The Conference Guide Book and Abstract

Building Optimism During The COVID-19 Pandemic : Preservation and Utilization of Biodiversity for Sustainable Development in Indonesia

Manokwari, November, 24-25th, 2021

International Conference and Indonesia Biologi Consortium Congress 2021

TUT WURI HANDAYANI

PAPUA BARAT
CINTAKU NEGERIKU

CONSERVATION INTERNATIONAL

KOBI
Konsorsium Biologi

UNIVERSITAS PAPUA

PT FREEPORT INDONESIA

Rundown
International Conference, Biodiversity Awards and Congress of KOBI 2021
Manokwari, 24-25th November 2021

First Day (Wednesday, 24th November 2021)-
Opening Ceremony

DATE	TIME	EVENT	VENUE	PIC
Wednesday, 24th November 2021	06.30 – 07.30 AM Jakarta Time/GMT+7	Opening Preparation and registration Diisi dengan video Unipa,	Mansinam Beach Hotel/ Zoom	OC Penerima Tamu
	07.30 – 07.40 AM Jakarta Time/GMT+7	Tarian penyambutan (pengalungan noken),		MC
	07.41 – 07.45 AM Jakarta Time/GMT+7	Opening Ceremony		
	07.46 – 07.50 AM Jakarta Time/GMT+7	Pray		
	07.51 – 07.55 AM Jakarta Time/GMT+7	Singing National Anthem "Indonesia Raya",		
	07.56 – 08.05 AM Jakarta Time/GMT+7	Opening Remark (Chairman of the Committee, Dr. Keliopas Krey)		
	08.06 – 08.15 AM Jakarta Time/GMT+7	Head of KOBI'S Speech (Prof. Dr. Budi Setiadi Daryono, M.Agr.Sc)		
	08.16 – 08.25 AM Jakarta Time/GMT+7	Rector's Speech (Dr. Meky Sagrim)		
	08.26 – 08.35 AM Jakarta Time/GMT+7	Governor's Speech and Opening (Drs. Dominggus Mandacan, M.Si.)		
	08.36 – 08.45 AM Jakarta Time/GMT+7	Papuan Traditional Dance		
	08.46 – 08.55 AM Jakarta Time/GMT+7	Photo session		
	08.55 – 09.05 AM Jakarta Time/GMT+7	Coffee break		

First Day (Wednesday, 24th November 2021)

DATE	TIME	EVENT	VENUE	PIC
Wednesday, 24th November 2021	09.00 – 09.30 AM Jakarta Time/GMT+7	Plenary 1 : Prof Charlie (Kebijakan di Papua Barat)		Rina/Yustina
	09.30 – 10.00 AM Jakarta Time/GMT+7	Plenary 2 : Prof Jatna Supriyatna (Sustainable Landscape in Papua:Harmonizing Conservation and Development		Notulensi : Deby
	10.00 – 10.30 AM Jakarta Time/GMT+7	Plenary 3 : Ir.M.J.Sadsoeitoeboen, M.Si (Banana Variation and Distribution in the Arfak Mountain		
	10.30 – 11.00 AM Jakarta Time/GMT+7	Plenary 4 : Victor Nikijulu, Ph.D (Using SocialCarrying Capacity to Sustain Papua's Tourisme Development		
	11.00 – 12.00 AM Jakarta Time/GMT+7	Discussion		
	12.00 – 13.00 AM Jakarta Time/GMT+7	Break Time		MC
	13.00 – 18.00 AM Jakarta Time/GMT+7	Conggres of KOBI and Curriculum Workshop		
	13.00 – 14.00 AM Jakarta Time/GMT+7	Parallel Session 1		
	14.00 – 15.00 AM	Parallel Session 2		

	Jakarta Time/GMT+7			
	15.00 – 16.00 AM Jakarta Time/GMT+7	Parallel Session 3		

Second Day (Thursday, 25th November 2021)

DATE	TIME	EVENT	VENUE	PIC
Thursday, 25th November 2021	06.30 – 07.00 AM Jakarta Time/GMT+7	Plenary 1 : Billy Mambrasar	Mansinam Beach Hotel/ Zoom	OC
	07.00 – 07.30 AM Jakarta Time/GMT+7	Plenary 2 : Robert Hewat, B.Sc, M.IntDev (Pengelolaan Ekosistem Mangrove dan Rawa)		OC
	07.30 – 08.00 AM Jakarta Time/GMT+7	Plenary 3 : Prof Eric N. Smith (Old and New World Coralsnakes (Squamata:Elapidae), a Journey of Discovery		
	08.00 – 08.30 AM Jakarta Time/GMT+7	Plenary 4 : Dr. Sebastien Allard		
	08.30-09.00 AM Jakarta Time/GMT+7	Plenary 5: PT. Freeport Indonesia		
	09.30 – 10.30 AM Jakarta Time/GMT+7	Discussion		
	10.30- 11.00 AM Jakarta Time/GMT+7	Coffe Break		
	11.00-12.00 AM Jakarta Time/GMT+7	Parallel Session 4		
	12.00- 13.00 AM Jakarta Time/GMT+7	Parallel Session 5		
	13.00- 14.00 AM Jakarta Time/GMT+7	Break Time		
	14.00- 15.30 AM Jakarta Time/GMT+7	Recomendation		
	15.30- 16.00 AM Jakarta Time/GMT+7	Biodiversity Awards		
	16.00- 17.00 AM Jakarta Time/GMT+7	Closing Ceremony : Awards Student Presenter Singing of "Tanah Papua" Pray Closing Statement (Dean's Speech, Markus H. Langsa, Ph.D)		

