the quality of guava fruit. The research was conducted in Bali Province, Indonesia, from April to September 2022. The experiment used a randomized block design with 2 factors and 6 replications. The first factor was fertilization consists of 3 levels (control/P0), fertilized with N, P, K, and Ca (P1), and fertilized with N, P, K, Ca and micro fertilizers Zn, and Cu (P2), while the second factor was pruning consist of 2 levels (without pruning/Tt) and pruning the ends of twigs (2-3 segments), twigs attacked by pests and diseases and unproductive twigs (Td). The interaction of fertilization and pruning had no significant effect on all observed variables. In the fertilization treatment, P2 (fertilization with urea, TSP, KCl and calcium in the form of gypsum/CaSO4.2H2O with a dose of 250 g, 300 g, 300 g, and 1,250 g/plant, and added with micro fertilizers ZnSO4 and CuSO4 0.4%/tree) gave the highest production and the best quality of off-season guava fruits. Pruning (Td) increased number of fruits per tree, fruit weight and fruit hardness. The increase in the number and quality of fruit in off-season period was related to the increase of N and P nutrient and total sugar, R-sugar and sucrose content of leaves.** Keywords: Guava, fertilization, pruning, off-season, fruit.
Agriculture-34	**Effect Ethanol Extract of Moringa Leaf on Liver Histopathology White Rat (Rattus norvegicus) induced by Meloxicam** N M R Suarni, N G A M Ermayanti, A ASG A Sukmaningsih Study Program of Biology, Faculty of Mathematic and Natural Sciences Corresponding author : rai_suarni@unud.ac.id **Abstract: The aims of this study were to find out the effects of ethanol extract of moringa leaf on liver histopathology white rats (Rattus norvegicus) induced by meloxicam. The experimental design used in this study was a Completely Randomized Design (CRD) with 5 treatments where K- was given only aquadest, K+ was given 8.4 mg/kgbw of meloxicam, P1 was given 8.4mg/kgbw of meloxicam and 200 mg of moringa leaf extract, P2 was given 8.4mg/kgbw of meloxicam and 400 mg of moringa leaf extract and P3 was given 8.4 mg/kg BW of meloxicam and 600 mg of moringa leaf extract and each treatment consisted of 5 replications. The treatment was carried out for 35 days.The parameters observed were hydropic degeneraration, sinusoidal dilatation, venous congestion, fatty degeneration, necrosis and inflammatory cell infiltration. The data obtained were analyzed by One Way Anova analysis and continued with Duncan's test. The results showed that there was a significant effect (P<0.05) of the ethanol extract of moringa leaves on liver histopathology white rats induced by meloxicam. It can be concluded that the ethanol extract of moringa leaves in this study can prevent liver cell damage of white rat induced by meloxicam** Keywords: histopatology, liver, meloxicam, moringa leaf, white rat
Agriculture-35	**Coconut Plantation Mapping Using Visual Interpretation Method in Bolaang Mongondow Utara Regency, North Sulawesi, Indonesia** Wiske Rotinsulu[1,] Semuel Runtunuwu[1,] Sandra Pakasi[1,] Badrun Zaini[2] [1]Fakultas Pertanian Universitas Sam Ratulangi [2]BPKH Wilayah II Palembang. Email wiske_rotinsulu@unsrat.ac.id **Abstract: Coconut is one of the plantation commodities that has an important role in the national economy with the main product being copra. All parts of the plant can be utilized so that the coconut plant is known as the tree of life. In addition, coconut plantations are social crops because + 98% are cultivated by farmers. North Bolaang Mongondow Regency is one of the districts in North Sulawesi that has significant agricultural potential. Coconut/copra production in North Bolaang Mongondow Regency in 2018 was 15,896.17 tons from a total area of â€‹â€‹17,642.83 Ha (BPS Sulawesi Utara, 2019). Spatial mapping of the distribution of coconut plantations in North Bolaang Mongondow Regency is needed to obtain information on the existing condition of coconut plantations in several sub-districts in the Regency. This study aims to interpret the latest satellite imagery using the visual interpretation method. Spatial map**

	of distribution of coconut plantations in Bolaang Mongondow Utara Regency can be generated through visual image interpretation using elements of pattern, shape, association location and texture interpretation. The results of visual interpretation of satellite imagery show coconut plantations in coconut in Bolaang Mongondow Utara Regency has a land area of â€‹â€‹9,126.75 Ha. Coconut plantations in this region is spread over six (6) districts with the largest coconut plantation area in West Bolangitang District 3614.62 Ha while the smallest area is located in Bintauna District 796.57 Ha. Keywords: Satellite imagery, visual interpretation, coconut plantation, landcover
Agriculture-36	**The Effectiveness of Local Ingredients and Varieties To Main Pests and Diseases and Shallot Yields** Ni Made Delly Resiani[1,] Wayan Sunanjaya[2,] and Putri Risa Andriani[3] [1]National Research and Inovation Agency. M.H.Thamrin No.8 Jakarta 10340 (INDONESIA) [2]Assessment Institute for Agricultural Technology â€“ Bali, Bypass Ngurah Rai-Bali, 80222 (INDONESIA) [3]Warmadewa University, Terompong No. 24 Denpasar Bali 80239 (INDONESIA) Emails dellyresiani67@gmail.com **Abstract: Low external input, cheap, efficient and high production, healthy for consumption as the highest success in cultivating plants at the moment. The problem with cultivating shallots is caterpillars and wilting of Fusarium. Optimizing the use of local ingredients with site-specific varieties as an effort to control and increase shallot yields. The research aims to determine the effectiveness of local materials and varieties to suppress pests and diseases and their effect on shallot yields. The research was conducted in Mambang,Tabanan, Bali Indonesia from March to June 2020. The study used a randomized block design, factorial pattern. Factor one, local ingredients (A) consist of 3 types of ingredients: A1/Biourin, A2/Natural pesticides and A3/Trihoderma sp. The second factor was shallot variety (B): 2 varieties namely B1/Local variety and B2/Super Philip variety). Data were analyzed using ANOVA and 5% LSD follow-up test. The results showed that the application of Trichoderma sp and variety Super Philip resulted in the lowest Fusarium attack intensity (6.4%), but was not significantly different in suppressing leaf caterpillars. Production of 14.28 t/h-1 so that it can be replicated at the field level.** Keywords: Local ingredients, shallot varieties, main pests and diseases, yields
Agriculture-37	**CONSORTIUM SOLID FORMULA OF Bacillus spp. TO CONTROL BACTERIAL WILT ON CHILI PLANTS** Yulmira Yanti[1,] Hasmiandy Hamid[1,] Nurbailis[1,] Yaherwandi[1,]Ujang Khairul[1,] Padel Rizki Pratama[2] [1]Plant Protection Departemen, Faculty of Agriculture, Universitas Andalas, Padang, West Sumatra 25163 [2] Student Departement Plant protection, Faculty Agriculture, Universitas Andalas, Padang West Sumatera, 25163 Corresponding author: yy.anthie79@gmail.com, mira23@agr.unand.ac.id **Abstract: Bacterial wilt is an important disease of chili caused by Ralstonia syzigii subsp. indonesiensis and can reduce yield by up to 90%. The research aimed to obtain the best solid formula consortium of Bacillus spp. for controlling R. syzygii subsp. indonesiensis on chili peppers. The study consists of 2 stages: 1). Production of a consortium combination of Bacillus spp. in solid waste 2). Test the ability of the consortium of Bacillus spp. in solid waste to control bacterial wilt in chili plants. The study used a completely randomized design that consisted of 19 treatments and four replications. Each treatment was introduced on chili seeds and seedlings, while the inoculation of R. syzygii subsp. indonesiensis was conducted on chili aged 35 days after planting. The results showed that the best solid formula consortium of the Bacillus spp. for controlling bacterial wilt (R. syzigii subsp. indonesiensis) on chili plants is the Bran + Bagasse formula for four weeks of storage.** Keywords: chili, Ralstonia syzigii subsp. indonesiensis, solid waste, viability
Agriculture-38	**Physicochemical Characteristics of Black Garlic made from Lumbu hijau and Lumbu putih Garlic Varieties** M Farras Abiyyuddin[1,] Winiati P Rahayu[2,] Nancy Dewi Yuliana[2,3] [1]Postgraduate student of Food Science, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia [2]Department of Food Science and Technology, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia [3]SouthEast Asia Food and Agricultural Science and Technology Center, Bogor Agricultural University (IPB University), Bogor, Indonesia Email wpr@apps.ipb.ac.id

	Abstract: Black garlic is a fermented product prepared by incubating the fresh garlic at 60-70 Â°C under a relative humidity of 70-80% for 30-40 days.Â Lumbu hijauÂ andÂ lumbu putihÂ are local garlic varieties cultivated in East Lombok, Indonesia, that can potentially be used as black garlic raw material. This study aimed to compare black garlic's physical and chemical characteristics fromÂ lumbu hijauÂ andÂ lumbu putih.Â The fermentation ofÂ fresh garlic was carried out spontaneously at 70 Â°C under a relative humidity of 70% for 30 days. Black garlic was analyzed, including water content, ash content, crude protein content, crude fat content, pH, and color. The results showed that the black garlic fromÂ lumbu putihÂ variety had lower water and fat content (60,42%, 0,22%) thanÂ lumbu hijauÂ (64,24%, 0,39%); higher ash and protein content (1,90%, 10,23%) thanÂ lumbu hijauÂ (1,84%, 8,16%). Black garlic fromÂ lumbu putihÂ has higher acidity (pH) (4.50) thanÂ lumbu hijauÂ (4,20). The result of the black garlic color measurement showed thatÂ lumbu putihÂ had higher values of L (brightness), a* (redness), and b* (yellowness) thanÂ lumbu hijau. It can be concluded that different garlic varieties resulted in different characteristics of black garlic. The investigation of the antibacterial activity of these black garlic is currently under progress in our lab.Keywords: black garlic, fermented garlic, proximate compotition, Lumbu hijau, Lumbu putih. No data [ID= 254]
Agriculture-39	**Composition of Snails (Gastropoda:Mollusca) in Rice Fields Area Around Baturiti Subdistrict, Bali Province.** NM Suartini[1], NW Sudatri[2], IK Putra Juliantara[1] [1]Animal Taxonomy Laboratory, Biology Study Program, Faculty of Mathematics and Natural Sciences, Udayana University-Bali [2]Animal Physiology Laboratory, Biology Study Program, Faculty of Mathematics and Natural Sciences, Udayana University-Bali corresponding email: made_suartini@unud.ac.id **Abstract: Snails can live in a variety of habitats including freshwater habitats, for example in lakes, rivers, ditches, ponds, irrigation canals and rice fields. Each habitat certainly has different environmental factors that affect the presence of snails. This research was conducted to find out which snails are found around the Baturiti sub-district, Bali, both in the rice fields and in the irrigation canals that irrigate the fields. The results of the research are expected to increase knowledge about what snails are in the fields. Sampling was carried out at three rice field locations (stations) with rice plants less than one month old, assuming the rice fields were still waterlogged so that the snails could be found. In the rice field area, samples were taken with a square size of 1mx1m and repeated three times. In the irrigation canal, samples were taken using the exploratory method. Quantitative data obtained from the calculation: species density, diversity, evenness and dominance. Qualitative data were analyzed descriptively. The results obtained in the rice fields were: Lymnaea rubiginosa, Digoniostoma truncatum, Melanoides maculata, Melanoides tuberculata, Pomacea canaliculata, and Gyraulus convexiusculus. Three species were found in the irrigation canals: Lymnaea rubiginosa, Melanoides maculata, and Melanoides tuberculata. The overall diversity index (H) is: 1.43, the evenness index (E) is 1.03 and the dominance index (D) is 0.3.** Keywords: Diversity, gastropods, snails, species
Agriculture-40	**APPLICATION OF ORGANIC FERTILIZER TO SHALLOT YIELDS IN VARIOUS MULCHES** Ir Made Sri Yuliartini,MSi Ir Luh Kartini, MSi Ir Anak Agung Ngurah Mayun Wirajaya, MM Dr Ir Ida bagus Komang Mahardika, MSi Agriculture Faculty, Warmadewa University Email : yuliartinisri@yahoo.co.id **Abstract: Shallot is a superior commodity cultivated by farmers intensively, contains substances that are beneficial to health and is used as a cooking spice.. Utilization of waste and returning to organic can improve the environment where it grows so that the availability of nutrients can increase shallot crop yields. This study aims to find the type of organic fertilizer and mulch that gives high yields for shallots. . This research was a factorial experiment with a randomized block design (RBD) consisting of two factors, namely the type of organic fertilizer (J) consisting of 3 levels, namely 30 tons ha-1 rabbit manure (J1); chicken manure 30 tons ha-1 (J2) and organic fertilizer karambitan agro 30 tons ha-1 (J3) and the various types of mulch (M) consisted of 3 levels, namely straw mulch (MJ), husk mulch (MS), and plastic mulch (MP). The research was conducted in rice fields in Sanding Village, Tampaksiring District, Gianyar Regency . The highest tuber fresh weight per clump and per hectare to be obtained in the 30 ton ha-1 rabbit manure treatment, namely 73,61 g and 7,36 tons, when compared to the lowest results in the 30 ton ha-1 chicken manure treatment ie weighing 44,90 g and 4,49 tons experienced an increase of 63,94% and 63,92%. The highest fresh weight of tubers per clump and per hectare were obtained from husk mulch, namely 67,50 g and 6,75 tons, which increased by 48,38% and 48,35%, compared to plastic mulch, namely 45,49 g and 4,55 tons.** Keywords: type of organic fertilizer, type of mulch, shallots

Agriculture-41	**EXPLORATION OF INDIGENOUS ACTINOBACTERIA FOR CONTROL OF BACTERIAL LEAF BLIGHT (Pantoea ananatis) AND INCREASED PRODUCTION OF SHALLOTS** Yulmira Yanti[11,,]Hasmiandy Hamid[1,] Nurbailis[1,] Yenny Liswarni[1,] Reza Sumarta Ilyas[2] [1]Department of Plant Protection, Agriculture Faculty, Universitas Andalas, Limau Manis, Padang, Indonesia 25163 [2]Student in Plant Protection Department, Agriculture Faculty, Universitas Andalas, Limau Manis, Padang, Indonesia 25163 Corresponding author: yy.anthie79@gmail.com, mira23@agr.unand.ac.id **Abstract: Bacterial leaf blight in shallots caused by Pantoea ananatis is an important pathogen and is difficult to control. One alternative control is by utilizing microorganisms as biological agents from the actinobacteria group. The purpose of the study was to obtain isolates of actinobacteria that have the potential to control bacterial leaf blight and increase the growth and yield of shallot plants. The research consisted of 2 stages, namely 1.) Isolation and characterization of isolates of actinobacteria and P. ananatis, 2.) Selection of actinobacteria to control P. ananatis and increase the growth and yield of shallot plants. The study's second phase was arranged in a completely randomized design consisting of 19 treatments and three replications with two experimental units. The treatment consisted of 17 actinobacterial isolates, one control, and one bactericidal with active streptomycin. The observed variables were the characteristics of actinobacteria, biosafety test, plant growth, and development of bacterial leaf blight of shallot plants. The results showed that the best isolate of actinobacteria to increase the growth of shallot plants was AT3C6P with a plant height of 50.46 cm, a leaves number of 40.66 strands, and a bulb weight of 283.00 gr. The best isolate to control bacterial leaf blight caused by P. ananatis was AS2A7A, with an incubation period of 13 days after inoculation, disease incidence of 13.90%, and disease severity 9.00%.** Keywords: actinobacteria, shallots, exploration, Pantoea ananatis
Agriculture-42	**The use of gibberellin for germination enhancement of true seed of shallot in different environmental conditions.Â** Delvi Maretta, Winda Nawfetrias, Dwi Pangesti Handayani, Rina Aprianti, Siti Himawati, Irna Surya Bidara, Djatmiko Pinardi, Jeni Hariyanti, Akhmad Jufri, Fajar Adi Marianto, Ahmad Suhendra **Abstract: Shallot production in Indonesia is currently highly recommended to use seeds as plant material known as true seed of shallot (TSS). It is considered to more efficient and effective in packaging, storage, and transportation. The use of TSS also reduces the risk of disease transmission through the bulb. Seedling is an important stage of shallot cultivation and needs proper handling. The treatment of soaking the seed in plant growth regulator solution is usually used to enhance the success of seed germination. This study aimed to determine the environmental condition and gibberellins concentration on true seed shallot germination. The research used a split-plot experimental design. The main plot was a germination condition that consisted of three environments i.e. non-controlled greenhouse (NCG), controlled greenhouse (CGH) and controlled seedling room (CSR). The subplot was gibberellin which consisted of four level concentrations (0, 50, 100, and 150 ppm). The result showed that the environment and the interaction of the treatments significantly influenced the percentage of germination on 1 week and 2 weeks after sowing. The highest percentage of germination was found in the CSR with 0 and 50 ppm of gibberellin treatment before sowing. The seedling in the CSR appeared more vigor than in other conditions of germination. Â** Keywords: controlled environment, plant growth regulator, seedling, soaking, sowing
Agriculture-43	**Chemical Composition and Antibacterial Activity of Pepper (Piper nigrum L.) Essential Oil Against Staphylococcus aureus and Escherichia coli** Sarifah Nurjanah[1,] Edy Suryadi[1,] Ahmad Thoriq[1,] Nurul Ainina[1,] Efri Mardawati[2,] Muhammad Gilang Ramadhan[3] [1]Department of Agricultural Engineering and Biosystems, Faculty of Agro-Industrial Technology, Padjadjaran University; Jl. Bandung-Sumedang Km 1, Jatinangor, Sumedang [2]Department of Agro-Industrial Technology, Faculty of Agro-Industrial Technology, Padjadjaran University; Jl. Bandung-Sumedang Km 1, Jatinangor, Sumedang [3A]groindustry Study Program, Subang State Polytechnic, Jl. Brigadier General Katamso No. 37, Subang email [1]sarifah@unpad.ac.id **Abstract: Pepper is a spice plant that contains essential oils. Some of the active ingredients in pepper essential oil are believed to have antibacterial activity. The purpose of this study was to examine the essential oil content of the seeds, stems and leaves of the pepper plant (Piper nigrum L.), as well as to examine the potential for antibacterial activity against Staphylococcus aureus and Escherichia coli bacteria. Analysis of pepper oil components used GCMS (Gas Chromatography Mass Spectroscopy) and the measurement of antibacterial activity was observed from the diameter of inhibition. The results showed that pepper seed essential oil contains 20 components, leaf essential oil contains 20**

	components while stem essential oil contains 29 components with the three largest contents being Î²-caryophyllene (37.42%), limonene (13.35%) and Î´-3-carene (11.49%) for pepper seed essential oil, Î²-caryophyllene (50.50%), Î´-3-carene (19.03%), and Î´-elemene (3.73%) for pepper leaf essential oil and Î´- elemene (19.73%), Î²-caryophyllene (12.83%) and Î±-selinene (11.93%) for pepper stem essential oil. The essential oil of the seeds, leaves and stems of the pepper plant has antibacterial activity as indicated by the high inhibition diameter values â€‹â€‹for S. aureus bacteria of 8.89 mm, 8.06 mm and 13.00 mm, and for E. coli bacteria of 1 .5 mm, 6.83 mm and 4.83 mm respectively. No data [ID= 314]
Agriculture-44	**The effect of goat urine organic fertilizer concentration to growth and yield of several potato varieties** Indra Dwipa, Aprizal Zainal, Sari Rahmadhini Department of Agronomy, Faculty of Agriculture, Andalas University, Address, Padang, West Sumatera, 25163, Indonesia E-mail: 1965indradwipa@gmail.com **Abstract: Goat urine is an alternative way to increase nutrients absorption availability for plant that contains microorganism. The research aimed to study the response of goat urine use to growth and yield of several potato varieties (Solanum tuberosum L). The study was conducted in experimental garden of Assessment Institute for Agricultural Technology of West Sumatera, Sukarami, Solok from July to October 2021. The materials were goat urine, second offspring of Granola (G2), Atlantik and Intan potato varieties. Factorial in block randomized design that consisted of 2 factors was used in the research. The first factor was goat urine with three degrees, 100 ml/ l water, 200 ml/l water, 300 ml/l water and 400 ml/l water. The second one was potato varieties, Granola, Atlantik and Intan. 12 treatments interaction was obtained and replied three times so 36 experimental unit were obtained. The obtained data interaction arrangement was analyzed using F test and followed by Duncanâ€™s New Multiple Range Test (DNMRT in 5%). The result showed that goat urine application affected plant growth, number of tubers and tuber weight per plant.** Keywordsâ€” Goat urine concentration, potato, , varieties
Agriculture-45	**APPLICATION OF NONI FRUIT (Morinda citrifolia L.) EXTRACT WITH Cu AND Zn SUPPLEMENTED IN THE RATION ON PERFORMANCE CHICKEN SENTUL OF PHASE DEVELOPER** Tuti Widjastuti, Indah Komala, Wiwin Tanwiriah Faculty of Animal Husbandry, Universitas Padjadjaran. Jl. Raya Bandung â€“ Sumedang Km 21 Sumedang 45363, West Java, Indonesia Corresponding author email: tuti.widjastuti@unpad.ac.id **Abstract: Noni fruit is a herbal plant that has the potential to be used as additional feed to replace Antibiotic Growth Promoters (AGP), and contains bioactive compounds that can increase the absorption of nutrients in the digestive tract. The study aims to determine the effect of the addition of noni extract with Cu and Zn supplemented in the ration on the performance of sentul chicken in the developer phase. The research used experiment method , used 40 female Sentul chickens aged 16 weeks and maintained until 24 weeks of age. The study used an experimental method with an experimental design used was a Completely Randomized Design (CRD). The treatments consisted of P0 = basal ration, P1= basal ration + 0.3%/kg noni fruit extract supplemented with Cu and Zn (ENFm), P2 basal ration + 0.6% /kg ENFm, P3 = basal ration + 0.9% / kg ENFm, P4 = basal ration + 1.2%/kg ENFm. Each treatment was repeated four times and each repetition consisted of 2 Sentul chickens. The results showed that the P3 treatment had an influence on body weight gain and feed conversion but did not affect feed consumption and age of sexual maturity and the addition of noni extract supplemented with Cu and Zn at the 0.9% level in the ration could the best performance on early production of chicken Sentul. This shows that ENFm products can be used as feed additives in Sentul chickens in replacing the role of an Antibiotic Growth Promoter (AGP)** Keywords: Cu and Zn, Developer, Noni fruit extract, age of sexual maturity, early production
Agriculture-46	**Identification of an arbuscular mycorrhizal fungus from Glomaceae that colonizes Tithonia diversifolia at different altitudes in the tropics** Agustian[1], Nurmaida[1], Lusi Maira[1] [1]Soil Biology Laboratory, Faculty of Agriculture, Universitas Andalas, Padang, West Sumatra, Indonesia (25163) Corresponding Author: agustian@agr.unand.ac.id **Abstract: Although Tithonia diversifolia is virtually always colonized by arbuscular mycorrhizal fungi (AMF) on a worldwide scale, not much is known about the impact of variations in altitude and soil conditions on infection rates and the dominating species affected. The purpose of this study was to examine the effects of altitude and growth conditions on the presence and infection rates of three species of arbuscular mycorrhizal fungus on Tithonia roots, specifically Glomus mosseae, Glomus intraradices, and Glomus etunicatum. Three West Sumatran localities with varying altitudes were chosen for the collection of tithonia root samples: Koto Baru in Tanah Datar District (1,096 m**