Parallel Session 1 Theme : Bioanthropology
Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Body Satisfaction of Indonesian Undergraduate Students	Kania Dewi Rafa[1]*, Sarah Nila[2] and Kanthi Arum Widayati[1]	1 Department of Biology, IPB University, Indonesia, 2 Department of Anthropology, University College London, United Kingdom
2	Perceived Aggressivity on Indonesian Male Face	Muhammad Isa Ananta[1]*, Andy Darmawan[1], Kanthi Arum Widayati[2] and Sarah Nila[3]	[1]Department of Science, Institut Teknologi Sumatera, Indonesia, 2Department of Biology, IPB University, Indonesia, 3Department of Anthropology, University College London, United Kingdom

3	Overview of the ethnobotany on the use of plants as a potential biopesticide in Indonesia	Whisnu Febry Afrianto1, Susanti Indriya Wati2, Taufiq Hidayatullah3, Rivandi Pranandita Putra4	1Ecosystem and Biodiversity (Ecosbio), 2Agricultural Development Polytechnic of Manokwari, 3Agricultural Development Polytechnic of Medan, 4Pre-Harvest Department, Indonesian Sugar Research Institute
4	Reproductive Profile Of Female Baduy, Kanekes Village	Eneng Nunuz Rohmatullayaly1*, Budi Irawan1, Bambang Suryobroto2	1Department Biology, Padjadjaran University, 2Department Biology, IPB University

Parallel Session 1 Theme : Biodiversity and Biosistematics.
Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Hair Color Pattern of Papua Cuscus (Genus Spilocuscus)	Aksamina Maria Yohanita1*, Kanthi Arum Widayati1, Bambang Suryobroto1, Tri Atmowidi1, Hiroo Imai2	1 Department of Biology, IPB University, Indonesia, 2Kyoto University
2	Identification of undergraduate biology students' tree thinking abilities to determine their understanding of phylogenetic tree biosystematics: a preliminary study	Satria Rahayu Putri1*, Topik Hidayat1, Amprasto1	1 Indonesian Education University (UPI)
3	The Correlation of Grasshopper (Insecta: Orthoptera: Acrididae) Diversity to Environmental Factors in Wonorejo Mangrove Forest, Surabaya	Widowati Budijastuti1*, Reni Ambarwati1, Nur Ducha1, Lisa Lisdiana1, Fida Rachmadiarti1, Syefrina Rosyada1, Widdi Ayu Rahmawati1, Maryati Mohamed2, Alona C. Linatoc2, Aqilah Awg Abdul Rahman2, Kamarul2, NurAtiqa2	1Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Negeri Surabaya, Kampus Unesa Ketintang, Surabaya, 60231, Indonesia, 2Department of Technology and Natural Resources, Faculty of Applied Sciences and Technology, Universiti Tun Hussein Onn Malaysia
4	Fish Diversity In The Bedog River, Bantul Regency, Yogyakarta Special Region	Agung Budiantoro, Muhammad Hafidz Romdoni, and Nurul Suwartiningsih	Biology Department, Faculty of Applied Sciences and Technology Ahmad Dahlan University, Yogyakarta

Parallel Session 1 Theme : Conservation of Natural Resources and Environment,
Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Ground Cover Vegetations in Gunung Baung Nature Park, East Java	Deden Mudiana1 & Esti E. Ariyanti2	Research Center for Plant Conservation - BRIN
2	Exploration and ex situ conservation of plant diversity from RPH Ngebel	Esti E. Ariyanti1, Nina D. Yulia2, Deden Mudiana3	Research Center for Plant Conservation - BRIN

3	The Conflict Of Human - Elephant (Elephas maximus Sumatranus), in Sibak Village, Mukomuko, Bengkulu Province	M. Oktama Syarifuddin1, Cassyta Dhiya Imtiyaaz1, Ramli Ramadhan1, Nirmala Ayu Aryanti1	1Department of Forestry, Faculty of Animal-Husbandry, University of Muhammadiyah Malang, Malang, Indonesia
4	Ecosystem Services Research Trends in Indonesia: A Bibliometric Analysis (1998-2020)	Najmi Firdaus1,2*, Supriatna3, Sonny Mumbunan5, Jatna Supriatna1,4	1Department of Biology, Faculty of Mathematics and Natural Sciences, University of Indonesia, 2Department of Biology Education, Faculty of Teacher Training and Education, University of Sultan Ageng Tirtayasa, 3Department of Geography, Faculty of Mathematics and Natural Sciences, University of Indonesia, 4Research Center for Climate Change, University of Indonesia, 5World Resources Institute Indonesia

Parallel Session 1 Theme : Structure and Development,
Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Reproductive Performance of a Fresh Water Papuan Fish, Nematalosa flyensis in the Rawa Biru, Merauke	Gratiana E. Wijayanti1*, Siti Rukayah1, Norce Mote2, Dwi Nugroho Wibowo1	1Faculty of Biology, Universitas Jenderal Soedirman, 2Faculty of Agriculture, Universitas Musamus
2	The Use of Protein Fraction of Gnetum Gnemon Seeds as Coating of Latex Sheets for Immobilisation of Mouse Sperms	Hery Haryanto1*, Steffanie Nurliana1 and Syarifuddin Syarifuddin1	1Universitas Bengkulu
3	Germ Cells Development in Osteochilus vittatus Exposed to Potassium Dichromate	Sharon Hillary1, Gratiana E. Wijayanti1,*	1Faculty of Biology, Jenderal Soedirman University
4	Vegetative Growth Response of Rice Sulutan and Rindang 2 Under the Shade Of Coconut Trees	Song Ai Nio1*, Grace EY Lumban Raja1, Yulianus R. Matana2, Regina R Butarbutar1	1Department of Biology, Faculty of Mathematics and Natural Sciences, University of Sam Ratulangi, 2 Indonesian Palm Crops Research Institute (IPCRI)-ICERD-IAARD Mapanget Street

Parallel Session 1 Theme : Microbiology and Health,
Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	The Effect of Reproductive Health Gymnastics on Menstrual Pain of Female Adolescents	Bahrah Bahrah[1*] and Yuni Subhi Isnaini[1]	Poltekkes Kemenkes Sorong

2	Intercalation of Cellulose Nanofiber from Aloe Vera Rind and Glycerol as Plasticizer in Kepok Banana Peel Starch Based Bioplastic	Dasumiati1, N Nilam Sari1and N Saridewi2	1. Department of Biology, Faculty of Science and Technology, Syarif Hidayatullah State Islamic University. Jakarta, Indonesia, 2. Department of Chemistry, Faculty of Science and Technology, Syarif Hidayatullah State Islamic University, Jakarta, Indonesia
3	Correlation Between Risk Perception and Anxiety Level During Covid-19 Pandemic in Indonesian Society	Dela Putri Amalia[1]*, Sarah Nila[2] and Kanthi Arum Widayati[1]	[1]Department of Biology, IPB University, Indonesia, 2Department of Anthropology, University College London, United Kingdom
4	The evaluation of viable adhering bacteria on oral sutures after chlorhexidine mouthwash treatment using turbidity measurement: an in-vitro study	Gema Gempita1*	1Universitas Padjadjaran

Parallel Session 2 Theme : Bioanthropology
Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Development of Learning Content Based on Local Wisdom Jungkit-Jungkit, North Sumatera, Indonesia	Salwa Rezeqi1*, Halim Simatupang1, Wasis Wuyung Wisnu Brata1, Widia Ningsih1, Abdul Rasyid Fakhrun Gani2, Muhammad Rivky Rasidi1, Figertana Hykmah Br. Bangun1	1Department of Biology, Faculty of Mathematics and Natural Science, Universitas Negeri Medan, 1Department of Biology, Faculty of Mathematics and Natural Science, Universitas Negeri Malang
2	Profile of Age at Menopause, Nutritional Status, And Socioeconomic of Women In Rancakalong Village, Sumedang Regency, West Java	Tia Fitrianti1, Budi Irawan2, Ruhyat Partasasmita2, Eneng Nunuz Rohmatullayaly2*	1 Major of Biology, Padjadjaran University, 2 Department of Biology, Padjadjaran University
3	Variation of Handedness and Creativity in Bogor Primary and Secondary School Students	Winati Nurhayu1*, Kanthi Arum Widayati2, Bambang Suryobroto2	1Institut Teknologi Sumatera, 2Institut Pertanian Bogor
4	Relationship between Empathy and Intelligence of Undergraduate Students in Indonesia	Nabila Dhiya Ulhaq[1*], Sarah Nila[2] and Kanthi Arum Widayati[1]	[1]Department of Biology, IPB University, Indonesia, 2Department of Anthropology, University College London, United Kingdom