	asl), Baso in Agam Regency (915 m asl), and Kapalo Koto in Padang (102 m asl). The chemical properties and characteristics of the soil where Tithonia grows are analyzed and assessed using the criteria for assessing the chemical properties of the soil. The percentage of infection and the intensity of AMF infection were observed under a microscope with Tryphan blue staining. DNA extraction was carried out on infected roots and molecular identification using the Nested PCR technique where the amplification of universal primers ITS3/FLR2 or ITS1f/ITS4 was used as a template for amplification with specific primers 5.25/FLR4 for G. mosseae, 8.24/FLR3 G. intraradices and GETU1/GETU2 for G. etunicatum. The results showed that the differences in soil properties and characteristics at various growing locations of Tithonia did not affect the presence of G. mosseae and G. intraradices species as well as at all altitudes but vice versa for G. etunicatum species. Keywords: Altitude, Glomus, Tithonia diversifolia, identification
Agriculture-47	**ACTIVITY OF SPIKED PEPPER FRUIT(*Piper aduncum* L) EXTRACT FROM PT SEMEN PADANG'S EX-MINING LAND AGAINST *Spodoptera frugiperda* JE Smith (Lepidoptera: Noctuidae)** **EC Lina [1*] , A Aprilia [1] , Hidrayani [1] , A Andini[1]** [1]Department of Plant Protection, Faculty of Agriculture, Andalas University ,Padang [*]eka_candra@agr.unand.ac.id **Abstract: Reclamation is an effort to restore ex-mining land so that it can be used continuously by taking into account environmental conditions. Planting Betel Forest (*Piper aduncum*) is a reclamation effort that can be done. PT. Semen Padang is a research destination by utilizing ex-mining land for reclamation using the *Piper aduncum plant* which has potential as a raw material for Botanical Insecticides in controlling the Spodoptera Frugiperda Pest. This research was conducted at the Insect Bioecology Laboratory, Department of Plant Pests and Diseases and Greenhouses, Faculty of Agriculture, Andalas University, Padang. Using Completely Randomized Design (CRD) method. Using the preliminary test method and further testing the preliminary test consisted of 4 treatments of test larvae (control; concentration 0.50%; 0.75%; 1.00%) and each of these 3 replicates using the leaf dip method . Further test to obtain LC_{50} and LC_{95}. Consists of 6 treatments (0.10%, 0.17%, 0.36%, 0.56%, 0.99%, and control (0.00 %) with 6 replicates Each petridish was filled with 15 test larvae of *S. frugiperda* instar II. The variables observed were extract yield, larvae mortality, feeding inhibition activity, larvae development time and phytotoxicity *test* . *aduncum* that grows on PT Semen Padang's ex-mining land has potential as a source of raw material for vegetable insecticideswith the percentage of mortality of the test larvae showing the $LC_{50\ value}$ was 0.24% and the $LC_{95\ value}$ was 1.24%. Inhibits feeding activity, long development time for *S. frugiperda larvae* , and is not phytotoxic to corn plant leaves**
Agriculture-48	**Responses of Bali Local Rice Merah Cendanaâ and ˜Mansurâ to Salt Stress at Flowering Stage** M**ade Pharmawati[1]a, I Made Anom Sutrisna Wijaya[2]** [1]The Biology Study Program, Faculty of Mathematics and Natural Sciences, Udayana University, Jalan Raya Kampus Unud, Badung, Bali, 80361, Indonesia [2]The Agricultural and Biosystem Engineering Study Program, Faculty of Agricultural Technology, Udayana University, Jalan Raya Kampus Unud, Badung, Bali, 80361, Indonesia Corresponding author: made_pharmawati@unud.ac.id **Abstract: Salt stress is an important abiotic factor that decreases rice productivity. In Bali, there are several local rice cultivars, two of them are 'Merah Cendana' and â€˜Mansurâ€™. Characterization of Bali's local rice cultivars is needed to obtain their potential to be used in rice breeding. One of the characters is tolerant of salt stress. This study aimed to evaluate the responses of the Bali local rice 'Merah Cendana' and â€˜Mansurâ€™ cultivars to salt stress at the flowering stage. Rice seedlings were planted in pots in a factorial randomized block design with three replications. Salt treatments were given when panicles were visible. The stress levels of NaCl given were as 4dS/m (2g/L) and 6dS/m (3.38g/L) for three weeks and after that, the plants were watered with fresh water. Plant growth and yield characteristics were recorded at harvest time. Chlorophyll contents were measured from flag leaves taken at the end of the NaCl treatment. The results showed that there was no interaction between cultivars and salt treatments. The plant height, number of tillers, number of panicles, and shoot dry weight at harvesting time were higher in control plants than in treated plants for both cultivars. The total chlorophyll content was lower at plants treated with NaCl indicating that the cultivars are sensitive to salt stress. Although both cultivars are sensitive to salt stress, â€˜Mansurâ€™ had higher chlorophyll content than â€˜Merah Cendanaâ€™, which indicates better adaptation.** Keywords: Plant growth, rice, salinity, tolerance
Agriculture-49	**THE SUSTAINABLE PIG NUTRITION BY PARTIAL REPLACEMENT OF SOYBEAN MEAL WITH COPRA MEAL** **Chanuthit Thomtisang[1,] Doungporn Amornlerdpison[2,] Liang Chou Hsia[3] and Wantamas Jantasin[1]** [1]Faculty of Animal Science and Technology, Maejo University, Thailand

	[2]Centre of Excellence in Agricultural Innovation for Graduate Entrepreneur, Faculty of Fisheries Technology and Aquatic Resources, Maejo University, Thailand [3]Department of Tropical Agriculture and International Cooperation, National Pingtung University of Science and Technology, Taiwan, ROC*Corresponding author: wantamasj@gmail.com **Abstract: Sustainability of pig industry can be improved through nutrition by increase efficiency in an environmentally friendly. Alternative feed ingredients from agricultural waste or industrial by-product have attracted in sustainable pig production systems. The purpose of this study was to investigate the effects of sustainable pig nutrition by partial replacement of soybean meal with copra meal. A total of 18 crossbred (LYD) growing female pigs were reared under three dietary treatments. Treatments were 1) corn-soybean meal diet (CON), 2) white copra meal, and 3) brown copra meal. The experimental results indicated no significant difference (P>0.05) in feed intake and weight gain for pigs fed the three experimental diets. However, pigs fed the white copra meal diet tended to have better feed intake than brown copra meal treatment. At week 2 of the experimental period, pigs fed copra meal diets had better feed efficiency than CON diet.** Keyword: sustainable, pig nutrition, copra meal
Agriculture-50	**UTILIZATION OF FERMENTED COFFEE SKINS AS A SUBSTITUTIONAL FEED FOR LIVESTOCK** **I D N Sudita, Stefanus N, and Marselina N** Agricultural Science Masters Program, Warmadewa University Postgraduate Program idnsuditagmail.com **Abstract: Kintamani District, Bali Province as one of the arabica coffee producing areas that already has a Certificate of Geographical Indication (CGI) and is well developed. Coffee processing produces skin waste so far it is only wasted, so it needs to be used as animal feed through a fermentation process. Research has been conducted to determine the quality of fermented coffee skins using 4 types of probiotics, and the effect of substitution in commercial feed on the growth of pigs and local chickens. The study used a completely randomized design with 4 probiotic treatments and 4 levels of feed substitution treatment. The results showed that the type of probiotic had the highest effect on the quality of fermented coffee skin, where the use of local microorganisms (LMO) had the highest significant effect.** Keywords: fermented coffee skin, pigs, local chickens.
Agriculture-51	**Assessing Butterfly Species Composition in Universitas Andalas Campus Complex, West Sumatra** Henny Herwina[1,] Dahelmi[1,] Siti Salmah[1,] Muhammad N Janra[1,] Elpe Bibas[1,] Taufik Rahman[1] and Puspita Sari[1] [1]Biology Department, Faculty of Mathematics and Natural Science, Universitas Andalas, Jalan Kampus Unand Limau Manis Pauh Padang, West Sumatra, Indonesia 25163 [a)] Corresponding author: hennyherwina@sci.unand.ac.id **Abstract: Knowing the diversity and community of butterflies in certain area becomes crucial for monitoring environmental condition. This study intends to compile a thorough inventory of butterflies in Universitas Andalas campus complex (UACC) in Limau Manis, Padang, West Sumatera, Indonesia. The study combined the inventory data of butterflies sampled with direct collection method (insect net), indirect one (cylindrical Gause method with fermented fruit as bait) and also base on species list of visual record of butterflies during sampling period. Butterfly samplings were located at sites around the campus complex, from within the building complex which impacted by anthropogenic activities up until the forested area within the Biological Educational and Research Forest (BERF) at the eastern side of campus. The data compiled in this inventory spanned from 2011, 2020 and 2022. As result, a total of 78 species from 43 genera and five families were recorded within the UACC area. Nymphalidae was observed to have the highest number of species (64%), followed by Pieridae (16%), Papilionidae (15%) and Lycaenidae (5%). This study also recorded Troides amphrysus and Trogonoptera brokiana, two protected butterfly species in Indonesia.Keywords: Butterflies, Campus, Collection, Pollinator, Species composition** No data [ID= 666]
Agriculture-52	**AGRICULTURAL LAND USE OPTIMIZATION ON EROSION TOLERANCE LIMIT IN SINGKARAK SUMPUR RIVER FLOW REGION** **Edwin[1,] Iwan Ridwansyah[2,] Zahlul Ikhsan[1]** [1]Agroecotechnology Department, Andalas University, West Sumatera, Indonesia [2]Limnology Research Centre, The Indonesian Institute of Sciences, West Java, Indonesia Correspondence email: edwinanas@agr.unand.ac.id

	Abstract: Human needs for increasing land productivity are increasing. The Singkarak Sumpur sub-watershed, whose catchment area is on Mount Marapi, is a complex area with various land use types. However, the community has not used many conservation methods in managing their land, causing the condition of the sub-watershed to start to worry. The research objectives are to 1) obtain optimal land use scenarios by considering the erosion tolerance limits and farmers' incomes. 2) Obtain a decision-making model to suppress land degradation due to runoff and erosion and can be used as a model for improving the community's economy. The scenario of the combination of cocoa in mixed gardens and eggplant in dry/moor land (scenario 9) is very optimum (ranked one) to be applied in the Singkarak Sumpur sub-watershed. 2nd place on banana and eggplant commodities. The condition of the scenario describes that commodities that are still below the highest erosion threshold (6 commodities) and have a high farming value can be developed in the Singkarak Sumpur sub-watershed. The MCSA optimization model combined with the SWAT model can be used as a decision-making model to suppress land degradation due to runoff and erosion and can be used as a model for improving the community's economy. Keywordsâ: Optimization of land use, land suitability, SWAT model, MCSA model.
Agriculture-53	**USE TECHNIQUE OF ASPIRATOR SIMPLE FOR ARTIFICIAL INSEMINATION CEMENT MALE TO MOJOSARI DUCKS IMPROVED DUCK HACHING** [1]Tertia Delia Nova, [2]Linda Suhartati [1]Department of Livestock Production Technology, Faculty of Animal Husbandry, Andalas University [2] Animal Husbandry Study Program, Faculty of Animal Husbandry, Payakumbuh Campus, Andalas University **Abstract: This study aims use technique of aspirator simple to determine egg weight, egg index, hatching weight and egg loss of female Mojosari ducks artificially inseminated with male duck semen. This study used 30 female Mojosari ducks and 5 male ducks. This research was carried out from May to July 2022 at the Andalas University Payakumbuh campus. There were 120 eggs hatched in this study. This study used an experimental method with descriptive data analysis, namely calculating the percentage and standard deviation. The variables observed were egg weight, egg index, hatching weight and egg losses. Based on this research, it was found that the average egg weight resulting from crossing male ducks and female Mojosari ducks was 61.56 Â± 4.33 grams, egg index was 79%, hatching weight was 52.5 Â± 3.15 grams and egg loss was 9.97%. The conclusion from this study was that the results of crossing male ducks with female Mojosari ducks produced an average egg weight of male and female Mojosari ducks, namely 61.56 Â± 4.33 grams, egg index of 79%, hatching weight of 52.5 Â± 3 .15 grams and egg loss is 9.97%.** Keywords: Aspirator simple, Egg weight, male ducks, female Mojosari ducks, egg loss
Agriculture-54	**Rainfall Erosivity Estimation of Cupak Tangah area using 5-minute rainfall data** Mohammad Agita Tjandra Agricultural and Biosystems Engineering Dept.Andalas UniversityPadang, Indonesia Email mohagita@ae.unand.ac.id **Abstract: This The rainfall erosivity, R of an area is required in evaluating soil conservation measures. Erosivity is influenced by the amount and intensity of precipitation. Erosivity values are difficult to obtain because not many weather stations collect rainfall data at short intervals needed to determine rainfall intensity. The purpose of this study was to evaluate the estimated R value for the Cupak Tangah area in Pauh, Padang, West Sumatra, Indonesia using rainfall data collected within 5 minutes. With a better estimation of the R value, soil loss can be predicted more precisely. Rainfall events with the same amount of precipitation can have different R values due to different intensity values.** Keywordsâ€"Rainfall Erosivity, erosion, soil conservation, soil loss, rainfall intensity
Agriculture-55	**EFFECT OF CONTAMINATION FROM GLYPHOSATE ON CHEMICAL PROPERTIES OF INCEPTISOLS AMELIORATED WITH FORMULATION OF SUB-BITUMINOUS COAL AND RICE HUSK BIOCHAR** **HerviyantiHerviyanti[1*], Amsar Maulana[2], Mimien Harianti[1], Arestha Leo Lita[3], Teguh Budi Prasetyo[1], Rezha Tri Khurnianto[4], Pitri Juwita[4], Syafrimen Yasin[1], Ridho Ryswaldi[5]** *[1]Department of Soil Science and Land Resource, Agriculture Faculty, Andalas University, Limau Manis, Padang City, 25164, Indonesia* *[2]Doctoral Student of Agricultural Science, Postgraduate of Andalas University, Limau Manis, Padang City, 25164, Indonesia* *[3]Magister Student of Soil Science, Postgraduate of Andalas University, Limau Manis, Padang City, 25164, Indonesia*

	[4]*Bachelor Student of Soil Science, Agriculture Faculty, Andalas University, Limau Manis, Padang City, 25164, Indonesia* [5]*Departement of Management, Economic and Business Faculty, Andalas University, Limau Manis, Padang City, 25164, Indonesia* *Email: herviyanti@agr.unand.ac.id **Abstract. The most popular herbicide used recently is glyphosate [N-(phosphonomethyl) glycine]. It is necessary to understand the interaction between glyphosate and soil for right application and environmental safety evaluation. The objective of this research was to study the effect of glyphosate contamination on the chemical properties of Inceptisols ameliorated with formulation of sub-bituminous coal (SC) and rice husk biochar (RH_B). This study used a completely randomized design (CRD) with 5 treatments and 3 replications, namely A = Inceptisols; B = Inceptisols+100 mg l^{-1} Glyphosate; and C = Inceptisols+FA (75% SC+25% RH_B)+100 mg l^{-1} Glyphosate; D = Inceptisols+FB (50% SC+50% RH_B) +100 mg l^{-1} Glyphosate and E = Inceptisols+FC (25% SC+75% RH_B)+100 mg l^{-1} Glyphosate. The results showed that contamination from glyphosate had significant effect on surface change (pH, EC, Mineral, SOM and CEC) and nutrient (total N and available P) of Inceptisols ameliorated with formulation of SC and RH_B. Application of FA can be used as an alternative ameliorant to improve chemical properties of Inceptisols (e.g. SOM of 4.67%; CEC of 12.79 cmol(+) kg^{-1}; 0.13% N and 7.77 ppm P_2O_5, compared to the control) and glyphosate removal efficiency of 99.97%. The correlation between glyphosate residues had no significant interaction with the chemical properties of Inceptisols ameliorated with formulation of SC and RH_B, but there was a positive correlation with Mineral (0.480)>pH PZC (0.298)>EC (0.061)>K (0. 030)>Ca-exch (0.015) and negative correlation with SOM (-0.480)>CEC (-0.038)>pH H_2O (-0.200)>KCl pH (-0.145)>Available P (-0.132)>Total N (-0.106)>Mg-exch (-0.066).**

Keywords: Contamination, Glyphosate, Inceptisols, Rice husk biochar, Sub-bituminous coal

Agriculture-56	**AVAILABILITY OF PHOSPHORUS ON EX-GOLD MINING SOIL AMELIORATED WITH SUB-BITUMINOUS COAL AND ACTIVATION OF SUB-BITUMINOUS COAL WITH NaOH** **Amsar Maulana[1], Mimien Harianti[2], Teguh Budi Prasetyo[2], Herviyanti Herviyanti[2*]** [1]*Doctoral StudentAgricultural Science, Postgraduate of Andalas University, Limau Manis, Padang City, 25164, Indonesia* [2]*Department of Soil Science and Land Resource, Agriculture Faculty, Andalas University, Limau Manis, Padang City, 25164, Indonesia* *Email corresponding: herviyanti@agr.unand.ac.id **Abstract: Mercury (Hg) contamination of ex-gold mining soils has been of particular concern in affecting the availability of nutrients in the soil such as Phosphorus (P). The interaction of Hg with P in soil needs to be studied quantitatively through amelioration technology that is expected to control Hg in the soil system. The purpose of this research is to study and analyze the correlation of Hg and P in ex-gold mining soil ameliorated with sub-bituminous coal and the activation of sub-bituminous coal with NaOH. The experimental design used in this study was a completely randomized design (CRD) with three (3) replications. The treatment I (Sub-bituminous coal) and II [activation of Sub-bituminous coal with 10% NaOH) was implemented in the pot with equivalent doses, respectively: (A) 0 [0g 100g^{-1} soil], (B) 10 [0.5g 100g^{-1} soil], (C) 20 [1g 100g^{-1} soil], (D) 30 [1.5g 100g^{-1} soil], and (E) 40 t ha^{-1} [2.0g 100g^{-1} soil]. The correlation and equation of linear regression between total Hg with Available P on ex-gold mining soil ameliorated with sub-bituminous coal [r = -0.922** and Hg = -0.206 (PO_4^-) + 7.0068; R^2 = 0.9052] and activation of sub-bituminous coal with 10% NaOH [r = -0.862** and Hg = -0.0265 (PO_4^-) + 6.2774; R^2 = 0.7851]. Amelioration technology on ex-gold mining soil with sub-bituminous coal and activation of sub-bituminous coal with 10% NaOH can reduce the total Hg by 2.50 and 2.84 mg kg^{-1} and also increase the Available P by 11.88 and 76.91 ppm PO_4^- respectively, compared to control.** Keywords: Ex-gold mining soil, Phosphorus, NaOH, Mercury, Sub-bituminous coal.