Parallel Session 2 Theme : Biodiversity and Biosistematics
Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Diversity of Butterfies (Lepidoptera: Rhopalocera) In Various Forest Covers in Aek Nauli KHDTK, North Sumatra	Aida Fitriani Sitompul 1, Firda Fahira2, Elida Hafni Siregar 3	Departement of Biology, Faculty of Mathematics and Natural Sciences, Universitas Negeri Medan
2	Diversity of Home Garden Fruit Plants in Serambi Indah Village, West Langsa District, Aceh	Cut Azura Izatul Nufus, Zidni Ilman Navia*, Sara Gustia Wibowo	Program Studi Biologi, Fakultas Teknik, Universitas Samudra, Langsa
3	Diversity Of Macrobenthos Communities In Karang Jahe Rembang Beach Area	Nida Anisah, Sapto Purnomo Putro and Fuad Muhammad	
4	Tree Canopy Cover For Microclimate Temperature Reduction In Bandung City	Kukuh Sungkawa1, Marlon Ivanhoe Aipassa1, Sukartiningsih1, Yohanes Budi Sulistioadi1, Yosep Ruslim1	1Faculty of Forestry, Universitas Mulawarman

Parallel Session 2 Theme : Conservation of Natural Resources and Environment
Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	An endemic plant species of East Java, Smilax nageliana A.DC (Smilacaceae). A real conservation challenge	Siti Sofiah1, Luchman Hakim2, Iyan Robiansyah3	1) Post Graduate Student at Faculty of Mathematics and Natural Sciences - Brawijaya University, 2) Lecture at Faculty of Mathematics and Natural Sciences - Brawijaya University, 3)Research Center for Plant Conservation and Botanic Garden - National Research and Innovation Agency
2	The Importance of Mangroves Species at Bancaran Beach, Bangkalan Regency, Madura	Tarzan Purnomo*, Herlina Fitrihidajati, Winarsih, Sunu Kuntjoro, Dwi Anggorowati Rahayu, Widowati Budijastuti, Fida Rachmadiarti, Reni Ambarwati	Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Negeri Surabaya, Kampus Unesa Ketintang, Surabaya
3	Restored and Rehabilitated Mangroves Provides a Novel Refuge for Waterbirds Diversity in Kampung Blekok, Situbondo, East Java Province	Yuni Kartika Dewi1,2, Amin Setyo Leksono2,Catur Retnaningdyah2 and Endang Arisoesilaningsih2 *)	1Agribusiness Study Program, Agriculture Faculty, Universitas Abdurachman Saleh, Situbondo, 2Biology Department, Faculty of Mathematics and Natural Sciences, Universitas Brawijaya, Malang
4	Preliminary study and first evidence of presence of microplastics in julung fish (Hemiramphus lutkei), from Manokwari marine	Fitriyah Irmawati1, Ida Lapadi1, Tutik Handayani1, Shinta Werolilangi2	1 University od Papua, 2Hasanuddin University

Parallel Session 2 Theme : Structure and Development
Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Reproductive Capability of Red Jungle Fowl Offspring in the Community of Seluma District	Sutriyono1*, Edi Soetrisno1, Nurmeiliasari1, Dadang Suherman1	1 Department of Animal Science, Faculty of Agriculture, University of Bengkulu
2	Suitability Of Cikapundung River Water As A Medium For Eel (Angulilla Bicolor) Rearing	Wahyu Surakusumah, Hertien Soertikanti Koesbandiah, Yayan Sanjaya, Irvan Caherul Apendi	Biology Study Program, Fakultas Education of Mathematics and Natural Science, Universitas Pendidikan Indonesia
3	The Analysis of Schizozstachyum lima (Blanco) Stomatal Based on Altitude Differenciation	Evy Aryanti1,3*, Serafinah Indriyani2, Endang Arisoesilaningsih2, and Rodliyati Azrianingsih2	1 Doctoral Program Biology Department, Faculty of Mathematics and Natural Sciences, Brawijaya University, 2 Biology Departement, Faculty of Mathematics and Natural Sciences, Brawijaya University, 3 Biology Departement, Faculty of Mathematics and Natural Sciences, University of Mataram
4	Leaf morpho-anatomy variation between *Codiaeum variegatum* (L) Blume	Hayatul Fajri1*, Anisyah Yuniarti1	1Tanjungpura University

Parallel Session 2 Theme : Microbiology and Health
Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	The Pretreatment Effect of 8-Hydroxyquinoline and Cold Water on Chromosome of Oryza sativa var. Ciherang	Adibah I1, Salamah A1*, Dwiranti A1	1Cellular and Molecular Mechanisms in Biological System (CEMBIOS) Research Group, Department of Biology, Faculty of Mathematics and Natural Sciences Universitas Indonesia
2	Antagonistic Yeasts Isolated from *Citrus sinensis* var. Baby Pacitan	Livia Teja Laksmana[1], Catarina Aprilia[1], Dhira Satwika[1]*	1 Fakultas Bioteknologi, Universitas Kristen Duta Wacana, Yogyakarta
3	The Effects of Giving Methanolic Extracts of Tea Parasite and Mango Parasite on SOD (Superoxide Dismutase) and MDA (Malondialdehyde) Serum in Hypertensive Rats Induced DOCA-Salt	Nour Athiroh Abdoes Sjakoer[1], Nurul Jadid Mubarakati[1], Muhammad Maruf[1] and Nur Mufida[1]	[1]Islamic University of Malang
4	Viability and Morphology of Salmonella Typhimurium Atcc 49416 Exposed to Oil Sludge from Phytoremediation	Sri Rejeki Rahayuningsih, Nia Rossiana, Hanny Noerainy	MBI

Parallel Session 3 Theme : Molecular Biology and Biotechnology
Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Analysis of Magnesium Ion (Mg2+) Concentration Variation Effect on Wheat Chromosome Using Light Microscope	Adra Ahlina1, Fitri Nurchasanah, 1Andi Salamah, 1Astari Dwiranti	Universitas Indonesia
2	The potential of MatK gene for genetic diversity in ramie (Boehmeria nivea (L)	Annisa Annisa1*, Rafida Inas Fairuz1, Joko Kusmoro1, Budi Irawan1	1Universitas Padjadjaran
3	Genetic Diversity of Birds Blue-Winged Leafbird (Chloropsis cochinchinensis) Based on Gen Coi	1Apin Saputra, 1Jarulis, 1Risky Hadi Wibowo, 1Choirul Muslim, 1Santi Nur kamilah	Department of Biology, Faculty of Mathematics and Natural Sciences, Bengkulu University
4	DNA Barcode Research Trend: the Promise to Uncover Indonesia's Biodiversity	Dwi Sendi Priyono1, 2*, Tuty Arisuryanti 1, Donan Satria Yudha1	1 Faculty of Biology, Universitas Gadjah Mada, 2 Widlife Conservation Society – Indonesia Program

Parallel Session 3 Theme : Biodiversity and Biosistematics
Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Diversity of snake fruit in east java as a bioculturall keystone species based on use value	Novita K Indah[1]*, Serafinah Indriyani[2], Estri Laras A[2], Rodiyati Azriyaningsih[2]	[1] Surabaya State University (unesa), 2 Brawijaya University
2	Diversity Of Shrimp In Gajahwong River, Bantul Regency, Special Region Of Yogyakarta	Nurul Suwartiningsiha*, Ayu Kartika Fitrib, Agung Budiantoroa	aLaboratory of Ecology and Systematics, Biology Department, Faculty of Applied Science and Technology, Universitas Ahmad Dahlan, Yogyakarta, bBiology Department, Faculty of Applied Science and Technology, Universitas Ahmad Dahlan, Yogyakarta,
3	Iktiofauna Perairan Tawar di Kawasan Taman Nasional Bogani Nani Wartabone dan Sekitarnya, Gorontalo-Sulawesi Utara	Rusdianto*, Sopian Sauri	Museum Zoologicum Bogoriense (MZB), Pusat Penelitian Biologi, Lembaga Ilmu Pengetahuan Indonesia
4	Changes in butterfly biodiversity and species composition in rubber and oil palm plantation compared to stream side forest near the Leuser National Park	Syarifuddin1*, Elida Hafni Siregar1*, Marlinda Nilan Sari Rangkuti1, Nanda Pratiwi1, Aida Fitri Sitompul1	1 Universitas Negeri Medan

Parallel Session 3 Theme : Conservation of Natural Resources and Environment
Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	New Approach in the assessment of species conservation status and its application on the Papua's endemic rainbowfishes	Henderite L. Ohee1, Jatna Supriatna2, Yance de Fretes3	1Biology Department, Cenderawasih University, 2Biology Department, Indonesia University, 3Conservation International Indonesia
2	The development of mangrove ecotourism in Jaring Halus Village is an effort to improve the fishermen's economy with their involvement in preserving the mangrove ecosystem.	Mufti Sudibyo, Khairiza Lubis, Dwi Wahyuni Nurwihastuti, Onggal Sihite	
3	Microplastic contamination of water networks, aquatic fauna, and interactions with heavy metals in the streams of Rawa Jombor Reservoir	Rita Rahmayanti1*, Andhika Puspito Nugroho1*	1Universitas Gadjah Mada
4	Kemajuan Kegiatan Penelitian Dan Konservasi Herpetofauna Di Papua Dan Papua Barat Berdasarkan Rekomendasi Conservation Priority-Setting Workshop (Cpsw) 1997	Deby Aprilia Kareth	Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Papua, Manokwari

Parallel Session 3 Theme : Structure and Development
Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Response of Two Biostimulan on True Shallot Seed (TSS) Seedling in Laboratory	Imas Rita Saadah1, Astiti Rahayu1, Juniarti P. Sahat1, Astria Windia Wulandari1, Hadis Jayanti2, Dwi Ningsih Susilowati3, Chotimatul Azmi1*	1 Indonesian Vegetables Research Institute, 2 The Bali Agricultural Technology Study Center, 3 Indonesian Center for Agricultural Biotechnology and Genetic Resources and Development
2	The Dynamics of Expression of Xyloglucan Endotransglucosylase / Hydrolase (Xth) and Lateral Root Primordium 1 (Lrp1) Genes and Physiological Responses of Several Tobacco Varieties (Nicotiana Tabacum L.) In Flooding Stress	Tutik Nurhidayati, Hery Purnobasuki, Sucipto Hariyanto and Vita Siti Fatimah	
3	Establishing protocol for somatic embryo germination of Arabica coffee	Rina Arimarsetiowati1,2 and Endang Semiarti1	1 Graduate Study Program, Faculty of Biology, Gadjah Mada University, 2Indonesian Coffee and Cocoa Research Institute, Jember