Food

Food-1	**Extraction of Bioactive Components of Cacao Fruit Peel (Theobroma cacao, L.) With Solvent Concentration Optimization, Temperature and Extraction Time** Aisman, Novelina, dan Fadila Novita Technology of Agricultural Product, Faculty of Agricultural Technology, Andalas University, Kampus Limau Manis Manis, Padang, Indonesia 25163 Email: aisman@ae.unand.ac.id **Abstract: This study aims to determine the optimum conditions of solvent concentration, temperature and length of time for extracting cocoa pod skin from the resulting bioactive components. The research used surface response method (RSM) with Central Composite Design (CCD). The extraction process was carried out using a combination of 53.2% solvent**

	concentration; 60%; 70%; 80%; 86.8%; temperature (â„*f*) 36.6; 40; 45; 50; 53.4 and extraction time (minutes) 3.2; 10; 20; 30; 36,8. The response parameters observed were yield and total polyphenols. The optimum product selected from the optimization results was analyzed to determine antioxidant activity, tannin content and phytochemical tests. The results of the analysis using RSM showed that the linear model was chosen to analyze the yield response and the total polyphenols were indicated by the equation; Y=29.56-1.49X1+0.82X2+4.90X3 for yield response, and Y=201.41+75.25X1+21.32X2+2.35X3 for total polyphenol response. The process variables for the extraction of bioactive components selected from the optimization process were 80% solvent concentration, 50â„*f* temperature and 30 minutes extraction time with a desirability value of 0.681. These variables resulted in an extract yield of 39.45% and a total polyphenol of 221.91 mg GAE/g. Analysis of the optimum bioactive components of the product obtained antioxidant activity of 82.88%, tannin content of 1.7% and positive phytochemical test results containing polyphenols, tannins, flavonoids, alkaloids, triterpenoids, saponins and coumarins. No data [ID= 31]
Food-2	**Consumer Preferences In Purchasing Packaged Meatball Products A Case Study of Wonokromo Traditional Market, Surabaya** Syarif Imam Hidayat, Pawana Nur Indah Agribusiness Department, Universitas Pembangunan Nasional â€œVeteranâ€ • Jawa Timur Surabaya, Indonesia Email pawana_ni@upnjatim.ac.id **Abstract: Increased consumption of meat consumers supports consumer patterns including consumption of processed meat. The purposes of this study are (1) Identifying consumer characteristics of several packaged meatball products in the study area (2) Analyzing consumer ratings based on the performance of the packaged meatball attributes. Site selection is done intentionally in January 2017. With Accidental Sampling. Data processing in this study uses descriptive analysis, and Important and Performance Analysis (IPA). The results of the analysis of the characteristics of respondents are mostly female, Student / Muslim Student, aged between 17-24 years with an income of Rp. 1,000,001 - Rp. 3,000,000, their last education were high school / vocational school. Based on the calculation of the IPA spread over several quadrants. Quadrant II for Yikko meatballs, KJM "Kijang Mas" and AJ namely Taste, Elasticity and Price. In quadrant III namely Yikko meatballs such as halal certification and composition. In quadrant IV, the Quality for Yikko products and Halal Certification, Composition and quality for KJM "Kijang Mas" products and Halal Certification, Composition and Quality for AJ Products.** Keywords: Packaged beef meatball, Importance Value
Food-3	**Quality Characteristics of Surimi Fish Kamaboko Glossogobius giuris** Yuszda K Salimi[1,] Rahyuni Domili[2,] Rieny Sulistijowati[2,] Hamid Majelis[1] [1]Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Negeri Gorontalo, Gorontalo 96128, Indonesia [2]Department of Fisheries Product Technology, Faculty of Fisheries and Marine Sciences, Universitas Negeri Gorontalo, Gorontalo 96128, Indonesia **Abstract: The research of Quality Characteristics of Surimi Fish Kamaboko Glossogobius giuris was conducted with aim: 1). Analyze the effect of different washing frequency of the characteristics of surimi fish Glossogobius giuris 2). Analyze the characteristics / quality kamaboko of surimi fish Glossogobius giuris. This study used a method of treatment Experiment with different washing frequency factor are 1,2,3, and 4 of the physical and chemical parameters surimi, and descriptive methods for the characteristics of the quality of surimi fish kamaboko Glossogobius giuris. Data were analyzed using analysis of variance completely randomized design (CRD). Based on the chemical and physical parameters the twice washing is the best treatment that will be applied to make kamaboko product, the test result for gel strength value is 694.81 grams / cm, 63.33% whiteness, 13.38% protein soluble salts, 25.96% WHC, 7.08 pH, fold test 6,5, and the bite test 7.0. The results of the organoleptic hedonic test from kamaboko of surimi fish Glossogobius giuris are sighting : 6.83, color : 6,83, odors : 6,66, texture : 6,50 and flavor : 6,00. The proximate test analysis proteins : 16.32%, fat : 0.28%, water content : 76.03%, ash content : 0.79% and % carbohydrates : 6.58. The results of the microbiological test showed ALT is 0,68x105 colonies / g, E. coli is** Keywords: Surimi, Washing Frequency , Kamaboko, Glossogobius giuris
Food-4	**Callus Development of Curcuma mangga in Several Combinations of Benzylaminopurine and Naphthalene Acetic Acid Concentration** Rustikawati[1,] Gita Bonita Turnip[1,] Catur Herison[1,] Marlin[1,] Atra Romeida[1,] Reny Herawati[1] and Entang Inoriah[1] [1]Dept Crop Production, Faculty of Agriculture, University of Bengkulu Jln W.R. Supratman, Kandang Limun, Bengkulu, 38371, Indonesia email rustikawati@unib.ac.id **Abstract: Well-established callus propagation methods are necessary both in the production of secondary metabolites in in vitro culture and provide prerequisites for genetic transformation. A systematic approach was taken to obtain a fast-growingÂ Curcuma manggaÂ Val (C. mangga) callus culture. The development ofÂ C. manggaÂ callus was evaluated on an**

	MS medium enriched with a 6-benzyl amino purine (BAP) and naphthalene acetic acid (NAA). The results showed that the callus ofÂ C. manggaÂ developed on MS medium without the addition of plant growth regulators. The addition of BAP and NAA significantly increased callus weight and diameter up to 28 weeks of the incubation period. The highest percentage increase in callus size was found in the 0 ppm BAP and 0.5 ppm NAA treatments. There was an interaction between BAP and NAA concentrations on the callus weight variable. The combination of 2 ppm BAP and 0.5 ppm NAA produced a callus with the highest callus weight. Increasing the concentration of BAP up to 6 ppm tends to reduce callus diameter and weight. Likewise, an increase in NAA concentration to 1 ppm tends to decrease the diameter and fresh weight of the callus. Keywords: callus, mango ginger, 6-benzylaminopurine, naphthalene acetic acid.
Food-5	**The Effect of nanocoating-konjac incorporation thymol oil on shelf-life of Siamese orange** Luh Suriati, I Gede Pasek Mangku, Ni Luh Putu Sulis Dewi Damayanti, Anak Agung Sagung Manik Cindrawati, Ngakan Putu Gede Satria Kesumayasa, I Wayan Widiantara Putra **Abstract: Siamese kintamani oranges are very popular currently, in addition to their good taste, they also contain phenolic bioactive compounds, carotenoids, vitamins, minerals and fiber which are good for health. The downside is that the quality of Siamese kintamani oranges quickly decreases. Damage from decay by microbes results in high post-harvest shrinkage of Siamese orange. One of the steps that can be taken to maintain the quality of Siamese kintamani oranges is the application of coatings. Nanocoating is a thin nano-sized layer that can be incorporated with active additives such as antioxidants, antisenescence and antimicrobials. The effectiveness of nanocoating-konjac on the surface of Siamese kintamani citrus fruits can be improved by the addition of natural additives of thymol, on nanocoating-konjac will serve as a protector of coated materials from environmental influences. The purpose of this study was to determine the influence of the natural antimicrobial ingredient thymol on the nanocoating-konjac formula to maintain the quality of Siamese citrus kintamani. This study used a complete randomized design of 2 factors. Factor I thymol concentration (5, 10 and 15%), factor II duration of immersion in nanocoating-konjac solution (15, 30, and 45 min). Variables observed included shrinkage in weight, color, number of damaged fruits, moisture content, pH, vitamin C levels, and total dissolved solids.** Keywords: nanocoating, konjac glucomannan, shelf-life, Siamese orange, postharvest handling
Food-6	**CHARACTERISTICS OF THE CHEMICAL PROPERTIES OF PALM JUICE (Arengga Pinnata Merr) WITH THE ADDITION OF CHITOSAN COCONUT CRAB SHELL** Hamidin Rasulu[1],Janiah Husen[1], Nurjannah Albaar[1] [1]Departement of Agricultural Products Technology, Faculty of Agriculture, Universitas Khairun, Ternate, Indonesia Coressponden Author: hamidinrasulu@yahoo.com **Abstract: Palm is one of the plants that are almost found throughout Indonesia. One of them is North Maluku province, the sugar-producing areas in North Maluku are Central Oba, Kao, Tobelo, North Oba, Buli, Galela, Morotai, and Bacan Districts. Based on experience, tapping palm sap in Oba Tengah District, Tidore Islands City, farmers or craftsmen use bar soap that is sliced â€‹â€‹Â±2 g to inhibit sap fermentation during the 13-hour tapping process to maintain pH, because it is wet, therefore, one alternative to replace the use of bar soap is to use chitosan made from coconut crab shells. Chitosan is a chitin derivative formed through the deacetylation process, which can be used as a natural preservative that is effective and safe, easy to decompose, non-toxic, has antibacterial activity, and has no negative impact on human health. This research has several stages, namely the first stage of tapping palm sap, the second stage of making brown sugar. This study used a completely randomized design method with one factor consisting of 5 treatments with a concentration of crab shell chitosan. The formulations were A0 (without chitosan), A1 (chitosan 0.2 g), A2 (chitosan 0.4 g), A3 (chitosan 0.6 g) and A4 (chitosan 0.8 g). Parameters observed were physical, chemical, and organoleptic test. This study obtained brown sugar from the process of tapping sap with the addition of chitosan, yielding a yield value of 9.32%-14.63%, color values â€‹â€‹include L* 48.51% - 55.16%, a* 1.52% - 6.27 %, b* 11.44% -15.33%, pH 5.00%-6.80%, sucrose brix 14.13%-1703%, dissolved solids 0.70%-1.71%, with the best formulation found in the A4 treatment.** Keywords: Preservative, Brown Sugar, Crab Shell Chitosan
Food-7	**PERFORMANCE AND CARCASS CHARACTERISTICS OF MALE QUAILS GIVEN FERMENTED DRAGON FRUIT PEEL THROUGHT N DRINKING WATER** GAMKristina Dewi[1], Wirapartha[1] And Apni TUmiarti[1] [1]Laboratorium of Poultry Science, Faculty of Animal Science, Udayana UniversityEmail: kristinadewi@unud.ac.id **Abstract: The aim of this research was to study performance and carcass characteristics of male quails given fermented dragon fruit peel throught drinking water. The research design used a completely randomized design (CRD) using 180 of male quail 6-16 week aged , which were divided into 3 treatments with 6 replications and 10 birds per unit replication. The treatments were drinking water without fermented dragon fruit peel juice (FDFJ0), drinking water plus 4% and 6% fermented dragon fruit peel juice (FDFJ4 and FDFJ6). The variables was include performance and carcass characteristics of male quails. The data will be statistical analysis using variance (ANOVA) with SPSS For Windows version 23 software. If**

	the results are significantly different at the level. Keywords: Ethanol Extract, GCMS, Spices
Food-10	**The Effect of Integrated Fertilizer on Land Efficiency and Functional Food Crops Quality of Sweet Corn with Vegetable Soybean by Intercropping System** Maria Theresia Darini[1], Evi Setiawati[1], Sri Widata[1] and Ari Astuti[2] [1] Program study Agroteknology Agriculture Faculty of University Sarjanawiyata Tamansiswa Yogyakarta [2] Program study Agribusinis Agriculture Faculty of University Sarjanawiyata Tamansiswa Yogyakarta Corresponding Author e-mail. darini@ustjogja.ac.id **Abstract: The research aims to increase land efficiency and functional food crops quality of sweet corn and vegetable soybean by the intercropping system and integrated fertilizers. The research was carried out from June to August 2022 in the Giwangan village of Umbulhardjo Yogyakarta Indonesia. The study was arranged in factorial Randomized Complete Block Design with three replications. The first factor was the sources of organic fertilizers consisting of three sources (chicken, cow manure, and municipal), the second factor was dosages of NPK fertilizers (200, 300, and 400 kg ha-1) and two controls, which obtained 33 unit of experimental plots. The observation of variables land efficiency and quality of sweet corn and vegetable soybean crop. Research result by statistical analysis of variance at a significance level of 5% followed by Duncanâ€™s Multiple Range Test at a significance of 5%. The conclusion showed variables of Land Equality Ratio, Competition Index, the content of vitamin C, Pro-vitamin A, and Sweetness Level of sweet corn and vegetable soybean higher obtained in the combination of chicken manure and NPK dosages fertilizer.** Keywords: Municipal compost, pro-vitamin A, sweetness level, % pod 2-3 seed, row number of seed.
Food-11	**Jamu : A Combination of Various Spices as Feed Additive for Bali Cattle Experiencing Long Trip Stress** SAA Tani Department of Animal Production , Faculty of Animal Science, Jambi University Mendalo Darat, MuaroJambi, 36361, Indonesia Email: sriarnita.1963@gmail.com **Abstract: In general, Bali cattle as feeder cattle to fulfill the needs of cattle in Jambi Province are imported from Kupang (NTT). Cattle usually experience a long transportation; this condition causes body weight loss of Â±10-20%. If recovery is not done, it will cause losses for farmers. Giving herbs (â€œJamuâ€ •) from a combination of various spices in concentrate is a solution to overcome this problem. The objective of the study was to determine the optimum level of herbal (â€˜Jamuâ€ •) in concentrate to increase daily body weight gain of Bali cattle. Twelve male Bali cattle aged 2.5-3.5 years with an average weight of Â± 250 kg were designed in a Randomized Block Design (RBD) with 4 treatments in 3 body weight groups as replicates. Treatments consisted of: J0 (Kumpai grass + concentrate without â€œJamuâ€ • , J1 (Kumpai grass + concentrate + 100 ml â€œJamuâ€ •), J2 (Kumpai grass + concentrate + 150 ml â€œJamuâ€ •), and J3 (Kumpai grass + concentrate + 200 ml â€œJamuâ€ •). The observed variables were ration dry matter intake (DMI), ration protein consumption (RPc), daily body weight gain (ADG) and ration utilization efficiency (EF). The results showed that the provision of herbal (â€œJamuâ€ •) in concentrates up to the level of 200 ml can increase ration dry matter intake (DMI), ration protein consumption (RPc), average daily gain (ADG) and ration efficiency (EF).** Keywords: recovery, transportation, herbs, concentrate, body weight.
Food-12	**A FORMULATION OF MANGO RIPENESS INDICATOR MADE FROM TAPIOCA AND AMMONIUM MOLYBDATE** **Endang Warsiki[1], Adzimatinur Asfiani[1], Chananpat Rardniyom[2]** [1]Department of Agroindustrial Technology, Faculty of Agricultural Engineering and Technology, IPB University, Fateta Building, Dramaga Campus of IPB, Bogor 16002, Indonesia [2]Department of Food Sciences and Technology, Faculty of Agro-industry and Engineering, Maejo University, Chiang Mai-Phrao Road, Nong Han Subdistric, San Sai District, Chiang Mai Province 50290, Thailand Email endangwarsiki@apps.ipb.ac.[id] **Abstract: Tapioca is natural polysaccharides which has abundant availability, in-expensive and easy to get. Tapioca has porous characteristic and might suitable in its application as an absorbent. In this research, tapioca was used as a matrix for carrier the indicator dye solution and further, it would be molded into a tablet to produce smart indicator to detect the ripeness of mango by changing its color. The dye solution was made from ammonium molybdate (KMnO4) and hydrogen peroxide (H2O2). This research was aimed to formulate the composition of tablet indicator and measure color change of the indicator by apply it a packaged of un-ripe mango. The formulation was carried out by some treatments. They were gelatinized and un-gelatinized tapioca, addition of sorbitol and glycerin in two different concentrations of 1 mL and 0.25 mL, and with and without binder of calcium chloride CaCl2. The results showed that either gelatinized and un-gelatinized tapioca gave the same color change in which yellow while the mango was unripe and turn to blue after 3 days in a packaged of mango.**

	Furthermore, the addition of glycerin/sorbitol in the formulation had resulted in blue color of the tablet after three days of storage while the mango was still unripe. Addition of CaCl2 affected on speedind up the tablet change color compare to the indicator formulation without adding the CaCl2. The best performance of the tablet indicator which gave a significant color change was made by addition of 0.25 mL glycerin/sorbitol without gelatinization process and without the addition of CaCl2. Key words: smart packaging, ripeness indicator, color change, tapioca
Food-13	**Food Security Status of Mud Crab Fishermen (Scylla serrata) in Bengkulu Province, Indonesia** Nusril[1,] Indra Cahyadinata[1,] Medi Nopiana[2] [1]Department Socio Economic of Agriculture, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia [2]Department Management, Faculty of Economic, University of Singaperbangsa Karawang, Indonesia Coresponding author : nusril.unib@gmail.com **Abstract: The concept of household food security is reflected by the ability to gain access to sufficient food for a healthy and productive life and lasts from time to time. Household food security will be disrupted when there is an economic crisis (household purchasing power decreases), production levels and availability are limited. This study aims to examine the food security status of mud crab fishing households in Bengkulu Province. To achieve this goal, sampling of 70 mud crab fishermen spread across 7 regencies/cities in Bengkulu Province. The analytical tool used is a food security index based on availability, affordability and utilization of food. The results of the analysis showed that the food security status of mud crab fishermen in Bengkulu Province is enough category with an index of 33.34 â€“ 66.66. Food security can be improved by increasing physical, economic and social affordability of food access.** Keywords : food security, mud crabs, availability, affordability, utilization
Food-14	**GONAD PROTECTIVE EFFECT OF PLETEKAN (Ruellia tuberosa L.) LEAVES EXTRACT IN DIABETIC RATS (Rattus norvegicus)** N I Wiratmini[1,] A A S A Sukmaningsih[1,] A A I M Padmisuari,[2] N W S Antari,[2] [1] Department of Biology, Faculty of Mathematics and Natural Sciences Udayana University, Bukit Jimbaran Campus, Badung, Bali, Indonesia. [2] Institute of Technology and Health Bali, Indonesia Corresponding author: wiratminiintan@unud.ac.id **Abstract: Untreated diabetes mellitus (DM) leads to various multi-organ dysfunction, including the male reproductive system. DM has been known to elicit oxidative stress in testis as well as caudal epididymis, thus exposing the sperm storage to this noxious state. To this date, several studies have been conducted on how to utilize secondary metabolites extracted from plants to decrease blood glucose level in patients with DM. This study aimed to explore the protective effect of pletekan (Ruellia tuberosa L.) leaves extract (RLE) towards male reproductive organs in alloxan-induced male rats. This study used a completely randomized design with sample size of thirty male rats. The animals were assigned into five experimental groups (six repetitions each): negative control/K- (NaCl 0.9% only), positive control/K+ (120 mg/kgBW of alloxan and NaCl 0.9%), P1 (120 mg/kgBW of alloxan and 1.6 mg/kgBW of RLE), P2 (120 mg/kgBW of alloxan and 3.2 mg/kgBW of RLE), and P3 (120 mg/kgBW of alloxan and 6.4 mg/kgBW of RLE). Treatment was given every day orally for 28 days. In conclusion, 6.4 mg/kgBW of pletekan (Ruellia tuberosa L.) leaves extract was able to preserve the weight of both testis and caudal epididymis, as well as the sperm count of male rats.** Key words : epididymis, rat, Ruellia tuberosa L, diabetic
Food-15	**Utilization of herbal ingredients in tilapia nursery traditional system** I G P G R Yudana[1,] A Fauziah[1,] [1] Sidoarjo Marine and Fisheries Polytechnic, Sidoarjo, Indonesia Corresponding author: anna.apsidoarjo@gmail.com **Abstract: The purpose of this study was was to conduct a technical analysis on Tilapia rearing activities that utilize herbal ingredients including cultivation systems, preparation, fry stocking, feed management, water quality management, harvesting and post-harvesting in traditional sistem nursery, Sumberdodol village, East Java, Indonesia. Data analysis using anova statistic analysis. In this study, the pond preparation process included washing ponds, drying for 3 days, liming at a dose of 30 ppm on the walls and bottom of the pond, filling water with a height of 80 cm and stocking with 300 ppm of Organic Fertilizer. Tilapia acclimatized by adding 1 ml of probiotic. The stocking density is 80 larvae/m2Â with a total stocking of 5,000 individuals. The feed was fermented for 3 days with the addition of Liquid Organic Fertilizer. Feed management uses an acceleration system, which is blind feeding 24 hours non-stop. The results of water quality monitoring obtained are temperature 26ËšC â€“ 28ËšC, DO 3 â€“ 5 mg/l, pH 7.0 â€“ 7.1. Water quality control is carried out by spreading water**

	organic fertilizer at a dose of 50 ppm. Herbal ingredients from white turmerics, yelow turmeric, temulawak and ginger mixing in pellets products produced FCR 1.5, SGR 10.54 %, Tilapia nursery tonnage 100 kg/pond, and the survival rate 87.53%. Key words: herbal ingredients, growth_rate, survival_rate, tilapia
Food-16	**The Contribution of Salicylic Acid to the Growth of Brown Rice in Several Levels of Salinity** Wan Arfiani Barus[1], Aisar Novita[1] and Yoga Prasetyo[1] [1]Universitas Muhammadiyah Sumatera Utara, Jalan Kapten Mukhtar Basri No. 3 Medan, Indonesia, 20238. corresponding Author: wanarfianibarus@umsu.ac.id **Abstract: This research was conducted in the screen house of the L2DIKTI experimental garden, Percut Sei Tuan District, Deli Serdang Regency from February to May 2022. The aim of this study was to determine the contribution of salicylic acid to the growth of pamelan variety red rice at several levels of salinity. This study used a randomized block design with three replications and two treatment factors. The first factor was the concentration of salicylic acid, consisting of 0 (A0), 25 mg/L (A1), 50 mg/L (A2) and 75 mg/L (A3) in several levels of salinity, namely: < 4 dS/m2 (S0) , 4-5 dS/m2 (S1) and 6-7 dS/m2 (S3). The results showed that salicylic acid contributed to the growth of brown rice with several levels of salinity. The administration of salicylic acid had a significant effect on plant height, number of leaves, number of total tillers and leaf area, but did not have a significant effect on the amount of chlorophyll and the number of stomata. In general, the higher the level of salinity, the more disturbed the growth of brown rice. Giving salicylic acid has a positive effect on the growth of brown rice. Furthermore, there is an interaction between the concentration of salicylic acid and the level of salinity. The highest concentration of salicylic acid (A3) had a positive effect on the growth of brown rice with the highest salinity level (S3).** Keywords: Brown Rice - Salinity - Salicylic Acid
Food-17	**Ground Ant Species Community of and Their Roles as Predator of Coffee Berry Borer (Hypothenemus hampei) on Gayo Arabica Coffee Plantations at Different Altitudes.** J Jauharlina[1], H Husni[1], TA Febrian[1], I Destriany[1], NA Husna[1] [1] Departement of Plant Protection, Faculty of Agriculture, Universitas Syiah Kuala, banda Aceh 23123 Corresponding author: ljauharlina@usk.ac.id **Abstract: Several ant species have been recorded to play an important role as predators of CBB in coffee plantations in coffee-producing countries. However, few similar studies have been conducted on coffee plantations in Indonesia. This study investigated the ground ant species community and their ecological role as predators of Coffee berry borer (CBB) s in arabica coffee plantations in Aceh Tengah Regency, Aceh Province, Sumatra, Indonesia, grown at different altitudes. The altitudes were categorized as low (900â€“1100 masl), medium (1100â€“1300 masl), and high (higher than 1300 masl). Two coffee plantations for each altitude were used as sampling plots (at least 1 Ha in size). The ground ants were collected using ten pitfall traps placed on the ground in between coffee trees in each plot at different altitudes. The pitfall traps were placed for 12 hours in the six sampling plots. The collected ants were identified morphologically and counted to determine their abundance. We recorded 13 genera of ants from 5 subfamilies from all plots observed. There were 1174 individual ants found at low altitudes, 462 individuals at medium, and 126 individuals at high altitudes of coffee plantations. The ant species found had different ecological roles, including predator, seed harvester, scavenger, and aphid-tending ant. The ants belonging to genera Pheidole dan Crematogaster were the potential predators of CBB in coffee plantations. These predatory ants can be used as biological control agents; therefore, their presence in coffee plantations should be enhanced and conserved.** Keywords: natural enemies, predation, biological control, ecosystem service, conservation
Food-18	**Egg Production Performance of G0 Kokok Balenggek Chicken : Formation of Superior Local Chicken in West Sumatra** Husmainia, Linda Suhartatia, Rusfidraaa Faculty of Animal Science Andalas University, West Sumatra, Indonesia *email: husmaini@ansci.unand.ac.id **Abstract: This study aims to determine the egg production performance of the female Basic Generation Kokok Balenggek Chicken (AKB-G0) in forming Superior Local Chickens in West Sumatra. Egg production performance is used as the basis for selecting AKB G0 broodstock. The study used 40 hens. The chicken comes from Tigo Lurah, Solok Regency, and Solok City, an AKB in-situ area. Chickens have been selected based on heredity (offspring of AKB), body weight, and sexual maturity. Chickens are kept intensively in battery cages. The ration given is a commercial ration for native chickens. Each brood's egg production performance was recorded from 2 October 2022 to 18 March 2023. The parameters observed were Hen House Production (HHP), egg weight, and total egg mash for each parent. The results showed that the number of AKB G0 brood eggs for six months was 1912 eggs, and HHP 1st to sixth months were 30.5%, 19.4%, 22.8%, 29.3%, 38.9%, and 29.8%. The total weight of the eggs was 80201.9 grams, and the egg mash was 47.8 eggs/head or 2005.05 grams/head. Egg production data per brood consists of 20% (2-13% production), 35% (20-30% production), 28% (30-40% production), 13% (41-50% production), and 5% (producing 52-54%). This study concludes that the egg production of AKB G0 is still relatively low and will be increased by the selection, namely AKB G0 parents who produce 2-13% will be culled, those who**

	produce 20-30% will be observed, and above 30-54% will be kept as broodstock. to produce AKB G1. Keywords: Kokok Balenggek Chicken, Performance, Selection, Egg Production, Egg Weight
Food-19	**Mutagenesis of Soybean var.Kipas Putih** Zuyasna Agroteknologi, Fakulty of Agriculture, Syiah Kuala University **Abstract: Soybean is one of the essential food crops in Indonesia after rice and corn. Soybean needs are still difficult to obtain due to the low productivity of soybeans in Indonesia. There are still obstacles in soybean production in Indonesia such as the availability of superior varieties adaptable to diverse agro-ecosystem environments and the farmers do not apply the cultivation technology optimally. Aceh Province has Kipas Putih soybean, which was released as a national variety on November 3, 1992. The Kipas Putih variety has superior characters, such as resistance to fall, tolerance to leaf rust disease, and adaptability in both dry land and rainfed rice fields. However, this variety is less desirable, because its production is low and has smaller seeds than other national varieties such as var. Biosoy. The average weight of 100 Kipas Putih soybean seeds is 12 grams with an average yield of 1.69 t/ha of dry weight and contains 35% protein and 20.5% fat. The research was conducted since 2013 by mutating Kipas Putih soybeans using gamma-ray radiation in Patir Batan, Pasar Minggu â€“ Jakarta. Through mass selection and line selection, 5 mutant lines of generation 8 (M8) have been obtained, namely B4, B7, B13, B18, and B22. The lines which have a weight of 100 grains between 14 - 18 g, have the potential to produce high yields of 1.6 - 2.1 ton/ha and protein content of 40 - 48%, which exceeds the character of the parent var. Kipas Putih. We hope that that these selected lines can develop into new superior varieties, which are suitable for several locations in Indonesia and are in demand by farmers and the community.** Keywords: large seeds, soybean mutant, new high yielding varieties
Food-20	**Antioxidant and Toxicity Activity of Leaf Extract Garuga Floribunda. Decne** Netty Ino Ischak [1,] Yuszda KSalimi[1,] La Ode Aman[1,]Vellia Chantika Potabuga[2,] Rahmi Hulopi[2] [1]Department of Chemistry, State University of Gorontalo [2]Students of the Chemistry study program, State University of Gorontalo Corespondensi : nettyischak@gmail.com **Abstract: Garuga floribunda (GF.Decne) is empirically used by the community as a medicinal plant for cough therapy, lung infections, and as an antioxidant. The aim of this study was to identify and examine the profile of metabolites and antioxidant and toxicity activity. Antioxidant activity the DPPH method, and toxicity tests using by BSLT method. The phytochemical test results of the methanol extract and ethyl acetate fraction showed positive for the presence of flavonoids, tannins, saponins and triterpenoids, while the n-hexane fraction was positive of alkaloids and steroids. The results of the toxicity test of the methanol extract, yield LC50 value = 191.55 ppm, the ethyl acetate fraction LC50 value = 179.09 ppm (strong), and for the n-hexane fraction LC50 value = 1450.68 ppm (weak). The antioxidant activity of the n-hexane fraction extract IC50 value of 131.57 ppm (moderate activity), the ethyl acetate fraction IC50 of 95.61 ppm (strong), and the methanol extract IC50 value of 174.12 (weak). Quantitative test results extract ethyl acetate fraction obtained total levels of tannin compounds was 19.63% (w/w), saponins were 1.85 (w/w), and total flavonoid were 24 .18% (w/b). While the n-hexane extract contains alkaloid 0.05% and steroids (6.03%).** Keywords : Toxicity, antioxidant, fitochemical, Garuga floribunda Decne, DPPH, BSLT method
Food-21	**Quality Evaluation of Frigate Mackarel Fish Pindang and Flying Fish Pindang from Fish Processing Centers in Kusamba Village, Klungkung Regency, Bali** I Gde Suranaya Pandit Faculty of Agriculture, Warmadewa University, Bali, Indonesia, Corresponding author: igedesuranayapandit@gmail.com **Abstract: Pindang is one of the traditional processed products derived from fish. Various types of fish can be processed into pindang, namely frigate mackerel fish, flying fish, sardinella, tuna, mackarel, cakalang and milkfish. Various types of fish cause various types of processing are carried out by the community and will eventually produce different quality. The purpose of this study was to evaluate and analyze the chemical, microbiological and organoleptic quality produced. Quality evaluation in comparative experimental research by comparing the quality of frigate mackarel fish pindang with flying fish. Parameters evaluated included chemical parameters, namely water content, salt content, histamine content, total volatile bases content, and trimethylamine content, microbiological parameters such as the number of bacteria, as well as organoleptic parameters including appearance, smell, texture, and taste. Based on the results of the study, the quality of frigate mackerel pindang with flying fish had significantly different qualities, especially in chemical assessment and organoleptic assessment.** KEYWORDS: Frigate mackarel, flying fish, pindang, quality

Food-22	**Microencapsulation Of Noni Fruit Extract (Morinda citrifolia L)with maltodextrin And Its Implementation As Feed Additive on Nutrient Digestibility and Performance of Sentul Chickens** Wiwin Tanwiriah, Leni Nurlaeni, Abun, Tuti Widjastuti, Indrawati Yuda Asmara, Iwan Setiawan Faculty of Animal Husbandry, Padjadjaran University. Jl. Raya Bandung â€“ Sumedang Km 21 Sumedang 45363, West Java, Indonesia Corresponding author email: w.tanwiriah@unpad.ac.id **Abstract: The use of antibiotic growth promoters (AGP) continuously in chicken can lead residues in chicken meat. Its important to find a natural antibiotic derived from herbal like noni fruit. Noni fruit extract have a positive effect on absorption of poultry nutrition. The research was held to find out the effect microencapsulation of Noni fruit extract (Morinda citrifolia L) with maltodextrin and its implementation as a feed additive to nutrient digestibility and the performance of Sentul Chicken. The experiment used 100 day old chicks Sentul chicks with a Completely Randomized Design (CRD), five treatment and four replications. The treatment consisted of T0 basal Ration (BR), T1 (BR + 50 mg/kg Zinc-Bacitracin), T2 (BR + 125 mg/kg MNFE), T3 (BR + 125 mg/kg MNFE), and T4 (BR + 375 mg/kg MNFE). Variables observed were nutrient digestibility (crude protein digestibility, dry matter digestibility, organic matter digestibilit) and performance (feed consumption , final body weight , feed efficiency , edible and inedible carcass). The study concluded that the addition of 250 mg/kg MNFE increased the nutrient digestibility and performance of Sentul chicken.** Key Words: Sentul chicken, microencapsulation, noni fruit extract, nutrient digestibility, performance
Food-23	**Potential Antioxidant Activity of Tetragonula laeviceps Honeybee** I Gede Pasek Mangku[1,] I Gusti Bagus Udayana[2,] Hanilyn A Hidalgo[3,] Amelia R Nicolas[4,] Mia Bella Fresnido[5,] Bonevasius Valeriano Nono[6] [1,6] Food Science and Technology Department, Faculty of Agriculture, Warmadewa University, Denpasar, Bali [2] Agriculture Technology Department, Faculty of Agriculture, Warmadewa University, Denpasar, Bali [3] Department of Agribusiness, Faculty of Agribusiness, Central Bicol State University of Agriculture, Camarines Sur, Philippines [4] College of Agriculture and Natural Resources, Faculty of Entomology, Central Bicol State University of Agriculture, Camarines Sur, Philippines [5] Department of Agriecotourism Management, Faculty of Agritourism, Central Bicol State University of Agriculture, Camarines Sur, Philippines **Abstract: Honey has a lot of nutritional content and some chemical compounds that have antioxidant activity. This research aims to analyze the potential antioxidant activity of local honey â€œKela-Kelaâ€• (Tetragonula laeviceps) and determine the best postharvest handling for producing high antioxidant activity. Block Randomized design was used in this research that consists of two factors, the first factor is time of harvest including harvesting in the morning (10.00-12.00) am; harvesting in the noon (> 12.00-13.00) pm; harvesting in the afternoon (> 14.00-16.00) pm. The second factor is harvest methods consisting of extraction methods and suction methods. This research was replicated three times. The result showed that the best treatment to produce good quality honey and the highest potential antioxidant activity is the honeybee harvested in the afternoon (>14.00-16.00) pm using of extraction method. The honeybee has the highest Vitamine C content is 4.75 Â± 0.42%; antioxidant activity is 21.32 Â± 0.24% DPPH; IC 50 is 2596.55 Â± 18.51 ppm); and sugar reduction is 62.11 Â± 1.26%.** Keywords: Postharvest; honeybee; antioxidant; quality
Food-24	**Food-Based Carbohydrate Consumption and Its Determinant Factors in Bengkulu Province, Indonesia** Melli Suryanty SN and Ketut Sukiyono Department of Agricultural Socio-Economics, Faculty of Agriculture, University of Bengkulu *Correspondent Email: melli.suryanty@gmail.com **Abstract: In Indonesia today, rice is the main source of carbohydrates and occupies the largest portion of the daily diet. An interesting finding in the last decade is the emergence of wheat as a new food commodity option besides rice. The position of the flour can shift the type of carbohydrate food from the tubers, such as cassava, sweet potatoes, and potatoes. This pattern shift is quite dynamic and interesting to study further. This paper aims to analyze households' food-based carbohydrate (FBC) consumption in Bengkulu Province. The research data is from the 2020 SUSENAS (Socio-Economic Survey) microdata, in which there are 5,730 households as the observations. We estimate demographic variables, expenditure, and price elasticity by using the AIDS (Almost Ideal Demand System) model. The results show that rice dominates the FBC consumption proportion in all Bengkulu Province districts. The average weekly rice consumption in Bengkulu is 6.49 kg/household. The proportion of rice consumption by households in rural areas is higher than in urban areas. The age of the household head, number of children, and household location affect demand for the FBC. All of the FBC is inelastic. Wheat flour is a complementary food for rice. Rice, potatoes, and tubers are substitutes for wheat flour. Rice and tubers are substitutes for potatoes, and rice and wheat flour are complementary foods for tubers. The expenditure elasticity for all the FBC is elastic.**

	It means that food is a normal good. Wheat flour has the highest elasticity, while rice has the lowest. Keywords: food-based comsumption, AIDS, rice.
Food-25	**Effect of Shape and Size Feed on the Growth and Survival Rate Lobsters Panulirus homarus** Amelia Sriwahyuni Lubis, Indra Junaidi Zakaria and Efrizal Biology Department of Andalas University, Padang, West Sumatra, Indonesia **Abstract: Lobster-eating behavior is related to lobster farming activities. The feed given must be attention to the shape and size because it will affect the productivity and performance of the lobsters. This study aimed to analyze the effect of different feed shapes and sizes on lobsters' growth and survival rate. This study used an experimental method with a completely randomized design consisting of four treatments and six replications. The treatment in this study was a different shape and size of feed for lobsters, namely: Feed A = noodle shape with 2 cm of length; feed B = noodle shape with 4 cm of length; feed C = disk shape with 2 cm of diameter and feed D = disk shape with 4 cm of diameter. Data analysis used Anova to see the effect of treatment on test parameters and continued with the Duncan test. Anova analysis showed that test feed significantly affected absolute weight growth, carapace length growth, carapace width growth, feed conversion, and feed efficiency. It had no significant effect on lobsters' survival rate and molting frequency. This study concludes that artificial feed with different shapes and sizes is the best in terms of absolute weight growth (32.28 Â± 1.28 g), carapace length growth (0.178 Â± 0.02 cm), carapace width growth (0.04 Â± 0.006 cm), feed conversion ratio (9.25 Â± 0.94 g), feed efficiency (11.02 Â± 1.10 %), good survival and molting frequency of 100% cm.** Keywords: lobsters; shape and size; feed; growth
Food-26	**Impact of Stingless bee, Heterotrigona itama, on pollination of purple eggplant (Solanum melongena L.)** Saripah Ulpah[1], Budi Tjahjono[1] TEdy Sabli[1] ,Sulhaswardi[2], Rahmat Hidayat[1], Dedi Ferdi Anto[2] [1]PostGraduate Study, Islamic University of Riau, Jl Kaharuddin Nst no 113 Pekanbaru. email: ulpahsaripah@agr.uir.ac.id [2]Faculty of Agriculture, Islamic University of Riau, Jl Kaharuddin Nst no 113 Pekanbaru. **Abstract: Although eggsplants are known to be self-pollinanting plant, reports suggested that assisted pollination enhanced the pollination results. The objective of the study conducted was to determine the impact of introducing stinglees bee, Heterotrigona itama, on the pollination of purple eggplant, Solanum melongena L. The study was carried out in two separate experiments. The first experiment was to study the formation of new Heterotrigona colony in a new environment and its foraging activity. The second experiment was employing the established colony as part of the pollination study. The later experiment was carried out using completely randomized designed comprised three treatments: self-pollination, natural pollination and pollination by the stingless bee. Each treatment was repeated for times. Results of the study revealed that introducing stingless bee gave the best results in term of the percentage of flower becoming fruit, number of fruit produced, number of seed per fruit and weight of yield. Results study of new stingless bee colony formation and its foraging activity are elaborated in the paper.** No data [ID= 210]
Food-27	**THE EFFECT OF TURMERIC, GINGER, AROMATIC GINGER AND CURCUMA IN DRINKING WATER ON THE CARCASS QUALITY OF FREE RANGE LOCAL CHICKEN WITHIN 10-16 WEEKS** Ni Made Yudiastari, Ni Ketut Etty Suwitari, Luh Suariani, I Gusti Agus Maha Putra Sanjaya, Yan Tonga Faculty of Agriculture, Department of Animal Husbandry, Warmadewa University Email: mdyudiastari@gmail.com **Abstract: The poultry farming industry continues to increase in line with the increasing demand for feed. In poultry farms feed must be available continuously (continuously) to maintain the quality of livestock. Feed must contain complete and balanced nutrition. Utilization of herbal plants can reduce the high price of feed. This study provides the addition of Turmeric, Ginger, aromatic ginger and curcuma in drinking water can affect the appearance of super free-range chickens within 10-16 weeks. The results obtained were free-range local chicken with the addition of turmeric, ginger, curcuma and aromatic ginger which met SNI standards in the aspects of water content, ash content, fat content, pH, water holding capacity, cooking loss and protein. This study aims to determine how much influence the herbal ingredients added to drinking water have on the quality of free-range local chicken carcasses within 10-16 weeks. The material used was 60 super free-range local chickens aged 10-16 weeks. The herbal plants used were turmeric (Curcuma domestica), ginger (Zingiber officinale roscoe), aromatic ginger (Kaempferia galangal L.), turmeric (Curcuma domestica Val.), curcuma (Curcuma xanthorhiza roxb). The method used was a completely randomized design consisting of 5 treatments and 3 replications, the treatment was given in drinking water with each treatment being R0 = drinking water without the addition of herbal ingredients, given drinking water 3% turmeric (R1), given drinking water 3 % ginger (R2), given drinking water 3% curcuma (R3), given drinking water 3% armoatic ginger (R4). From the results of statistical analysis, it was found that the treatment was giving turmeric, ginger, kencur and temulawak in drinking water had no significant effect (P > 0.05) on water content, protein content, pH, water**

	holding capacity and cooking losses, and had a significant effect (P <0.05) on ash content and fat content Keywords: Aromatic ginger, Curcuma, Free range local chicken, Ginger, Quality of carcass, Turmeric
Food-28	**ANTIOXIDANT ACTIVITY OF EXTRACT AND FRACTION RICH IN ANTHOCYANINS FROM JAMBOLAN (Syzygium cumini) FRUIT AND CONTRIBUTION OF ANTHOCYANIN COMPOUNDS TO ANTIOXIDANT ACTIVITY** Puspita Sari Department of Agricultural Products Technology, Faculty of Agricultural Technology, Jember University, Kampus Tegalboto Jl. Kalimantan I, Jember, East Java 68121, Indonesia E-mail address: puspitasari.ftp@unej.ac.id **Abstract: This study evaluated antioxidant activity of extract and fraction rich in anthocyanin of jambolan fruit using several in vitro assays and evaluated contribution of jambolan anthocyanins as antioxidant. The phenolic compounds including anthocyanin were extracted from jambolan peel and a mixture of pulp and peel (pulp-peel) using acidified-methanol and fractioned using a solid phase extraction (C18 Sep-pak cartridge), providing anthocyanin-phenolic fraction and non anthocyanin-phenolic fraction. The results showed that the jambolan pulp-peel extract (JPuE), jambolan peel extract (JPeE), and jambolan anthocyanin fraction (JAF) exhibited antioxidant activities, in descending order: JAF > JPeE > JPuE. JAF had the highest antioxidant activities compared to other samples and the antioxidant activity approached the activity of the standard quercetin, catechin, and ascorbic acid. The antioxidant activity of jambolan fruit was mainly contributed by anthocyanins. These results suggest that anthocyanins are contained in the extract and fraction of jambolan fruit with antioxidative properties are potential for functional food ingredient and nutraceutical.** Keywords: Syzygium cumini, jambolan extract, jambolan anthocyanin fraction, antioxidant activity
Food-29	**Analysis of Quality Control of Crude Palm Oil (CPO) and Palm Kernel (PK) Using Analysis of Variance (ANOVA) Method in PMKS PT. Sinar Gunung Sawit Raya Sirandorung** Dr Ir Hj Haniza, MT[1,] Sutrisno, ST, MT[2,] Wilda Roeska Simatupang[3] [1,2,3]Industrial Engineering, Univesitas Medan Area **Abstract: Oil palm is a plant that produces palm oil and kernel, which are processed into CPO (Crude Palm Oil) and PKO (Palm Kernel Oil). The problems at PT. Sinar Gunung Sawit Raya Sirandorung is a deviation of ALB, water content, impurities content from the maximum limit set by the company. The purpose of this research was to find out the variance that affects the quality of CPO and palm kernel by using Anova. Anova (Analysis of variance) is a statistical test procedure used to test the difference in the mean of more than two groups. The results showed that the analysis of variance for the Fh value for ALB content was greater than the Ft value. It means that there was an effect of ALB on CPO quality. The Fh value of water content is smaller than the Ft value, so it does not affect the quality of CPO. The Fh value for the impurities content is greater than the Ft value, meaning that there is an effect of the impurities content on the quality of CPO. Meanwhile, the Fh value for ALB content is smaller than the Ft value indicating that it does not affect the quality of PK. The Fh value for water content is greater than the Ft value. It means that there is an influence on the quality of PK. As well as, the Fh value for impurity content is greater than the Ft value, which means that the dirt content has an effect on PK quality.** Keywords: CPO, ALB, Water content, Impurity content, Analysis of Variance, Anova
Food-30	**THE SUCCESS RATE OF ARTIFICIAL INSEMINATION of CROSSING SWAMP BUFFALO with MURRAH BUFFALO in HUMBANG HASUNDUTAN DISTRICT, NORTH SUMATRA** Salam N Aritonang, Hilda Susanty and Kurniadi Ilham snaritonang@ansci.unand.ac.id **Abstract: This research aims to determine the success rate of Artificial Insemination (AI) of crossing Swamp Buffalo and Murrah Buffalo in terms of Service per Conception, Pregnancy Rate, and the Birth Rate in Humbang Hasundutan Regency, North Sumatra. This research used all of the crossbreed buffalo in Paranginan, Parlilitan and Lintongnihuta sub district. The research method used survey. The variables observed in this research were Service per Conception, Pregnancy Rate, and Birth Rates. Data analysis was carried out descriptively. The results showed that the success rate of crossbreed Swam and Murrah buffaloes by Artificial Insemination were: Service Per Conception 3.21, pregnancy rate 31.47% and birth rate 32.69%. From the results of the study it can be concluded that the success rate of Artificial Insemination (AI) of crosses between Swamp buffalo and Murrah buffalo in Humbang Hasundutan Regency, North Sumatra were not optimal.** Key words: Swamp buffalo, Murrah buffalo, service per conception, pregnancy rate, birth rate.
Food-31	**THE USE OF VARIOUS TYPES OF PROBIOTIC IN FERMENTATION ON THE NUTRITIONAL QUALITY OF FOOD WASTE AND ITS EFFECT ON THE GROWTH OF COMMON CARP (Cyprinus carpio)**