4	Indonesian Microhyla heymonsi (Amphibia: Anura: Microhylidae) in a veil	Rury Eprilurahman1*, Amir Hamidy2, Tuty Arisuryanti1, Eric N. Smith3, Rosichon Ubaidillah2	1 Faculty of Biology, Universitas Gadjah Mada, 2 Museum Zoologicum Bogoriense, Research Center for Biology, Indonesian Institute of Science, 3Amphibian and Reptile Diversity Research Center and Department of Biology, University of Texas at Arlington, USA

Parallel Session 3 Theme : Microbiology and Health
Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Isolation of Antagonistic Yeast from Citrus nobilis and its Inhibitory Effect on Pathogenic Fungi	Vina Evianti Ririassa[1], Catarina Aprilia Ariestanti[1], Dhira Satwika[1*]	[1]Fakultas Bioteknologi, Universitas Kristen Duta Wacana, Yogyakarta
2	Screening Test For Hepatitis B And C In Patients At Bhayangkara Hospital	Dina Amelia1, Nuroh Najmi2*, Apriani3, Adelia Febriyossa 4	1 Program Studi D III Teknologi Laboratorium Medis STIKes Kesetiakawanan Sosisal Indonesia, 2* Departemen Oral Biologi, Fakultas Kedokteran Gigi Universitas Padjadjaran Bandung, 3 Program Studi D III Teknologi Laboratorium Medis STIKes Kesetiakawanan Sosisal Indonesia, 4 Program Studi D III Teknologi Laboratorium Medis STIKes Kesetiakawanan Sosisal Indonesia
3	The Influence of Floating Net Cage oh The Distribution of Nitrogen Bacteria in the Jatiluhur Reservoir	Keukeu Kaniawati Rosada1*, Nining ratningsih1	1 Universitas Padjajaran
4	Determination of standards requirements for tree canopy cover for environmental conservation in Bandung city	Kukuh Sungkawa1, Marlon Ivanhoe Aipassa1, Sukartiningsih1, Yohanes Budi Sulistioadi1, Yosep Ruslim1	1Faculty of Forestry, Universitas Mulawarman.

SECOND DAY

Parallel Session 4 Theme : Bioanthropology
Time :10.00 – 11.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Revealing the cultural heritage of Buah Hitam for culture and nature conservation in Teluk Wondama, West Papua, Indonesia	Agustinus Murdjoko, Antoni Ungirwalu, Zulfikar Mardiyadi, Max Jondudago Tokede, Dony Aristone Djitmau1, 2, Nithanel Mikael Hendrik Benu3, Jacobus Wanggai1, Bernadus Bennedictus Rettob1	1. Universitas Papua, Universitas Papua, 2. Pusat Penelitian Keanekaragaman Hayati (PPKH), 3Balai Penelitian dan Pengembangan Lingkungan Hidup dan Kehutanan (BP2LHK) Manokwari
2	Traditional Ecological Knowledge Of Sawe Tribe In Sawe Suma Village, Papua, Indonesia		1. Department of Biologi, Faculty of Mathematics and Natural Sciences, University of Papua
3	Early Menopause: Reproductive Adaptation of Javanese Women in West Papua	Eka Dewi Kusumawati1, Elda Irma Jeanne Joice1*, Eneng Nunuz Rohmatullayaly2, Indah Ratih Anggriyani1, Feny Mayana Paisey3	1. University of Papua, 2. Padjajaran University, 3Dinas Kesehatan Provinsi papua Barat
4	Ethnozoological Study In Mubri Wariori Village's Community North Manokwari District Manokwari Regency West Papua Province	Denisa Taran1, Saremay Sawaki1, Fransiskus Taran1, Robi Bomoi1	1 Fakultas Kehutanan Universitas Negeri Papua

Parallel Session 4 Theme : Biodiversity and Biosistematics
Time : :10.00 – 11.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Keanekaragaman Odonata Di Sekitar Pegunungan Arfak, Papua Barat	Ade Rahayu Pattiran	
2	Pengaruh Perubahan Fungsi Hutan Terhadap Keanekaragaman Katak	Asmaul Nur Apsyari	Program Strudi Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Papua
3	Composition And Distribution Of Merbau (*Intsia bijuga*. O. Ktze) in The Coastal Area Of Mansinam Island	Abdul Mad Puarada[1], Antoni Ungirwalu[1*], Julius D. Nugroho[1], Elieser V.E Sirami[2], Novita Panambe[3], Doni A. Jitmau[1], and Aditya Rahmadaniarti[1]	[1]Fakultas Kehutanan Universitas Papua, 2 Universitas Papua, Pusat Penelitian Keanekaragaman Hayati (PPKH), 3 Program Studi D3 Manajemen Hutan Alam Produksi Fakultas Kehutanan UNIPA
4	Bird Diversity and Potential for the Preparation of a Forest Management Plan of Ubadari Village In Fakfak	Agustinus Kilmaskossu[1] dan Hendrik Burwos[2]	[1]Jurusan Biologi, FMIPA Universitas Papua, 2Alumni FAHUTAN Universitas Papua