	Yuli Andriani[1], Muhammad Fatah Wiyatna[2], Fittrie Meyllianawaty Pratiwy[1], Iskandar[1], Risdiana[3], Ratu Safitri[3] [1]Department of Fisheries, Faculty of Fishery and Marine Science, Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363, West Java, Indonesia [2]Department of Animal Production, Faculty of Animal Husbandry, Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363, West Java, Indonesia [3]Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran Jl Raya Bandung-Sumedang km 21 Jatinangor, Sumedang 45363 Jawa Barat, Indonesia [4]Department of Biology, Faculty of Mathematics and Natural Sciences , Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor, Sumedang 45363, West Java, Indonesia Correspondent Email: yuli.andriani@unpad.ac.id **Abstract: Organic food waste is a potential source as an economical fish feed ingredient. Increasing the nutritional value of food waste can be done by using a fermentation. This study aims to analyze the best type of probiotic in the fermentation process of organic food waste (from restaurant) and the effect of its use on the growth of carp (Cyprinus carpio). The fermentation used three types of probiotics (P1,P2,P3) with different microorganism contents, and the best result will scale up for the biological test. Biological test used an experimental method with a Completely Randomized Design (CRD) consisting of five treatments and three replications. The treatment given consisted of adding 0, 10, 20, 30 and 40% fermented product in feed (protein content 30%). The tested fish were reared for 42 days. Parameters observed included changes in the nutritional value of fermented products, daily growth rate, activity of amylase enzymes and water quality. Analysis of data on the quality of fermented products was carried out descriptively and biologically tested using ANOVA followed by Duncan's test. The results showed that the best type of probiotic used in the fermentation was in the P1 treatment which contained the microorganism Sacharomyces sp., Bacillus sp. and Lactobacillus sp. Adding probiotics can improve nutrition in the food waste : 29.72% protein, 4.18% moisture content, 12.94% ash content, 4.81% crude fiber, 16.09% fat, BETN 36.44% and energy 4,438 Kcal/Kg. The results of biological tests with the addition of 40% fermented product showed the best daily growth rate (1.05%) and the highest protease enzyme activity.** Keywords : Common carp, Probiotics, Fish Growth, Organic Food Waste, Fermentation
Food-32	**The Effect of Steam Blanching on the Antioxidation Properties Temulawak (Curcuma xanthorrhiza Roxb)** Dwiyati Pujimulyani[1], Bayu Kanetro[1], Nurul Huda[2] [1]Faculty of Agroindustry, University of Mercu Buana Yogyakarta, Jl. Wates Km 10, 55753 Yogyakarta, Indonesia [2]Fakulti Pertanian Lestari, Universiti Malaysia Sabah, Jl. UMS, 88400 Kota Kinabalu, Sabah, Malaysia **Abstract: Rhizome plants including curcuma (Curcuma xanthorrhiza Roxb) are commonly used as spices, raw materials for herbal medicine. This study aims to determine the antioxidation properties of curcuma as a result of steam blanching. The research stages are as follows curcuma sorted, peeled, washed, blanching, dried with a cabinet dryer, ground, sieved so that curcuma powder is obtained. Curcuma powder was tested for antioxidant activity with 2 methods, namely DPPH (1,1-diphenyl-2-picrylhydrazyl) and FRAP (Ferric Reducing Antioxidant Power) methods, total phenolic, flavonoid and tannin. The research design used was a Completely Randomized Design (CRD) with research factors namely curcuma hizome parts (main and tiller) and variations in blanching time 0; 2.5; 5; 7.5 and 10 minutes (steam method). The conclusion results showed that curcuma temulawak rhizome parts and blanching time variation significantly affected the antioxidation properties of temulawak powder. Steam blanching for 5 minutes on the main rhizome produced selected curcuma with significantly higher test results (antioxidant activity and total phenol content) than without blanching treatment. The selected temulawak powder with antioxidant activity of 86.04Â±0.54 %RSA DPPH method, 7.18Â±0.03 mg E Fero/g FRAP method, 42.18Â±2.66 mg GAE/g total phenol content, 2.84Â±0.01 mg QE/g flavonoid content and 0.24Â±0.00 mg CE/g tannin.** Keywords: Antioxidant activity, curcuma, steam blanching
Food-33	**High Temperature Short Time Blanching Enhances the Antioxidative Properties of Caulerpa racemosa Powder** Emi Windrayani, Nurfitri Ekantari, dan Siti Ari Budhiyanti Department of Fisheries, Faculty of Agriculture, Universitas Gadjah Mada. Jl. Flora, Building A4 2.01, Bulaksumur, Yogyakarta 55281 Indonesia **Abstract: Green alga Caulerpa racemosa lived and was consumed by Asian and the Pacific islands people. It contains bioactive compounds such as phenols, flavonoids, alkaloids (caulerpin), sulfated polysaccharides, and steroids. These compounds have the potential to prevent disease because they have antioxidant, anti-inflammatory, antidiabetic, and anti-obesity activities. Before the preservation process it is necessary to prevent damage of these compounds due to oxidation through blanching.The aim of this research is to understand the effect of temperature during water blanching on the antioxidant activities, phenolic, caulerpin, color, and moisture content of C. racemosa powder. The analyses were: ABTS, FRAP, TPC, caulerpin, moisture content, and color with 70, 80, 90, and 100 C water blanching temperatures at 20 seconds. The blanching treatments had a greater impact than without blanching of C. racemosa powder. The 100 C had the highest value on ABTS, FRAP, and TPC, respectively 13.18 Â± 0.13 (Âµg TE/g), 1.52 Â± 0.03 (mg FerroE/g), 0.96 Â± 0,01(mg GAE/100 g). Increasing its value because enzyme deactivation is better in high temperature. Short time with high**

	temperature blanching can prevent the loss of bioactive compounds. Caulerpin has specific aromatic rings, -NH, C=O, and -O-, and all samples have peaks at these frequencies. Blanching has greater greenness color (-a*), because it can increase color quality. No significant result in moisture content. Overall, this study suggested that blanching Caulerpa can be done at 100C for 20 second from its result of antioxidative properties and color C. racemosa powder. Keywords: Caulerpa racemosa, Water Blanching, antioxidant, bioactive compound
Food-34	**VITAMIN C CONTENT OF WHEY AND PITAYA BASED FUNCTIONAL BEVERAGE** Iza Ayu Saufani, Indri Santika Putri Department of Nutrition, Mohammad Natsir Bukittinggi University, West Sumatera, Indonesia E-mail: saufani@yahoo.com **Abstract: Whey is a byproduct of cheese production, which has the potential to be turned into functional beverage product development. However, it has less-flavors product. Additional of pitaya to whey beverage benefit due to vitamin C content. The purpose of this study was to develop formulas of whey-based beverage with addition of pitaya. Materials of this research were whey from Kejulasi Farm in Agam Regency, West Sumatera, pitaya, skim milk, and other reagents to vitamin C analysis. Optimization process used to design expert with D-optimal mixture design method. The result suggested 16 formulas then response analyze of Vitamin C in maximize criteria and pH in range criteria. Based on ANOVA resulted selected formula which 20% of pitaya, 40% of whey, and 40% skim milk combination. The predicting of vitamin C was 25,590 mg/100ml and pH was 5,217. While the verification of vitamin C was 17,44 mg/100ml. The verification of vitamin C in prediction interval with probability <0,05. In conclusion, this beverage had the potential to be used as acceptable developed product that can improve the vitamin C content.** Keywords: Functional beverage, Pitaya, Vitamin C, Whey
Food-35	**Preservation with Different Smoking Techniques in an Effort to Extend The Shelf Life of Chicken Seeds** A A Made Semariyani, I Wayan Sudiarta, Ni Made Ayu Suardani, Ni Luh Suariani Warmadewa University **Abstract: Chicken sequence (Balinese sausage) is a processed meat product that is processed by making a complete Balinese meat, fat and seasoning mixture (â€œBasa Genepâ€ •), then inserted into a sleeve (synthetic casing made of collagen). At room temperature, the average shelf life of chickens is 2-3 days. If it is more than this limit, the taste of the chicken stock will become rancid and rotten making it unfit for consumption and sometimes mushrooms will grow depending on the level of maturity when fried. Smoke is a traditional preservation method that has been passed down from generation to generation by our ancestors. Currently, smoking has been widely used by the food industry as a flavor, texture, and distinctive flavor in food products, such as meat, fish, and cheese. Smoke has the ability to preserve food ingredients due to the presence of acid, phenolic and carbonyl compounds. The advantage of using smoke as a preservative is that it is able to maintain the levels of protein and fat contained in the ingredients, when compared to other preservatives. This research is in line with PT Strategic Plan for Food Security, Agriculture and Maritime Affairs, on the development of germplasm. The aim of this study was to determine the effect of smoking technique and duration on the sequence characteristics of smoked chickens. The method used in this study was a Completely Randomized Design (CRD) with a factorial pattern which consisted of 2 factors, namely Factor I was the Smoking Technique which consisted of 3 levels and Factor II was the duration of the Smoking which consisted of 4 levels so that 12 combinations of treatments were obtained. 3 x repetitions. Parameters observed included phenol content, pH, moisture content, ash content, fat content, protein content, and organoleptic properties of smoked chicken sequences. The results showed that the technical treatment and smoking duration had a significant effect on lowering the pH, moisture content and increasing the organoleptic characteristics of the smoked chicken sequence.** Keywords : shelf life, preservation, smoking technique, order of smoked chicken
Food-36	**Metabolite Profiling of Phyllanthus niruri L. under Drought Stress for The Herb Medicinal Sustainability** Winda Nawfetrias[1,3,] a, Eka Nurhangga[1,] Rikania Reninta[2,] Siti Chotimah[1,] Delvi Maretta[1,] Lukita Devy[1,] Rizkita Rachmi Esyanti[3,] Ahmad Faizal[3,] b [1]Research Center for Horticultural and Estate Crops, Research Organization for Agriculture and Food, National Research and Innovation Agency, Cibinong Science Center, Jl. Raya Jakarta-Bogor, Cibinong, Bogor, Indonesia 16915 [2]Research Centre for Genetic Engineering, Research Organization for Life Science and Environment, National Research and Innovation Agency, Cibinong Science Center, Jl. Raya Jakarta-Bogor, Cibinong, Bogor, Indonesia 16915 [3]Plant Science and Biotechnology Research Group, School of Life Sciences and Technology, Institut Teknologi Bandung, Jl. Ganesa No. 10, Bandung, Indonesia 40132 a) Corresponding author: winda.nawfetrias@brin.go.idb) afaizal@itb.ac.id

	Abstract: Plant-specialized metabolites are unique sources for pharmaceuticals and industrially valuable biochemicals. Accumulation of these metabolites is common in plants stimulated by biotic or abiotic stressors and/or elicitors. One of the abiotic factors that influence the plant's bioactive molecule is drought stress, which can be employed to stimulate the production of bioactive compounds in plants. Phyllanthus niruri is commonly used as a medicinal plant in many parts of the world for the treatment of various diseases because it contains bioactive compounds that have the potential to be antioxidants, antimicrobials, and anti-hepatoprotective. Our previous studies have demonstrated that drought stress up to 70% field capacity (FC) could increase crop production as well as phenol and flavonoid contents. This study aimed to analyze the metabolite profile of P. niruri, which was subjected to drought stress for various FC (Control, 85%, 80%, 75%, 70%, 55%). Using chromatography-mass spectrophotometry (GC-MS) analysis, forty-seven compounds were identified. Four compounds were detected in control and all treatments, whereas four compounds were only detected in drought-stressed plants. Î²-Sitosterol, 9-Tricosene, and (Z)-, Hexacosane are the main compounds only detected at 80% FC. The clustering analysis revealed that drought stress induced distinct compounds compared to control. Moreover, 85% -75% FC presumably induces similar compounds as they were in the same cluster, while plants responded differently upon 70% FC and 50% FC. In conclusion, P. niruri synthesizes different bioactive compounds under different drought-stress conditions. Keywords: bioactive compound, drought stress, field capacity, GC-MS, Phyllanthus niruri
Food-37	**Effect of Pulsed Electric Field Pretreatment on Physical Properties of Coffee Beans During Storage** Zaimar[1], Reta[2], Andi Ita Juwita[3], Gusni Sushanti[4], Sitti Nurmiah[5], and Sri Udayana Tartar[6] [1,2,3,4,5,6] Department of Agroindustry. State Agricultural Polytechnic of Pangkajene Islands, Pangkep, Indonesia 90665 **Abstract: Research background. Constraints in during storage of coffee beans have characteristics such as hygroscopic nature, easily contaminated, easy to expire, change the colour and aroma. Changes its impact on the quality of coffee that produced. One of the advanced technologies to apply in handling coffee beans is the use of a pulsed electric field (PEF) system. Therefore, the aim of this research was to study of the effects of pulsed electric field on the physical properties of the coffee beans in during storage. Experimental approach. The research method used was a qualitative and qualitative method with a completely randomized design. The independent variables are (i) coffee types (Arabica and Robusta), (ii) exposure time (0; 1.3; 2.7; 3.9 sec) and storage time (0 to 7 weeks). While the dependent variables are water content and changes in water content, bulk density and changes in density, and color change of coffee beans. Results and conclusions. The results showed that the highest decrease in water content was in Robusta coffee at an exposure time of 0 seconds (without exposure) about 1.04 to 5.12% during storage. The results of the analysis of variance showed that the type of coffee, storage time, exposure time and the interaction of the three had a very significant effect (sig < 0.01) on water content and decreased water content, except for the storage time-exposure interaction, coffee type-exposure time had a significant effect (sig < 0.05), while the duration of exposure and storage had a very significant effect on the decrease in the bulk density of coffee species. Novelty and scientific contribution. The application of PEF to coffee beans contributes to changes in the surface structure of coffee bean skin cells. It had an impact on changes in the physical properties of coffee beans in two types of Robusta and Arabica coffee during storage. This application can be useful in further coffee processing activities.** Keywords: pulsed electric field, coffee bean, moisture content, bulk density.
Food-38	**Effect of Various Alternative Media on the Viability of the Entomopathogen Fungi Lecanicillium lecanii and Its Invectivity on Aphis glycines** [1]Lutfi Afifah, [1]Arni Berlian, [2]Anik Kurniati [1] Department of Agrotechnology, Faculty of Agriculture, University of Singaperbangsa Karawang, Indonesia [2] Forecasting Center for Plant Pest Organisms, Jl. Raya Kaliasin Tromol Pos 1, Jatisari, Pangulah Utara, Kec. Kota Baru, Karawang, Jawa Barat 41374 Corresponding author email: lutfiafifah@staff.unsika.ac.id ha **Abstract: Soybean (Glycine max) is an important food crop as the main source of vegetable protein nutrition. One of the important pests that attack soybeans is the aphid Aphis glycines Matsumura (Hemiptera: Aphididae). The mycoinsecticide Lecanicillium lecanii is effective against several soybean pests, but its effect on aphids A. glycines has not been studied yet. This study aimed to study the infectivity of the entomopathogenic fungus L. lecanii to suppress the development of soybean aphids A. glycines and to study the conidia production of the fungus L. lecanii grown on PDA media, peanuts, green beans, and soybeans. In the next research stage, the entomopathogenic fungus with the best conidia density was tested against aphids A. glycines with conidia density 107, 108, 109, and the comparisons were using distilled water and spraying deltamethrin 25 g/l. The results obtained from this study included the diameter of the colony of the alternative media which was the highest in peanut media (3.73 cm), while the highest colony growth rate was in green beans (0.97 mm/day). The highest germination rate was shown in green beans media (58.80%). Conidia density on various media revealed that the results were not significantly different between treatments ranging from 17.29 x 109 - 58.33 x 109. The difference in conidia density of L. lecanii used influenced the mortality rate of A. glycines. The more or denser the conidia, the faster the fungus infects and kills A. glycines. In addition, spraying L. lecanii on soybean aphids A. glycines caused a decrease in the number of aphids offspring produced. The LC50 mortality value was obtained at 3.1x107 spores/ml, the LT50 mortality value was obtained at 0.49 days. Then, the number of offspring produced on aphid after spraying the enthomopathogenic fungus is revealed quite high ranging from 51.8 â€“ 57.6 offspring. The alternative media from green beans is recommended to use as the media growth of L. lecanii.**

	Thus, L. lecanii as the biological agent of A. glycines deserves to be further developed. Keywords: Lecanicillium lecanii, conidia density, growth rate, germination, mortality of A. glycines, aphid personality, LC50, and LT50.
Food-39	**Corncob Powders as Potential Sources of Functional Nutrition and Bioactive Compounds** **Haslinaa, Adi Sampurno[1], Novizar Nazir[1]** [1] Faculty of Agricultural Technology, Semarang University, Semarang, 50196, Indonesiab Faculty of Agricultural Technology, Andalas University, Padang, 26123, Indonesia Corresponding author: chana_panca@yahoo.com **Abstract: Community members routinely discarded corncob after harvest. If this issue is not treated properly, it will cause environmental degradation. High in cellulose, corncob has the potential to be used as a raw material in the production of natural fabrics. The benefits of processing corncobs to a powder include increased durability, a smaller volume, a lighter weight, and a reduction in packaging and transportation difficulties. Drying is an essential phase in the production of corncob powder since it determines the powder's longevity and quality. The purpose of this investigation was to establish whether corncob powders are viable sources of bioactive chemicals and functional nutrition. A Completely Randomized Design (CRD) was adopted for the experiment. The drying periods were set to 4, 5, 6, 7, and 8 hours and four replications to serve as the variable. The best corncob powders featured nutritional content (water at 10.26%, ash at 3.73%, protein at 2.20 %, fat at 0.77%, carbohydrate at 83.04%, and crude fiber at 35.77%) as well as bioactive substances (total phenolic at 113.30 mg/100g, antioxidant activity at 21.28%, and tannins at 1.46 mg/L). The implication of this study is that corncobs can be utilized as a source of bioactive substances to produce corn products with added value.** Keywords: Corncob; drying durations; nutrition; bioactive compounds; powders
Food-40	**Milk Production and Application of Technical Aspects of Rearing Murrah Buffalo at Sumber Abadi Livestock Farms, Pagar Merbau, Deli Serdang District** Rizqan[1], Elly Roza[1], Arief[1], Heru Prayoga[2] [1] Departement Technology and Animal Production, Faculty of Animal Science, Universitas Andalas, Padang West Sumatra, 25163, Indonesia [2] Student of the Faculty of Animal Science, Universitas Andalas, Padang, West Sumatra, 25163, Indonesia Email correspondence: rizqan@ansci.unand.ac.id **Abstract: This study aims to determine milk production and the application of technical aspects of raising Murrah buffalo at Sumber Terak Abadi Farm, Pagar Merbau, Deli Serdang District. This study used 40 Murrah buffaloes lactating 3 and 4. The research method used was the survey method and descriptive data analysis. The variables observed were milk production and the application of technical aspects of raising Murrah buffalo, namely breeding and reproduction, feed and drinking water, management procedures, pens and equipment, and livestock health. The results of this study indicated that the milk production of Murrah buffalo was 5.71 Â± 2.13 kg/head/day in lactation III and 4.67 Â± 1.63 in lactation IV, milk production 7% FCM 314.79 Â± 127.83 kg /head/lactation at lactation III and 252.81 Â± 98.24 kg/head/lactation and milk production 305 days 1,309 Â± 531.61 kg/head/lactation at lactation III and 1,501.35 Â± 408.54 kg/head/ lactation in IV lactation. Application of livestock technical aspects consisting of (1) Breeding and Reproduction with a score of 3.14 in the good category, (2) Feed and Drinking Water with a value of 4.00 in the good category, (3) Management Management with a score of 3.00 in the good category (4) Cages and Equipment with a value of 3.83 in the good category (5) Livestock Health with a value of 3.33 in the good category. From the study results, it can be concluded that the production of Murrah buffalo milk at Sumber Ternak Abadi Farm is said to be good, and the application of the technical aspects of maintenance is categorized as good with a value of 3.46, determined by FAO (2011).** Keywords: Murrah Buffalo, Milk Production, Maintenance Technical Aspects
Food-41	**The effect of microwave-assisted extraction temperature and material-to-solvent ratio on the characteristics of pandan (Pandanus amaryllifolius Roxb.) leaf extract** Qomarudin[12], Siti Zahra Salsabilla[2], Erni Sofia Murtini [2], Yunianta[2], Yuli Witono [3] [1] Faculty of Agricultural, Universitas Wisnuwardhana Malang, Indonesia [2] Food Science and Biotechnology Department, Universitas Brawijaya, Malang, Indonesia 65145 [3] Faculty of Agricultural Technology, Universitas Jember, Indonesia

	Corresponding author: erni.murtini@ub.ac.id **Abstract: Fresh pandan leaf fragrance has been applied to enhance the aroma of many traditional foods. However, the fresh leaf has a limited shelf-life, only 1 day after harvest. Therefore, pandan extract either in liquid or powdered form can be utilized as an alternative aromatic component in food production. The purpose of this study was to determine the effect of temperature extraction (50, 60, and 70oC) utilizing microwave-assisted extraction (MAE) and the ratio of pandan leaf as material to ethanol as solvent (1:3, 1:7, and 1:11) to the characteristics of extract pandan in liquid form. The study found that the properties of pandan extract treated at MAE 60oC with a material: solvent ratio of 1:7 were the best among all treatments. The pH of this liquid pandan extract was 5.31, the antioxidant activity was 32.86 ppm, and the chlorophyll content was 7.76 mg/L. The powdered pandan extract generated by drying the liquid pandan extract using a spray dryer and adding maltodextrin had properties such as water activity 0.45, solubility 96.09%, solubility rate 0.01g/s, color L 85.65, a* - 6.68, b* 8.51, yield 3.88% and was detected to contain 0.17 % aromatic compound 2-acetyl-1-pyrroline. Powdered pandan extract has the potential to be developed as an aromatic food additive. Panelists liked the cake lumpang, a traditional cake consisting primarily of rice flour and coconut milk, which is made by adding 1% pandan leaf extract powder.** Keywords: pandan, extract, temperature, MAE, aroma
Food-42	**Growth and yield of red rice (Oryza glaberrima) on saline soil** A Munar [1,] W A Barus[1,] ARauf[2 ,]AI Mahendra[1] [1]Program Study of Agrotechnology, Faculty of Agriculture, Universitas Muhammadiyah Sumatera Utara Jl. Kapten Mukhtar Basri No.3, Medan, 20238, Indonesia [2]Departements of Agrotechnology, Faculty of Agriculture, Universitas Sumatera Utara Jl. Dr. A. Sofian No. 3, Medan, 20155, Indonesia Email asritanarnimunar@umsu.ac.id **Abstract: Red rice is a food ingredient that contains higher levels of anthocyanins and nutrients compared to white rice. The limited fertile land causes the development diverted to sub-optimal land such as saline soils which have a high salt content, so varieties that are resistant to saline stress are needed. This study aims to determine the growth response and yield of several varieties of red rice grown on saline soils. This study used a factorial split-plot design (SPD) consisting of 2 factors and 3 replication, namely saline soil as the main plot with salinity levels of 4.67 and 6.59 mmhos/cm. Varieties as subplots, namely Inpari 24, Inpari 7, Pamelen, and MSP 17. The results showed that the level of soil salinity had a significant effect on plant height at 3 Weeks After Planting (WAP), where at a salinity of 6.59 mmhos/cm was higher than a salinity of 4.67 mmhos/cm. The varieties had a significant effect on plant height at 3 WAP with the highest variety at MSP 17. While the combination of the treatment gave interaction on the total number of tillers aged 6 WAP, the number and weight of filled grains per plot with high yields for the Inpari 7 variety grown at a salinity of 4.67 mmhos/cm and for the Pamelen variety at a salinity of 6.59 mmhos/cm. The Inpari 7 variety gave the highest yield at low salinity and the Pamelen variety gave a high yield at higher salinity.** Keywords: Red rice, varieties, salinity
Food-43	**Ampiang Dadiah Powder, Development of Traditional Food Based on Local Wisdom to Prevent stunting in West Sumatra** Kurnia Harlina Dewi [1,] Rina Yenrina[1] dan Neswati[1] [1)]Department of Agroindustrial Technology, Faculty of Agricultural Technology, Universitas Andalas, Kampus Limau Manis, Padang, West Sumatera, Indonesia kurniaharlinadewi@ae.unand.ac.id / nia_unib@yahoo.com **Abstract: Ampiang dadiah is a processed product of dadiah (fermented buffalo milk) with the addition of ampiang, coconut and brown sugar. This local wisdom product has the potential to be developed into high-quality and long-lasting food for stunting prevention in West Sumatra Province. In an effort to extend the shelf life of Ampiang Dadiah and ease of use for food, it is necessary to study the manufacture of Ampiang Dadiah Flour. The purpose of this study was to examine changes in the nutritional value of traditional Ampiang Dadiah products to Ampiang Dadiah Powder and consumer responses to Ampiang Dadiah flour products. The ingredients used are Ampiang Dadiah with a composition of Dadiah (25%), Ampiang (50), brown sugar and coconut (25%). Parameters observed: carbohydrate content, fat content, protein content, air content, ash content, mineral content. The results of the study showed changes in the chemical content of Ampiang Dadiah to Instant Ampiang Dadiah, namely carbohydrate content from 3.59% to 10.01%, protein from 9.81% to 27.36%, fat from 13.16% to 36.70% , water content from 67.73% to 10% and ash content from 5.71% to 15.93%. Consumer preferences for Ampiang Dadiah Flour are almost the same as preferences for Dadiah, Color (3.46 and 3.77), Aroma (3.85 and 3.69), taste (3.73 and 3.65) and overall appearance (3. .69 and 3.96).** No data [ID= 616]

Food-44	**Nutritional Composition of Underutilized Local Food Resources for Rice Substitution and Gluten Free Product** Fetriyuna Fetriyuna[1,2,] Ratna Chrismiari Purwestri[2,3,] Sri Murniani Angelina Letsoin[3,4] [1] Department of Food Technology, Faculty of Agro-Industrial Technology, Padjadjaran University, , Jln. Raya Bandung-Sumedang Km. 21 Jatinangor, Kab. Sumedang 45363, Indonesia [2] Institute for Nutritional Science (140), University of Hohenheim, Garbenstrasse 30, 70599 Stuttgart, Germany, [3] Faculty Forestry and Wood Sciences, Czech University of Life Sciences Prague, KamÃ½ckÃ¡ 129, 16500 Praha 6â€“Suchdol, Czech Republic [3] Department of Mechanical Engineering, Faculty of Engineering, Czech University of Life Sciences Prague, KamÃ½ckÃ¡129, 16500 Praha-Suchdol, Czech Republic; letsoin@tf.czu.cz (S.M.A.L.) [4] Faculty of Engineering, University of Musamus, Merauke Regency, Papua 99611, Indonesia **Abstract: Indonesia has plenty of local food resources that can be used as a carbohydrate source and staple food. However, lack of understanding about the potential use and nutrition content of the foods has caused many of them are growing wildly in nature, neglected, and underutilized. Most recently, there is an increasing interest in examining the potential of the underutilized carbohydrate sources, including their nutritionally rich compounds following the 2018 agriculture policy in promoting agriculture and food diversification. Banten province has started to identify its local food resources that were neglected and develop various alternative utilization of the foods. One of the local carbohydrate-source is Taro Beneng (Xanthosoma undipes K. Koch) that potentially can be used as a healthy alternative to white rice, or as an ingredient of supplementary or complementary foods. Sago, from the genus Metroxylon, belongs to the Palmae family and grows naturally in the tropical forests of Papua (Indonesia). Sago is a commonly consumed staple food by native Papuans and Papua New Guineans, which is also an integral part of their cultural activities. Sweet potato with the various color of tuber has the potential as a carbohydrate sources as well pro vitamin A and antioxidants compound. The comparison of nutritional composition of underutilized food in Indonesia was carried out to determine the potential as a substitute for rice and support food diversification programs. The result shows the comparable nutritional composition of rice and other underutilized carbohydrate sources that can be use for rice substitution and gluten free products.** Keywords: underutilized food, food diversification, taro beneng, sago, sweet potato, gluten free product
Food-45	**Lipid quality assessment of virgin coconut oil produced with different blanching methods** Sulkhan Windrayahya1*, Marsha Rosalind Arminta1, Velin Christabel Laureen1, Hanny Angrainy1 1Department of Food Technology, Indonesia International Institute for Life Sciences, Jl. Pulomas Barat No.Kav. 88, Jakarta, Indonesia 13210. Email: sulkhan.windrayahya@i3l.ac.id **Abstract: Virgin coconut oil (VCO) is prone to oxidation due to the natural enzymes present in the coconut. Blanching has been studied to inactivate lipase and peroxidase enzymes that create deterioration in the product. This research aims to analyze the effect of different blanching methods on the lipid quality of VCO. Coconut was subjected to water blanching at 95°C for 5 minutes and 80°C for 10 minutes with and without 0.05% citric acid addition. After that, VCO was produced using the chilling thawing method, which combines centrifugation and low-temperature incubation. VCO was analyzed in the antioxidant activities by ABTS and DPPH, total phenolic content (TPC), free fatty acid (FFA), iodine value (IV), peroxide value (PV), and TBARS value. The results showed that water blanching with 0.05% citric acid at 80°C for 10 minutes obtained better lipid quality compared to control with high IV (6.612±0.085 g iodine/g sample), low FFA (0.024±0.002 mg KOH/g sample), and low TBARS value (2.761±0.233 mg MDA/g sample). However, the antioxidant activities were decreased, but higher TPC was obtained (9.161±1.564 mg GAE/g sample).** **Keywords: VCO, blanching, chilling thawing, antioxidant, polyphenol**

Sustainable Development

Development-1	**Molecular Identification of Cellulose Degrading Bacteria and Ability to Produce IAA and Gibberellins** Anak Agung Sagung Putri Risa Andriani[1,] Sri Gunawan[2,] Widyatmani Sih Dewi and Putu Krisnawan Kalimutu[2] [1]Study Program of Agrotechnology, Faculty of Agriculture, Warmadewa University, Denpasar, Indonesia [2]Faculty of Forestry, Institut Pertanian STIPER, Yogyakarta, Indonesia [3]Soil Science Department, Faculty of Agriculture, Universitas Sebelas Maret, Surakarta, Indonesia [4]Study Program of Master Biotechnology, Faculty of Agriculture, Udayana University, Denpasar, Indonesia Corresponding author : krisnawankalimutu@gmail.com **Abstract: This study aims to find bacteria that have the ability to degrade cellulose and produce growth hormones. Bacterial isolation was carried out at a Cocoa Plantation in Meko Village, Poso Regency. Bacteria were isolated using**

	cellulose growing media using Carboxy Methyl Cellulose and Congo Red by observing the formation of a clear zone on the growth medium. The bacteria with the best results in degrading cellulose were then examined for the morphology of the bacteria by carrying out gram staining after that it was viewed using a microscope with a magnification of 1000 times. Ability to produce IAA and Gibberellins. IAA was seen by growing the Isolate in liquid Luria Bertani media with the addition of 0.2% L-tryptophan for 24 hours then adding Salkowski reagent then the IAA concentration was seen at a wavelength of 535 nm. Gibberellin was prepared with Tryptone Soya Broth medium and then extracted with methanol : chloroform : 2N NH4OH. After separating, remove the chloroform part and then read it with a wavelength of 263 nm. The bacterial isolates were identified molecularly in the 16s rRNA gene with primers 27F and 1492R and then a phylogenetic tree was made using the maximum likelihood method with 1000 times bootstrap and the identification results at the species level and genetic distance at the same species in different places. Keywords: Cellulose, Bacteria, Indole Acetic Acid, Giberellins, 16s rRNA, Phylogenetic.
Development-2	**Impregnation of Nano-modified Low Molecular Weight Phenol Formaldehyde (LMwPF) Resin onto Bamboo Strips and its Physical Properties Enhancement** SN Surip[1]and UMK Anwar[2] [1]Faculty of Applied Sciences, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia 2Forest Product Division, Forest Research Institute Malaysia, 52109 Kuala Lumpur, Malaysia **Abstract: Bamboo is a natural material having a fast reproduction and offers high mechanical properties. However, when bamboo is expected to be a construction material, their sensitivity to moisture and their durability are usually questionable. Sustainable solutions for the bamboo treatment still need to be investigated. The present study explores the uses of nanoclay as an agent to improve the physical properties of bamboo by water absorption, thickness swelling and linear expansion analysis. Bamboo strips (Gigantochloa scortechinii) were impregnated with low molecular weight phenol formaldehyde (LMwPF) resin and nanoclay (0.5, 1.0,1.5& 2.0 wt%). Samples were submerged in LMwPF resin using a vacuum chamber of 750mmHg for 1h before it was released within 1.5h. Treated strips were dried in an oven with a temperature of 60Â°C for pre-curing followed by dried for another 24 hours at temperature 140Â°C. The physical properties of the test indicated that the properties of nano phenolic-treated strips have significantly increased as compared to the samples without nanoclay.** No data [ID= 40]
Development-3	**ANALYSIS OF SUSTAINABILITY OF TILAPIA AQUACULTURE BUSINESS IN NORTH BENGKULU REGENCY** Aziza Mughniyati[1], Indra Cahyadinata[1],,Satria Putra Utama[1] [1]Department Socio Economic of Agriculture, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia Coresponding author : cahyadinata@unib.ac.id **Abstract: This study aims to analyze the sustainability of tilapia aquaculture in North Bengkulu Regency on the ecological, economic, socio-cultural, technological and infrastructure, and institutional dimensions and analyze the key attributes that are effective for this sustainability. The data used are primary data and secondary data. The research sample used a purposive sampling method of 22 people, including tilapia fishers and experts. Data analysis was carried out using the Multidimensional Scaling method through the Rapfish approach and participatory prospective analysis. The results of the multidimensional analysis shows that the category is quite sustainable (67.00%). The ecological, socio-cultural, and institutional aspects are categorized as sustainable. The economically, technologically and infrastructure aspects are categorized as quite sustainable. Leverage analysis shows that of the 36 attributes, there are 22 attributes that are sensitive to the value of the sustainability index, with the largest contribution coming from the ecological dimension and the institutional dimension. Participatory prospective analysis shows that there are 14 key attributes that influence the sustainability. Efforts to increase the sustainability index value can be made by managing 22 sensitive attributes, especially 14 key attributes that affect the sustainability.** Keyword: sustainability, tilapia, multidimensional scaling, rapfish
Development-4	**Application Of The Reliability Centred Maintenance Method at QGS in PT ABC Dumai** Melliana Sekolah Tinggi Teknologi Dumai Email melliana@sttdumai.ac.id **Abstract: QGS A1 is a powerful crusher and dryer designed based on the reference of drying equipment with good performance efficiency. QGS A1 has a very important function in streamlining the production process. This study**

	uses the Reliablity Centered Maintenance method which utilizes information on its reliability and weaknesses and the maintenance actions that must be chosen. The results of this study found a solution that the QGS A1 treatment measures were run to failure 81.2%, directed condition 18.18%, and failure finding 0%. The conclusion of this research is Condition Directed (CD), which is the action taken aims to detect damage by means of visual inspection, checking tools and monitoring a number of existing data. Keywords: Maintenance, RCM, QGS A1
Development-5	**Green Synthesis of Fe3O4@SiO2-Ag Magnetic Nanocomposite using Mallotus paniculatus Leaf Extract for Antibacterial Activity** Salni[1], Eka Sri Yusmartini[2], Bambang Yudono[3], Poedji Loekitowati Hariani[3], [1]Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Sriwijaya, Ogan Ilir, Indonesia [2]Chemical Engineering Department, Faculty of Engineering, Universitas Muhammadiyah, Palembang, Indonesia [3]Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Sriwijaya, Ogan Ilir, Indonesia Email puji_lukitowati@mipa.unsri.ac.id **Abstract: In this study, Fe3O4@SiO2-Ag magnetic nanocomposite was synthesized using Mallotus paniculatus leaf extract. Mallotus paniculatus extract as a reducing and stabilizing agent. The Fe3O4@SiO2-Ag magnetic composite was characterized using X-Ray Diffraction (XRD), Scanning Electron Microscope- Energy Dispersive X-Ray (SEM-EDX), and Vibrating Sample Magnetometer (VSM). The antibacterial activity of Fe3O4@SiO2-Ag magnetic nanocomposite was evaluated based on the diameter of inhibition zones against gram-positive and gram-negative bacteria, namely Staphylococcus aureus and Escherichia coli. Fe3O4@SiO2-Ag magnetic nanocomposite has magnetic properties with a saturation magnetization value of 43.56 emu/g and crystalline size of 11.4 nm. The addition of Ag to the Fe3O4/SiO2 composite showed an increase in antibacterial effect compared to Fe3O4/SiO2. The results also showed that the Fe3O4@SiO2-Ag magnetic nanocomposite had a more remarkable ability to inhibit the growth of gram-negative than gram-positive bacteria. The mechanism of antibacterial properties confirms that the magnetic nanocomposite attaches to the bacteria's surface, disrupting the bacterial membrane's structure. Then cells interpenetrate with each other and inhibit protein activity, eventually causing bacterial apoptosis. The present study indicated that Fe3O4@SiO2-Ag magnetic nanocomposite is an excellent antibacterial agent.** Keywords: green synthesis, Mallotus paniculatus leaf, Fe3O4@SiO2-Ag, magnetic nanocomposite, antibacterial
Development-6	**TEST OF ANTIFUNGUS ACTIVITY OF ESSENTIAL OIL OF LONG PEPPER LEAVES (Piper retrofractum, Vahl) AGAINST Candida albicans AND CHEMICAL CONTENT DETECTION BY GAS CHROMATOGRAPHY-MASS SPECTROSCOPY (GC-MS)** Ni Luh Putu Putri Setianingsih[1], AA Sagung Putri Risa Andriani[2], Sang Ayu Made Putri Suryani[3], I Wayan Sudiarta[1] [1]Food Science and Tecnology Departmen, Faculty of Agriculture, Warwadewa University, Bali-Indonesia [2]Agrotechnology Department, Faculty of Agriculture, Warwadewa University, Bali-Indonesia [3]Aquatic Resources Management Department, Faculty of Agriculture, Warwadewa University, Bali-Indonesia Corresponding author: E-mail: putriameell@gmail.com **Abstract: Have been done by research of concerning activity of antifungi of essential oil Long Pepper (Piper Retrofactum. Vahl) against Candida albicans. This research begins with the isolation of essential oils using steam distillation method. The oil obtained was subjected to an antifungal test with an essential oil concentration of 100%; 75%; 50%. 25% and 12.5%. Gas Chromatography-Mass Spectroscopy (GC-MS) was used to determine the main components of Java chili essential oil. The results of the study using the diffusion method, Long Pepper essential oil began to show activity against Candida albicans at a concentration of 25% v/v in the form of a radical zone and a concentration of 50% v/v in the form of a radical zone. The results of the components of essential oil compounds by GC-MS showed the presence of beta karyopilene, isokaryopilene, alpha karyopilen, trisildo heptane karyopilen and patchouli compounds.** Keyword : Antifungi, Essential oil, Gas Chromatography-Mass Spectroscopy, Long Pepper (Piper Retrofractum Vahl.)