Parallel Session 4 Theme : Conservation of Natural Resources and Environment
Time : 10.00 – 11.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Conservation effort of Akway (Drimys spp.) by Kwau Village Community in Warmare District, Manokwari	Rofiqo Asnah1, Francina Kesaulija1*, Bernadetta Sadsoeitoeboen1*	1Fakultas Kehutanan Unipa
2	Species Invasive In Secondary Forests For Increasing Soil Fertility In Inoduas Village	Heru Joko Budirianto1*, Yuliance Fanataf1, Insar Damopolii2	1Department of Biology, faculty of mathematics and natural sciences, University of Papua, 2Department of Biology Education, Faculty of Teacher Training and Education, University of Papua
3	Carbon Estimation Of Seagrass Cymodocea rotundata at Rendani Beach, Manokwari Regency, West Papua Province	Sisilia N.Y. Mudarehi1, Agatha C. Maturbongs1, Paskalina Th. Lefaan1, Maria .J. Sadsoeitoeboen1, Agustinus Kilmaskossu1, Fajar R.D.N Sianipar1, Emmanuel Manangkalangi2, dan Johanis P. Kilmaskossu3	1Program Studi Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Papua, 2Program Studi Manajemen Sumber Daya Perairan, Fakultas Perikanan dan Ilmu Kelautan, Universitas Papua, 3Program Studi Pendidikan Biologi, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Papua
4	Paradise Island Undercover: community-based conservation in Raja Ampat	Yanuar Ishaq D Cahyo1, Maurits Kafiar1, Rivaldo David Patty1, Partolongan Manalu2, Muhammad Wahyu Hasibuan2, Muhammad Imron Mustadjab2	1Fauna & Flora International's Indonesia Programme, 2Balai Besar Konservasi Sumberdaya Alam Papua Barat

Parallel Session 4 Theme : Structure and Development
Time : 10.00 – 11.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	The Last Mangrove of Mansinam Island and Structural Stand Based on Spatial Distribution Type	Juniar G. Pratama[1], Antoni Ungirwalu[1*], Francina F. Kesaulija[1], Elieser V.E Sirami[2], Francin L. Hematang[1]	[1]Universitas Papua, Fakultas Kehutanan, 2 Universitas Papua, Pusat Penelitian Keanekaragaman Hayati (PPKH)
2	Genetic diversity of LDLR gene in indigenous people of Papua and its implications on native Papuan population haplogroups	Achmad Taher1*, Misbahul Munir1, Asri Saffanah Pratiwi1	1University of Papua
3	New Record on *Spilocuscus rufoniger* distribution and its potential threat in Kabupaten Teluk Wondama	Yohanes Wibisono[1]*, Permenas Dimomonmau[2], Richard GN Triantoro[2], Anton S Sineri[3], Fredy J Hutapea4, Agustinus Kilmaskossu3	[1]Center for Forest Biotechnology and Tree Improvement, 2Balai Penelitian dan Pengembangan Lingkungan Hidup dan Kehutanan Manokwari, 3Environmental Research Center of Papua University, 4Balai penelitian dan pengembangan lingkungan hidup dan kehutanan Aek Nauli
4	Karakteristik Hemipenis Sauria New Guinea: *Lamprolepis smaragdina* (Scincidae) DAN *Hypsilurus dilophus* (Agamidae)	Elisa Secsio Hendra Putra1, Keliopas Krey2*	1Mahasiswa Program Studi Biologi, Fakultas Matematika Ilmu Pengetahuan Alam, Universitas Papua, 2 Dosen Program Studi Biologi, Fakultas Matematika Ilmu Pengetahuan Alam, Universitas Papua,

Parallel Session 4 Theme : Microbiology and Health
Time : 10.00 – 11.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Isolation And Identification Of *Salmonella* sp. Bacteria In Purebred Chicken Eggs Sold In Manokwari Traditional Market	Teresya Amelia Langsa[1)], Maria Massora[1)], Rina Anita Mogea[1)], Yenni Yendri. Salosa[1)]	1) Prodi Biologi FMIPA UNIPA
2	Identification of Lactic Acid Bacteria from Cabbage (Brassica oleracea) Waste Fermentation	Marce Tuhehay1, Maria Massora2, Yenni Yendri Salosa3, and Rina A. Mogea4	1 Alumni of Biology Department of Mathematics and Science Faculty University of Papua: Biology Department of Mathematics and science Faculty University of Papua, 2,3,4 Lecturer of Biology Department of Mathematics and Science Faculty University of Papua: Biology Department of Mathematics and Science Faculty University of Papua
3	Phytochemicals And Antioxidant Activity Of Kebar Grass (Biophytum petersianum Klotszch) Aquadest Extracts	Meike M Lisangan1*; Gino N Cepeda1; Novelia Rumansara1	1 Faculty of Agricultural Technology, Papua University, Indonesia
4	Hand Preference And Creativity Of Papua University Student	Vionita Putri[1], Elda Irma Jeanne Joice Kawulur[2*], Febriza Dwiranti[3], Sabarita Sinuraya[4], Sita Ratnawati[5]	Biology Departement Mathematic and Natural Science Faculty Papua University, Manokwari, Indonesia