Development-7	**Identifying the development strategy of the community-based ecotourism in Balbar village, North Maluku as an option to create a sustainable livelihoods** Mardiyani Sidayat[1] Mila Fatmawati[2] [1] Department of Agribusiness, Faculty of Agriculture, Khairun University, Indonesia. dhiany_220973@yahoo.com [2] Department of Agribusiness, Faculty of Agriculture, Khairun University, Indonesia. fatmawatimil82@gmail.com **Abstract: Balisosa Barumadoe (Balbar) village is one of the villages located in North Oba Sub District, Tidore Island Municipality, North Maluku Province. In general, the local people are working at the agriculture, fishery, tourism, trading, and service sectors. At presently, people in this location is developing community-based ecotourism for Doe Masure beach destination which is expected to be an option for creating sustainable livelihoods. The respondent taken for this research is chosen from the community representatives, while this study using the Snowball sampling method and then identified using SWOT analysis to determine the development strategy that will be implemented. From the results of the study, it is known that alternative strategies that can be applied to develop community based-ecotourism as a sustainable livelihood option are through several approaches including, the role of local leader (leadership), providing and/or improvement of ecotourism facilities and infrastructure, capacity building for local community, and support granted from external stakeholders (government, private companies/BUMN and the general public** Keywords : Community-based tourism, sustainable livelihoods
Development-8	**Characteristics of sucrose esters from Methyl Palmitate Using K2CCO3 and Na2CO3 as Catalysts** **Rahmadanis[1], Erliza Hambali[2], Obie Farobie[3]** [1]Postgraduate student of Agroindustrial Engineering, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia [2]Department of Agroindustrial Engineering, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia [3]Department of Mechanical and Biosystem Engineering, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB University), Bogor, Indonesia Email Erliza.h@gmail.com **Abstract: Sucrose ester is a renewable raw material that is environmentally friendly, non-toxic, biocompatible, and biodegradable with emulsification, stabilizing, and conditioning characteristics, so it is widely used in emulsion product applications. The synthesis of sucrose ester used methyl laurate as a renewable raw material. Synthesis of methyl laurate ester was carried out by the esterification method. Meanwhile, the synthesis of sucrose ester was carried out by the transesterification method with free solvent. The catalyst used was alkaline K2CO3 and Na2CO3 6%. The reaction was carried out at 60 Â°C for 30 min then 110Â°C for 90 min. The products were analyzed using FTIR, HPLC, pH, foam stability, emulsion stability, surface tension, interfacial tension, contact angle, particle size, and polydispersity index. The results showed the characteristics of sucrose ester using K2CO3 were better than Na2CO3. The resulting characteristics are the sucrose ester group present at a wave number of 1734 nm, sucrose ester content (94.40%), pH 10.38, foam stability (85.47%), emulsion stability (67.05%), surface tension (29.67 cm /dyne), interfacial tension (4.72 cm/dyne), contact angle (66.07Â°), particle sizes in the range of 3.52-14.6 Âµm, and a polydispersity index value (0.401). The resulting palmitate sucrose can be applied to the cleaning, personal care, and cosmetic industries.** No data [ID= 162]
Development-9	**USING LOKAN CLAM SHELL ASH FILLER ON ASPHALT CONCRETE â€“ WEARING COURSE (AC-WC) LAYER** **Sri Asfiati[1], Irma Dewi[2], Sri Prafanti[3],Zulkifli Siregar[4]** Teknik Sipil, Universitas Muhammadiyah Sumatera Utara, Indonesia EMail sriasfiati@umsu.ac.id **Abstract: Mixing the material on the pavement will minimize the use of asphalt. One of the materials that can be used as asphalt mixing material is clam shells, to improve the quality of environmentally friendly road pavement. In the area around Sialang Buah beach which is 64.8 Km from Medan city or around 1 hour and 11 minutes, there is a lot of scattered shellfish shell waste which until now has only been waste that has not been utilized optimally. This has inspired the author to conduct research on the use of mussel shells as a filler. Filler is a fine-grained material that passes the No. 200 which functions as a filler in the asphalt mixture. The content contained in the lokan shells has**

	similarities to cement, namely they both have a high lime content so that they can increase the stability of the asphalt. The purpose of this study was to determine the effect of adding lokan shell ash filler to the Asphalt Concrete â€“ Wearing Course (AC-WC) layer on Marshall characteristics. The research conducted refers to the 2018 Bina Marga specifications. This research was conducted by making test objects using three different filler variations, 2%, 2.5% and 3% content of shell ash filler made 3 samples, asphalt content of 5%, 5.5% and 6%, a total of 27 test objects and 9 specimens for normal mixtures. Keywords :Marshalt test, Asphalt Concrete â€“ Wearing Course, filler, The ashes of lokan clam shells.
Development-10	**ENGINEERING DISTRIBUTION AND DEVELOPMENT AREA FOR BEEF CATTLE IN KABUPATEN LIMA PULUH KOTA** No data [ID= 508] **Abstract: The population of beef cattle in Limapuluh Kota Regency in 2021 reached 45,909 heads. However, the distribution and development areas in Kabupaten Lima Puluh Kota has not taken into account the potential and suitability of the land. Thus, it is necessary to conduct a research to: 1) examine the spatial pattern of beef cattle breeding business areas based on its land capability and suitability, 2) analyze the potential of carrying capacity of the region concerning beef cattle feed supply in Kabupaten Lima Puluh Kota and 3) engineer the direction of distribution and development areas based on potential of land resources in Kabupaten Lima Puluh Kota. Directions for distribution and development areas for cattle is decided based on an analysis of the potential of regional development, Location Quotient (LQ), and Shift Share Analysis (SSA). The results of the directions for the distribution and development were mapped using ArcGIS software version 10.9. The results showed that 308,512 hectares of land were suitable and 18,424 hectares were not suitable ecologically. Potential forages are rice straw, elephant grass, field grass, maize and legumes. The Development and Distribution Area is in the Bukit Barisan, Pangkalan Koto Baru, and Harau sub-districts. The Development areas are in the districts of Kapur Sembilan, Mungka, Guguak, Payakumbuh, Situjuah Limo Nagari and Lareh Sago Halaban. The Stabilization area is in the Akabiluru and Luak sub-districts. The Supporting area is in the Gunuang Omeh sub-district.** Key words: spatial analysis, mapping, beef cattle
Development-11	**DEVELOPMENT OF SIAM ORANGE CULTIVATION USING COMPOST FROM CHICKEN MANURE COMBINED WITH UREA FERTILIZER TO CHANGES IN RESULTS AND FRUIT QUALITY** **N P A Sulistiawati, NKA Astiari, Nengah Suaria, and M Suarta** Agrotechnology Program Study, Fakulty of Agriculture Warmadewa University, Bali-Indonesia anomsulistiawati313@gmail.com **Abstract: This study aims to determine the Effect of Chicken Manure Combined with Urea Fertilizer on the Yield and Fruit Quality of the Siamese Orange Plant. This research was conducted in Bayung Gede Village, Kintamani-Bali. carried out for 11 months starting March 2022 January 2023. This study used a Randomized Block Design (RAK) in a factorial pattern with 2 treatment factors, namely: The first factor of chicken kendang (K) consisted of 4 treatment levels, namely: Control (K0), 10 tons ha-1 (K1), 20 tons ha-1 (K2), 30 tons ha-1 (K3), the second factor is urea (N) consisting of 4 treatment levels, namely: Control (N0), 150 kg ha - 1 (N1), 300 kg ha-1 (N2), and 450 kg ha-1 (N3). Observations were analyzed by analysis of variance. When the effect is significant to very significant, then it is continued with a significant difference test (LSD) at the 5% level in the single treatment, and Duncan's analysis at the 5% level in the interaction effect. The results showed that the weight of fresh Siamese oranges per plant showed the highest yield in the chicken manure treatment of 30 tons ha-1 (K3) with the heaviest fresh fruit weight reaching 155.57 g, which increased 85.50% when compared to no manure. chicken (K0) weighing 84.78 g, in the urea (N) fertilizer treatment showed the highest yield in the 150 kg ha-1 urea fertilizer treatment with a citrus fruit weight of 155.78 g, which increased 87.12%, when compared to no urea fertilizer (N0) weighing 83.25 g. The results of the interaction effect on changes in sugar content and yield of citrus plants obtained the highest fresh fruit weight in the 30 ton ha-1 (K3) chicken manure treatment with fruit weight reaching 143.54 g, in the urea fertilizer treatment the highest fresh fruit weight yield was treatment of 150 kg ha-1 (N1) urea fertilizer with a yield of fresh fruit weight reaching 145.15 g. The interaction of 10 tons ha-1 chicken manure with 150 kg ha-1 urea produced a level of sweetness of fresh fruit of 13.5 Â°Brix** No data [ID= 502]

Development-12	**OPTIMIZATION OF THE USE OF DIGITAL MARKETING IN INCREASING SALES VOLUME** Nanang Kusuma Mawardi, Artita Devi Maharani, Eska Stefani, Ayu Indah Lestari Department of Agribusiness, Faculty of Agriculture, Universitas Sarjanawiyata Tamansiswa *nanang.kusuma@ustjogja.ac.id **Abstract: This study aims to determine the optimization of the use of digital marketing and analyze the effect of the use of digital marketing on sales volume at PT. X. The basic research method is descriptive with a quantitative descriptive approach using data analysis methods, namely simple linear regression with SPSS 20 software. The results of this study, namely the optimization of the use of digital marketing in increasing sales volume at PT. X, found that the use of digital marketing is still not optimal on several platforms such as Bukalapak and Blibli. Meanwhile, the use of digital marketing on platforms such as Lazada is at a medium optimal level, while Shopee and Tokopedia are perfectly optimal. Then for the regression analysis results, there is a positive significant effect related to research on the use of digital marketing on sales volume.** Keywords: Digital Marketing; E-commerce; Sales Volume
Development-13	**Agriculture as Base Sector in Java: Location Quotient and Shift Share Approach** Salsabil Rifqi Qatrunnada[1] ,Rumayya[2]Department of Economics, Universitas Airlangga, Jl Airlangga No [46,] Surabaya, East Java, Indonesia [2]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia Email salsabil.rifqi.qatrunnada-2019@feb.unair.ac.id **Abstract: As a country with the name "agricultural country", Indonesia makes agriculture an important sector for supporting economic development. In addition, the agricultural sector is also still the backbone of most people. Geographical area of Java Island, which is mostly covered by mountains, makes some regencies/municipalities make the agricultural sector a primary sector to support development in the region. For this reason, this study aims to examine and analyze regencies/municipalities in Java Island that make their agricultural sector as a base sector both at present and in the future. This research uses regencies/municipalities in provinces all over Java Island as the object of study. To answer the research objectives, the Location Quotient and Shift Share methods are used as analytical tools in this study.** No data [ID= 381]
Development-14	**Increasing the Quality of Siam Orange (Citrus nobilis Lour) through the Application of NPK Fertilizer and Biopesticide from Soursop Leaves** Ni Komang Alit Astiari[1,] Ni Putu Anom Sulistiawati[1,] I Nengah Suaria[1] and I Nyoman Rai[2] [1]Agrotechnology Study Program, Faculty of Agriculture, Warmadewa University, Denpasar, Bali [2]Agroecotechnology Study Program, Faculty of Agriculture, Udayana University, Denpasar, Bali Correspondent: alit.astiari@gmail.comAbstract **Abstract: Research with the aimed of improving the quality of Siam orange (Citrus nobilis Lour) fruit yields through the application of NPK fertilizer and biopesticides from soursop leaves was conducted in Belancan Village, Kintamani District, Bangli Regency, Indonesia, from January to August 2022. The study used a randomized block design with 2 factors and 3 replications. The first factor was NPK fertilizer consisting of 4 dose levels, i.e.: 0, 150, 300, and 450 g/tree. While the second factor was the concentration of biopesticides from Soursop leaves consisting of 3 levels, i.e.: 0, 40, and 80 ml/l. The results showed that the interaction between the dose of NPK fertilizer and the concentration of biopesticide from soursop leaves had no significant effect on all the observed variables. Treatment of NPK fertilizer and soursop leaf biopesticides improved the fruit Siam orange quality. In the NPK fertilizer treatment, the highest weight per fruit and fruit weight harvested per tree was obtained at a dose of 450 g/tree, namely 94.73 g and 9.94 kg, or an increase of 33.20% and 55.55% when compared to control with weight per fruit and harvested fruit weight per tree were only 71.12 g and 6.39 kg, respectively. Whereas in the treatment of biopesticide concentrations from soursop leaves, the highest weight per fruit and fruit weight harvested per tree was obtained at a concentration of 80 ml/l, namely 93.06 g and 9.14 kg, or an increase of 52.85% and 47.62% compared to control with weight per fruit and harvested fruit weight per tree only 63.04 g and 5.98 kg.** Keywords: biopesticide, NPK, Siam orange, soursop leaves, yield quality
Development-15	**Strategy to Hasten the Adoption of the Indonesia Sustainable Palm Oil Production System by Indonesian Smallholder Farmers: a System Dynamics Approach**

	Teguh Adiprasetyo [1] and Indra Cahyadinata[2] [1]Department of Natural Resources Management, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia; [2]Department of Agribusiness, Faculty of Agriculture, University of Bengkulu, Bengkulu, Indonesia. **Abstract: The palm oil sector has an impact on Indonesia's long-term economic growth. Because it relies on renewable resources, the palm oil industry can support sustainable development. If the production method for palm oil, especially that used by smallholder farmers, is not sustainable, the palm oil sector may be less able to support the sustainability of economic development. The number of smallholder farms is gradually rising and may someday account for the bulk of Indonesia's palm oil plantations. The ability of smallholder farmers to maintain and sustain their palm oil production may have a big impact on the palm oil industry's sustainability. Smallholder farmers in Indonesia may use the environmentally friendly method of manufacturing palm oil more frequently, which would increase the industry's sustainability. In order to encourage smallholder farmers to embrace Indonesia's ecologically friendly approach for producing palm oil, the strategies need to be developed. The system dynamics modelling can serves as a tool to developed and tested the effectiveness of the proposed strategies. The alternative strategies include the inclusion of sustainable palm oil production in Indonesia into the replanting program, the coordination of stakeholders to assist smallholder farmers who lack sufficient technical knowledge, and the strengthening of intermediary institutions to create incentives for smallholder farmers.** Keywords: smallholder farmer, system dynamics, palm oil, adoption
Development-16	**LITERATURE REVIEW OF XYLITOL PRODUCTION FROM VARIOUS BIOMASS WASTES** Efri Mardawati, Virly, LP, , Hana N, Devi MR, Roni Kastaman **Abstract: The potential of four types of agriculture waste abundant in Indonesia, rice straw, sugarcane bagasse, corn cobs, and oil palm empty fruit bunches (OPEFB)â€"has been investigated as a raw material for xylitol production. The high hemicellulose content of these four biomass wastes is critical for providing xylose, a substrate for the biological synthesis of xylitol. Besides that, each biomass's physical and chemical characteristics differ, leading to different processing methods and conditions required for biomass pretreatment, hydrolysis, and fermentation. This paper provides a comprehensive review to determine the pretreatment methods and their effects on the lignin reduction process of each agricultural waste biomass, determine the hydrolysis methods and their effects on the xylan to xylose conversion, and determine the fermentation process configuration and the type of microorganism used in the xylitolÂ biosynthesis.** Keyword : Biomass, fermentation, xylose, xylitol, waste
Development-17	**Antibacterial activity of Cream from Mesenchymal Stem Cell Secretome on Staphylococcus aureus and Escherichia coli Bacteria** Marlina[1] ,Rustini[1] , Rahmawati Elda[1], Dini Assyfa[1], Arsy Nurfatiha Ardi[1], Sinta Nazaria[1], Nur Elida[2] [1] Faculty of Pharmacy, Andalas University, Jl. Limau Manis, Padang, 25166, West Sumatera, Indonesia [2] Biomolecular Research Center, Ina Laboratory, Padang, 25152, West Sumatera, Indonesia **Abstract: Stem cells have been the focus of medical biotechnology breakthroughs that have ushered in a new era of therapeutic development, most notably the use of secretions obtained from mesenchymal stem cells, also known as secretomes. Apart from being used in medicine, researchers are now beginning to direct the use of secretomes in cosmetics because of Their role in overcoming various skin problems, especially as a regenerating agent. However, the existence of antibacterial properties of secretome stem cells has yet to be widely discussed, especially its use in cosmetic preparations as an alternative to prevent the occurrence of antibiotic resistance, widely used in skin infections, especially on the face. This study aimed to determine the antibacterial potential of secretome cream preparations of various concentrations. Cream preparations at various concentrations were evaluated, including organoleptic, homogeneity, viscosity, pH, and stability tests. Antimicrobial test using the agar diffusion method. The results showed that the secretome cream had an antimicrobial effect against E.coli and. S. aureus, indicated by forming a clear zone around the disc paper. The difference in concentration shows the difference in the zone of inhibition.** Keyword: secretome, antimicrobial, antibiotic, E.coli, S.aureus
Development-18	**Characterization of Natural Zeolite Minerals to Reduce Feâ€™s and Al-dd in Acidic Sulphate Soil on Tidal Land** T Priono Department of Soil Science, Faculty of Agriculture, Sebelas Maret University, Jl. Ir. Sutami 36A Surakarta 57126, Indonesia

	*Corresponding author: timurpriono@gmail.com **Abstract. Acidic sulphate soil as marginal land with main problem chemical properties - acidity and heavy metals. The characterization of soil properties on acidic sulphate soil were important for land utilization. In this research, would be conducted a zeolite mineral ability test of Klaten to decrease Fe's and Al-dd rate in soil. The result show that characterization of zeolite Klaten contains 29.4% mordenite. The value of Fe's was decrease Fe's to 15.90 ppm and Al-dd to 1.07 me. 100 g-1 on soil.Keywords: acidic sulphate soil, zeolite, Fe, Al-dd** No data [ID= 411]
Development-19	**Effect of Using Bioactivator From Rumen Contents With Adding By Row Propolis Trigona Bees on The Content of Dry Matter, Crude Protein and Fiber Fraction of Oil Palm Frond As Ruminant Feed** Syahro Ali Akbar , sup[1]sup, ,Tri Astutisup[1]sup, and Fajri Basyirunsup[2]sup sup[1]sup>Department of Animal Science, Faculty of Agriculture, University of Mahaputra Muhammad Yamin, Solok City. 27311. West Sumatra, Indonesia. Tel +62 81366334915.. [2]Department of Economic Education Faculty of Education, University of Mahaputra Muhammad Yamin, Solok City. 27311. West Sumatra, Indonesia Email correspondent: syahroaa@gmail.com **Abstract: This study aims to evaluate the effect of using local bioactivator a rumen content- with the addition of trigona bee crude propolis on dry matter content, crude protein and fibre fraction of oil palm fronds as ruminant feed. The design was completely randomised with 5 treatments and three replications with propolis dosage R1 = 0%, R2 = 0.5%, R3 = 1%, R4 = 1.5%, R5 = 2%. The results showed that the addition of propolis in the process of making Bioactvator showed a very significant effect (P<0.01) on the content of dry matter, crude protein, and fibre fraction. The increasing dose of propolis R2, R3, R4, and R5 of trigona bees showed an increase in dry matter content and a decrease in crude protein content. Kandumham lignin, ADF and NDF also increased with increasing doses of added propolis. The best results in this study were the use of propolis doses of 0.5% in the process of making rumen content bio activators giving optimal crude protein content and the lowest lignin content.** Keywords: propolis, crude protein, fibre fraction, oil palm fronds
Development-20	**The Evaluation of Ligninase Enzyme Activity and Total Bacterial Colonies on Crude Enzyme Base on Rumen Contents with The Addition of Trigona Bees Propolis** **Tri Astuti[1], Syahro Ali Akbar[1], Fajri Basyirun[2], dan Rezi[1]** [1]Department of Animal Science, Faculty of Agriculture, University of Mahaputra Muhammad Yamin, Solok City. 27311. West Sumatra, Indonesia. Tel +62 81366334915. [2]Department of Economic education Faculty of Education, University of Mahaputra Muhammad Yamin, Solok City. 27311. West Sumatra, Indonesia Email adektuti@gmail.com **Abstract: This study aims to evaluate the use of Row Trigona bee propolis doses on the activity of cellulase enzymes, lignin peroxidase, manganese peroxidase, laccase, and total bacterial colonies on crude enzymes produced from rumen contents and incubated for 7 days. A completely randomized design with 5 treatments and three replications was used in this study with propolis doses R1 = 0%, R2 = 0.5%, R3 = 1%, R4 = 1.5%, and R5 = 2%. The results showed that the addition of propolis in making crude enzymes showed a very significant effect (P** Keyword : Ligninase enzyme, row propolis, trigona bees
Development-21	**Endophytic Bacteria of the Mangrove Rhizophora spp. Ethanol Producer** Anthoni Agustien[1],, Putra Santoso[1] , Yetria Rilda[2], Muhamad Hafidz Fadjri[3] [1]Department of Biology Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang 25163, Indonesia. [2]Department of Chemistry Faculty of Mathematics and Natural Sciences, Universitas Andalas, Padang 25163, Indonesia. [3]Post Graduate, Agriculture Ibaraki University, Japan Corresponding Author: anthoniagustien@sci.unand.ac.id **Abstract: Research has been carried out on the isolation and screening of endophytic bacteria from mangrove plants in the coastal zone of West Sumatra Province, which produces ethanol. The purpose of the study was to obtain endophytic microbes from the mangrove plant Rhizophora spp. which grows in West Sumatra Province, a producer of ethanol. The results showed that from 110 isolates of endophytic microbes Rhizophora spp., 53 isolates were bacterial isolates. The results of the screening of ethanol-producing bacteria; obtained 35 isolates of bacteria**

	indicated as producing ethanol. Keywords: Endophytic, Mangrove, Rhizophora spp., Ethanol
Development-22	**Simazine Molecularly Imprinted Polymer (MIP) Adsoption Kinetic Model as a Potentiometric Sensor** Yohandri Bow[1,] Adi Syakdani[1,] Indah Purnamasari[1,] Rusdianasari[2] [1] Chemical Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia [2] Renewable Energy Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia. yohandripolsri.ac.id **Abstract: Indonesia is an agrarian country with a lot of agricultural and plantation land. Plant management and care are inextricably linked to the use of pesticides and herbicides to combat plant pests. Pesticides and herbicides are active chemical agents used to remove plant pests that can become pollutant when their incidence exceeds the environmental and human tolerance limitations. Pesticides and herbicides containing simazine components should be used with caution to avoid unwanted consequences that might damage individuals and the environment. The goal of this study is to create Molecularly Imprinted Polymer (MIP) simazine as pollutant sensors in order to evaluate the kinetics of MIP adsorption to simazine analyte. The Langmuir isotherm is the best kinetic model for MIP simazine adsorption. The distribution coefficient from this model is 0.97504. Langmuir's constant is 278.067,8446 mol2/Joule2. The obtained intercept of qs = 11.37x 10-4 mg/g with E (free energy) 2.1294 x 10-6 KJ/mol indicates a physical adsorption process.** Keyword: Molecularly imprinted polymer, simazine, kinetic model

Energy

Energy-1	**Bioactive Compounds of Oil Extracted from Ifa Wagol and Ifa Tamate Local Kenari (Canarium sp.) in Indonesia** Angela Wulansari[1,] Ucil Sahari[2,] Hamidin Rasulu[3] [1,3]Faculty of Agriculture, Khairun University, Indonesia [2]Student of Faculty of Agriculture, Khairun University, Indonesia Correspondent email: angela.wulansari223@gmail.com **Abstract: Indonesia has various kind of Kenari nuts (Canarium sp.) grown in east part of Indonesia, especially Makian Island, North Maluku. The two of it are Ifa Wagol and Ifa Tamate, named by North Maluku local language, means large nuts and nuts similar to tomato. Kenari nuts is rich in fat thus it has high potential of plant based oil. The aim of this research was identified bioactive compounds of Kenari oil extracted from kenari nuts with and without cuticle. Kenari oil was extracted using hydraulic press and filtered. The result showed kenari oil had fat content 97.44%Â±0.5289, water content 0,79%Â±0.1702, and free fatty acid 1.13%Â±0.1402. Bioactive compounds of kenari oil were carotenoid 131.53Âµg/100gÂ±37.9121, flavonoids 0.0061%Â±0.0013, phenol 0.0200%Â±0.0023, and vitamin E 32.0719mg/100g. Kenari oil extracted from kenari nuts with cuticle has higher bioactive compounds than kenali oil extracted from kenari nuts without cuticle. Ifa wagol (big kenari) had higher bioactive compounds than ifa tamate (kenari tomato).** Key words: kenari oil, cuticle, ifa wagol, ifa tamate, hydrolic press
Energy-2	**ENERGY VALUE AND DIGESTIBILITY OF BREADFRUIT (Artocarpus altilis) IN BROILER DIETS AS PARTIAL REPLACEMENT FOR CORN (Zea mays)** Roger Y Ibaez Jr[1,] Jacob Frederick P Velza[1,] Riza A Bartolay[2,] Allen Y Ibaez[3] [1]Dr Emilio B. Espinosa Sr. Memorial State College of Agriculture and Technology [2]Ipil National High School [3]Antonio Lee Llacer Sr. Integrated School **Abstract: The study found that replacing maize with sundried breadfruit meal (SBM) at varying levels did not have a significant (P>0.05) effect on the total feed intake, overall feed conversion efficiency, or livability rate of broilers. Similarly, the body weight of Kabir birds was not significantly (P>0.05) affected by SBM at replacement levels of 10% to 30%. The 10% replacement level in broiler diets was also found to be equivalent to the control. Additionally, the study showed that SBM had no significant (P>0.05) effect on digestibility, feed intake, feed conversion efficiency, livability, or income over feed and chick cost. The findings suggest that using SBM as a partial replacement for maize in broiler diets at a 10% replacement level can result in cost savings without compromising performance. The study also concluded that feeds with**

	a 10% to 30% replacement level could be given to Kabir birds without compromising their weight gain, which is consistent with previous research on the nutritional value of breadfruit for livestock. By substituting a portion of maize in feeds, production costs can be reduced, and competition between humans and animals for food can be lessened. Incorporating SBM as a partial replacement for maize in broiler and Kabir bird diets at 10% up to 30% did not result in significant (P>0.05) effects on the birds' feed intake, feed conversion efficiency, livability rate, or net income. These findings support using SBM as an alternative feed ingredient in poultry production, contributing to sustainable and cost-effective farming practices. Further research is needed to evaluate the economic feasibility of using SBM as a partial substitute for maize in poultry diets. KEYWORDS: breadfruit, partial replacement, digestibility, energy value, sundried breadfruit meal (SBM)
Energy-3	**Comparative Study of Slope and Azimuth Methods to Determine the Angle of Solar Panels** Rimbawati[1,] Kris April Mas Sahlul[1,] Munawar Alfansury Siregar[1] [1]Universitas Muhammadiyah Sumatera Utara Email rimbawati@umsu.ac.id **Abstract: Solar Panels technology has the potential to be applied in Indonesia, especially in remote areas that are not covered by government power supply facilities. However, the main problem in its application is that the power generated is very dependent on the ambient temperature and the intensity of solar radiation received in an area. The intensity of solar radiation is influenced by the solar panel installation system and the right angle of inclination. This research was conducted to determine the angle of inclination to the output power of solar panels, located in Bintang Asih Hamlet, Rumah Ambul Village, Tigajuhar District, Deli Serdang Regency. The area is located at an altitude of 380 masl with sunny weather temperatures between 27o-40 oC which is one of the remote villages of North Sumatra. This study used a 100 Wp monocrystalline type solar panel with a prayer tracker system with the slope method and the azimuth method to determine the best angle. Based on the data analysis, it is obtained that the slope angle for the slope method when the weather is sunny is 45o, while for the azimuth method it is 43o. Furthermore, for the output power using the slope method with an average temperature of 37.09, a voltage of 13.53 V and a current of 2.65 A produces the output power is 65.42 W, while using the azimuth method d with an average temperature of 38.34, a voltage of 13.97 V, and a current of 2.94 A produces the output power of 70.11 W.** Keyword: Solar Panels, Tilt, Slope, Azimut
Energy-4	**Improving of Aluminum Alloys Process in Crucible Furnace by Waste Cooking Oil from Restaurant in Chiang Mai for Melting** Suwattanarwong Phanphet[1,] Sermkiat jomjunyong[2,] Chatree Maneekosol[3,]Chan Yodle[4,] Athiwat Wangmai[5] [1,5]Department of Industrial Technology, Faculty of Science and Technology, Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300E-mail: suwatwong_pha@cmru.ac.th, suwattwong@gmail.com, athiwat229@gmail.com [2] The Engineering Institute of Thailand under H.M. The Kingâ€™s Patronage (Northern) Chiang Mai University, Chiang Mai, THAILAND 50200 E-mail: Sermkiatj@gmail.com [3] Faculty of Education Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300 E-mail: Chamanee04@gmail.com [4] Department of Environmental Science, Faculty of Science and Technology, Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300 E-mail: chan_yod@cmru.ac.th **Abstract: The objective of this research was to consider the aluminum alloys manufacturing in crucible furnace by used waste cooking oils in Chiang Mai as fuel to burners in crucible furnaces to melt aluminum by used wasted cooking oil spray to spread in the air as much as possible. Likewise, changes volumetric wasted cooking oil flow rate of 0.5-1.5 l/min. The results revealed that the volumetric wasted cooking oil flow rate leaving its efficiency at 1.0 l/min. As a consequence, inside of crucible furnace high temperature of 850 Â°C. Besides, there was found the piece of metal texture was faultless. The experiment showed that used the wasted cooking oil has adequate for using as fuel to melt aluminum alloys in the crucible furnace. Thus, the researcher contributes to use this experiment to include in the Casting Introduction subject to both of Students of Chiang Mai Rajabhat University and Students of Rajamangala University of Technology Lanna Chiang Mai.** Keywordsâ€” Wasted Cooking Oil as Fuel, Aluminium Alloys, Crucible Furnace
Energy-5	**Improving and Quality Checking of Grey Cast Iron by Used the Scrap Steel for Manufacturing in Chiang Mai Province** Suwattanarwong Phanphet[1,] Ratanaree Suttipong[2,] Somsak boonjaeng[3]Surasak Nummeesri[4,] Jirasan kamkun[5] [1,2,3] Department of Industrial Technology, Faculty of Science and Technology, Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300 E-mail:

	suwatwong_pha@cmru.ac.th, uwattwong@gmail.com, nokdum2513@gmail.com, somsak_boo@cmru.ac.th [4,5]Department of Environmental Science, Faculty of Science and Technology, Chiang Mai Rajabhat University, 202 Chang Phuak Road, Chang Phuak, Muang, Chiang Mai, THAILAND 50300 E-mail: duydui@hotmail.com **Abstract: The purpose of this research is to uses scrap steel in Chiang Mai province is recycled for saving energy and environment in Chiang Mai province by research about manufacturing processing and Qualification of Grey Cast Iron in Chiang Mai province to guidelines for improving the qualification of Grey Cast Iron by used steel materials and scrap steel in the manufacturing process for making Grey Cast Iron. As survey from both of the Foundry manufacturers was found approximate manufacturing process of the Grey Cast Iron, nevertheless there is a different about the size of melting furnace and proportions of filling materials are not equal. The result of analysis was showed that outcome of pieces after casting by used the Spectrometer was found . Foundry manufacturer 1st place: uses cupola furnace with diameter 1.2 m, height 8 m and the Flue height 30 m included the top of water tank for trapping smut and dust. Manufacturing has furnace filling material ratio as following, Cast steel scrap 5 parts, Old Engines 2 parts, Mild steel scrap 1.5 parts, Anthracite Coke 1 part and Limestone 0.2 part. Foundry manufacturer 2nd place: uses cupola furnace with diameter 0.8 m. and the Flue height 14 m. Manufacturing has furnace filling material ratio as following, Cast steel scrap 4 parts, Old Engines 1.5 parts, Mild steel scrap 1 part, Anthracite Coke 0.8 part and Limestone 0.15 part. The qualification of grey cast iron both of two manufacturers were found the composition of grey cast iron is Low Alloy which suitable for work small or medium size that does not receive much vibration. Providing desired revamp about attribute of grey cast iron stronger, suitable for usability heat tolerant or corrosion tolerant were able to enhance the qualification of grey cast iron by increase quantity Nickel 15-20 % and or Chromium 3-5 % and or Silicon 5-7 % and or Aluminum 5-10 % added in composition of gray cast iron depending on each case so that suitability for usability** Keywordsâ€" Recycle Cast Iron, Chiang Mai Foundry, Grey Cast Iron
Energy-6	**Solar Power Plant Design Analysis Residential Electrical Loads** Noorly Evalina[1,]a, Rafli Fikri[2,] Faisal Irsan Pasaribu[3,] Abdul Azis Hutasuhut[4,] Nadilah Sary[5] [1,2,3)]Department of Electrical Engineering, University Muhammadiyah Sumatera Utara Jl. Kapten Mukhtar Basri postcode 20238, Medan Indonesia [a)]Corresponding author: noorlyevalina@umsu.ac.id **Abstract: The use of electrical energy in residential homes causes households to need electrical energy. To avoid using power plants that use fossil energy, new and renewable power plants are needed; in this case, with a very large potential for solar irradiation in Indonesia, off-grid solar power plants are one of the solutions that can be a solution to the use of this fossil energy. The research method used is to determine the amount of load installed on residential houses so that the capacity of solar panel modules, solar charge controllers, batteries, and inverters to be installed in the house can be determined. The stages in this study are determining electrical power needs, determining solar panel capacity, determining battery needs, determining inverter capacity, and analyzing the initial investment that must be made. The purpose of this study is to analyze installed solar power plants to provide electrical energy for installed loads on homes so that solar power plants can be used as a solution to overcome the use of conventional electrical energy in residential homes. The panel installed is a type of monocrystalline solar panel with a capacity of 3270 Wp, a battery capacity of 19200 Ah, and an inverter capacity of 5 kVA, or 4 kW.** Keywords: solar panel, Solar Charge Controller, Battery, Inverter, loads
Energy-7	**The Relationship between CO2 Emissions and Economic Growth in Indonesia** **Dewi K Purnomo[1,] Wisnu Wibowo[2]** [1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia [2]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia dewikarina.purnomo-2019@feb.unair.ac.id **Abstract: This study examines the causal relationship between CO2 emissions and economic growth in Indonesia. Referring to the analysis of the Solow model, the control variables in the form of population growth, gross fixed capital formation, and gross savings are used. The analytical method used is a quantitative approach with the Vector Error Correction Model (VECM) method which focuses on the Granger Causality Test, using time series annual data starting from 2001 to 2021 with Indonesia as the country series. The results show a one-way causality relationship between CO2 emissions and economic growth, where the CO2 emission variable as the independent variable influences the economic growth variable as the dependent variable.** Keywords: CO2 Emission, Economic Growth, VECM, Granger Causality Test
Energy-8	**Hydrogen: Can it Replace Gasoline?**

	Nobutaka Ito Visiting Professor School of Renewable Energy. Maejo University, Thailand nobuito@mju.ac.th **Abstract: The global struggle for petroleum energy caused two oil crises. Mass burning consumption of petroleum has caused the problem of global warming due to the emission of a large amount of carbon dioxide. In order to reduce carbon dioxide emissions, which account for 60% of greenhouse gases, a shift to decarbonized energy has begun. And renewable energy (water, solar, wind, biomass) is attracting attention. Electric vehicles are attracting particular attention because they do not emit carbon dioxide gas while driving. The EU has declared that it will import only electric vehicles after 2035. However, if this condition is met, hydrogen-powered vehicles are possible, and even bio-fuel vehicles can be considered zero emissions from the viewpoint of carbon neutrality. In order to make electricity, it is necessary to generate electricity, and carbon dioxide gas is emitted in this process. Even an electric vehicle canâ€™t obtain electricity unless it generates electricity. It is necessary and important to win business in the global market, but we must not forget the original goal of building a decarbonized society. This paper provides an overview of the current status of electric vehicles, hydrogen vehicles, and bio-powered vehicles, examines, compares, and examines the problems and their causes for widespread use, and the current state of technology to deal with them, and determines which vehicles are truly environmentally friendly, suggests the direction to be taken for building a decarbonized society, along with the difference between business and original environmental problem- solving.** Keywords: De-carbonized society building, Next-era vehicle, Hydrogen energy, Gasoline alternative
Energy-9	**INVESTIGATING THE EFFECTS OF CNT/TIO2 PHOTOANODE MATERIAL ON DYE-SENSITIZED SOLAR CELLS USING AFZELIA XYLOCARP AND COLEUS** Maria Onyemowo [1,2,] Sabarikirishwaran Ponnambalam[1,2,] Yuwalee Unpaprom[2,3,] Rameshprabu Ramaraj[1,2] [1]School of Renewable Energy, Maejo University, Chiang Mai, 50290, Thailand [2]Sustainable Resources and Sustainable Engineering Research Lab, Maejo University, Chiang Mai, 50290, Thailand3Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand Corresponding Author Email: rrameshprabu@gmail.com **Abstract: Dye-sensitized solar cells (DSSCs) belong to the third generation of solar photovoltaics. These cells have the remarkable ability to convert sunlight into electricity and have been the focus of research for over two decades. One of the reasons for their popularity is their low cost, simple fabrication process, and non-toxicity. However, there is still room for improvement in the photoanode material of DSSC, and thus, this study aims to reduce the rate of electron recombination losses and minimize light scattering at the photoanode. To analyze the effects of Multi-Wall Carbon Nanotubes (MWCNTs) in TiO2 photoanode, natural dyes were extracted from young leaves of Coleus and Afzelia xylocarpa, which have a high carotenoid-to-chlorophyll ratio. Pigment analysis was conducted to determine the pigment concentration and composition of each dye sample. I-V characterization was carried out to evaluate the cell performance. The results of the study showed that the DSSC prepared using dye extract from Afzelia xylocarp had the highest photoconversion efficiency when compared to Coleus, with an Open Circuit Voltage (Voc) of 0.725 V, Short Circuit Current (Isc) of 0.035 mA, Fill Factor (FF) of 64%, and photoconversion efficiency (Î·) of 0.288%. Additionally, the MWCNT/TiO2 photoanode DSSC was found to enhance the efficiency of the solar cell by reducing the rate of electron recombination and light scattering.** Keywords: Afzelia xylocarpa, Coleus, DSSC, MWCNT, Natural dye
Energy-10	**Low-Cost Solar Energy Harvesting: A Study on Dye-Sensitized Solar Cells Using Inthanin Leaf Extract as a Natural Photosensitizer** **Maria Onyemowo [1,2,] Yuwalee Unpaprom[2,3,] Rameshprabu Ramaraj[1,2]** [1]School of Renewable Energy, Maejo University, Chiang Mai, 50290, Thailand [2]Sustainable Resources and Sustainable Engineering Research Lab, Maejo University, Chiang Mai, 50290, Thailand [3]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand Corresponding Author Email: rrameshprabu@gmail.com **Abstract: In an effort to combat environmental pollution and greenhouse gas emissions caused by the burning of fossil fuels, the world is actively pursuing renewable energy resources. Solar energy is the most abundant, continuously available form of renewable energy, and dye-sensitized solar cells (DSSCs) are being explored as an alternative to traditional silicon-based solar cells due to their low cost of materials, ease of production, and efficiency. The photoanode is a crucial component in DSSCs, and the main challenges faced by these solar cells are charge recombination and low light harvesting ability. The objective of this study is to investigate the efficacy of natural dyes as the sensitizer for the fabrication of DSSCs. Natural pigments were extracted from Inthanin leaves using the solvent extraction technique. The concentration and composition of the pigment were analyzed through pigment analysis utilizing UV a spectrophotometer. Inthanin has a higher chlorophyll a to b ratio. A higher chlorophyll a to b ratio has been shown to be associated with improved light harvesting and electron transport efficiency. This is because chlorophyll a is more efficient at transferring electrons to the electron transport chain than chlorophyll b. The higher chlorophyll a to b ratio could lead to improved**

	electron transfer to the photoanode. The photoelectric parameters of the DSSC were evaluated using I-V characterization. DSSCs coated with Inthanin dye extract produced a short circuit current density (Jsc) of 0.02 mAcm2, open circuit voltage (Voc) of 0.07 V, fill factor (FF) of 33 and an efficiency of 0.08%. Keywords: DSSC, Inthanin, Light harvesting, Natural dye, and Photoanode
Energy-11	**ANALYSIS OF ENERGY FLOWS AND ADDED VALUE OF CORN AGRO-INDUSTRY IN WEST PASAMAN, INDONESIA** Kiki Yulianto, Santosa, AzrifirwanDepartment of AgroIndustry Technology, Andalas University, Indonesia Corresponding Author: kikiyulianto@ae.unand.ac.id **Abstract: West Pasaman is one of the districts in West Sumatra Province that has abundant natural resource potential, one of which is corn. However, this potential has not been utilized optimally and there are still losses in production and post-harvest, as well as challenges in energy management and increasing product added value. This study aims to analyze energy flow and added value in corn agroindustry in West Pasaman as well as formulate strategies for managing energy flows and increasing product added value. The SWOT-AHP method is used to formulate strategies for managing energy flows and increasing product added value. The results showed that the energy flow from the corn agroindustry mainly comes from natural resources and fossil energy, while the added value produced is still low due to the production process that is not optimal and lack of waste utilization. Proposed strategies include the use of renewable energy, increased energy efficiency, waste management, and product diversification to increase added value. With improved energy flow management and increased product added value, it is expected that the corn agroindustry in West Pasaman can contribute to improving community welfare and regional development. This research can be a reference for the government and industry players in developing corn agro-industry in West Pasaman and improving the welfare of the surrounding community. In addition, this research can also contribute to increasing publications and IPR in the field of agro-industry and renewable energy.** Keyword: SWOT-AHP, Renewable Energy, Product Diversification
Energy-12	**The Impact of Electricity Consumption and Economic Growth on Carbon Dioxide Emissions in ASEAN-3** Dyah Ayu Palupi[1], Rudi Purwono[1] [1]Department of Economics, Universitas Airlangga, Jl. Airlangga No. 4-6, Surabaya, East Java, Indonesia Email dyah.ayu.palupi-2019@feb.unair.ac.id **Abstract: Economic growth causes environmental degradation because of development and industrialization in developing countries. This study aims to determine how the influence of electricity consumption and economic growth on CO2 emissions in ASEAN-3 countries (Indonesia, Malaysia and Thailand) by considering population variables. Although research on the relationship between electricity consumption and economic growth on CO2 emissions has progressed, existing research still shows mixed results. The analytical method used is a quantitative approach using the Vector Error Correction Model (VECM) method using panel data from 1990 to 2019. The results of the analysis show that (1) there is a significant positive between economic growth and CO2 emissions in the long term; (2) electricity consumption has a significant positive effect on CO2 emissions in the short and long term; and (3) the population has a significant positive effect on CO2 emissions in the short term.** Keywords: electricity consumption, economic growth, CO2 emissions
Energy-13	**Production of Rice Husk Pellets for Electricity Generation in Indonesia** Rusdianasari[1], Iwan Arissetyadhi[2], Yohandri Bow[3], Leila Kalsum[1], Aida Syarif[1], and Fatahul Arifin[4] [1] Renewable Energy Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia [2] PT PLN (Persero) UIW S2JB, Indonesia [3] Energy Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia. [4] Mechanical Engineering Department, Politeknik Negeri Sriwijaya, Jalan Srijaya Negara, Palembang, 30139 Indonesia. rusdianasari@polsri.ac.id **Abstract: The usage of renewable energy sources, such as biofuels, should be expanded. Given that the demand for fossil-fuel-derived fuels is rising year after year, and that these fuels are limited and expensive, numerous research and development efforts are underway to produce fuels that are less expensive, more ecologically friendly, and made from renewable natural resources. Rice husk, an industrial byproduct, has been underutilized and frequently pollutes the environment. As a result, efforts should be undertaken to convert rice husk waste into a more valuable commodity. Rice husks' carbon content has the potential to be transformed into fuel. Biopellets are an ecologically beneficial alternative fuel. This biopellet is created by crushing raw materials and using vegetable adhesives. In the boiler's co-firing process, biopellets will be combined with coal in a 100%:0% ratio, 99%:1%, 97%:3%, and 96%:4%. The boiler's performance is governed by the quality of bottom ash, which is checked both ultimately and proximally, and provides maximum energy**

	in the boiler while reducing the consumption of coal fuel. The results demonstrated that rice husk biopellets fulfilled the Indonesian National Standard (SNI 8951:2020) for co-firing in power plants. Keyword: biopellet, rice husk pellets, co-firing
Energy-14	**Green energy generation through NaOH pretreatment of swine manure and Limnocharis flava for biogas production** Jirakorn Katpraditsup[1]sup, Suwannachom Chatnarinsup[2]sup, Rameshprbu Ramarajsup[3]sup and Yuwalee Unpapromsup[2]sup sup[1] sup>Montfort College, Chiang Mai 50000, Thailand [2]Program in Biotechnology, Faculty of Science, Maejo University, Chiang Mai 50290, Thailand [3]School of Renwable Energy, Maejo University, Chiang Mai 50290, Thailand Corresponding author, E-mail: yuwaleeun@gmail.com **Abstract: Methanation is a process that converts organic waste into biogas, which can be utilized for green energy production. The quality of biogas, which is primarily composed of methane, carbon dioxide, and hydrogen sulfide, is a critical factor that determines its energy and economic value. The composition of biogas plays a crucial role in determining its suitability for various energy applications. This study investigated the potential of utilizing swine manure and Limnocharis flava for biogas production with the addition of NaOH pretreatment. The objective of this study was to evaluate the effect of NaOH pretreatment on biogas production and the methane content of these feedstocks. The results showed that the addition of NaOH pretreatment resulted in a significant increase in biogas production for both Limnocharis flava and swine manure. For co-digestion of Limnocharis flava and swine manure, the biogas production increased to 64% methane content with 1% NaOH pretreatment compared to native feedstocks. The increase in biogas production and methane content can be attributed to the increased solubility of organic compounds, improved mass transfer, and disruption of the lignocellulosic structure of the feedstocks due to NaOH pretreatment. Consequently, this study highlights the potential of utilizing low-cost feedstocks with NaOH pretreatment for biogas production, offering a sustainable approach to waste management and renewable energy generation.** Keywords: Low-cost feedstocks, NaOH pretreatment, biogas production, sustainable approach, waste management