Parallel Session 5 Theme : Biodiversity and Biosistematics
Time :11.00 – 12.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Mangrove Vegetation and Mangrove Litter Production of *Rhizophora stylosa* and *Sonneratia alba* in Wasti Lake, Manokwari Regency	Gema Rina Elungan1*, Fanny F C Simatauw1, Fitriyah I E Saleh1	1 Fishery resource management University od Papua
2	Banana Variations and its Utilization in the Lowlands of Manokwari Regency	J.P. Kilmaskossu[1)], M. J. Sadsoeitoeboen[2)], F.R.D.N. Sianipar[2)], Paskalina Th. Lefaan[2)], Agatha C. Maturbongs [2)] Simeon Abdi Putra[3)], Nelson P. Weyai[4)] dan Sisilia N. Mudarehi [4)]	[1)] Dosen Pendidikan Biologi FKIP UNIPA, [2)] Dosen Jurusan Biologi FMIPA UNIPA , [3)]Alumni Biologi FMIPA UNIPA dan [4)] Mahasiswa Jurusan Biologi FMIPA UNIPA
3	Biodiversity of butterfly (lepidoptera: papilionoidea) in oil palm plantation in concession area of pt. Henrison inti persada (pt. Hip) sorong west papua	Rawati Panjaitan1 and Simon Sutarno2	1;2 Biology Department, University of Papua Manokwari
4	Banana Varieties Affected With Blood Disease Bacterium (Blood Disease Bacterium) in Bowi Subur Village. Manokwari Regency	Nelson Paskal Weyai[1], Maria Justina Sadsoeitoeboen[2], Fajar Ria Dwi.Natalia Sianipar[3], Simon Sutarno[4], Agatha Cecilia Maturbongs[5]	Jurusan Biologi, Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Papua
5	Herpetofauna from Ubadari Village Forest, Fak Fak	Keliopas Krey1, *, Hendrik Burwos 2, Petrus Tawurutubun 3	1 FMIPA Biologi, Universitas Negeri Papua, 2 Consultant, 3 KPHP Fakfak

Parallel Session 5 Theme : Conservation of Natural Resources and Environment
Time :11.00 – 12.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Pengaruh Kegiatan Masyarakat Terhadap Keanekaragaman Herpetofauna Di Sekitar Taman Wisata Alam Gunung Meja Kabupaten Manokwari	Zinnia Leoni Dimomonmau	Fakultas Matematika dan Ilmu Pengetahuan Alam, Universitas Papua
2	Study of Water Quality of the Mako-Mako River as a Raw Water Source for Clean Water in Yembekiri Village	Bertha Mangallo 1*, Devi Oktaviani 1*	1 University of Papua
3	Criteria for Assessing the Capacity of Coral Reef Ecosystem of Nusmapi Island Manokwari	Astriet Y. Manangkoda 1, Vera Sabariah 2*, Paulus Boli 3, Ridwan Sala 2, Rina Mogea 3, Simon P.O Leatemia 2	1 Kantor Balai PPIKHL Wilayah Maluku Papua, Manokwari, 2 Fakultas Perikanan dan Ilmu Kelautan (FPIK) UNIPA, Manokwari, 3 Program Pascasarjana (PPs) UNIPA, Manokwari
4	Tree canopy cover for microclimate temperature reduction in Bandung City	Kukuh Sungkawa1, Marlon Ivanhoe Aipassa1, Sukartiningsih1, Yohanes Budi Sulistioadi1, Yosep Ruslim1	1Faculty of Forestry, Universitas Mulawarman
5	Identifikasi Cacing Tanah di Taman Wisata Alam Gunung Meja Manokwari	Kemesrar, U., Ratnawati, S., Sabarita, S.	Jurusan Biologi, Fakultas Mipa, Universitas Papua

Parallel Session 5 Theme : Molecular Biology and Biotechnology
Time :11.00 – 12.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	Surface Sterilization To Isolate Endophytic Fungi From Mango's mistletoe Leaves (*Dendrophtoe pentandra* (L.) Miq)	Nour Athiroh Abdoes Sjakoer [1], Nurul Jadid Mubarakati[1], Ari Hayati [1], Nur Anizah [1]	[1] Islamic University of Malang
2	In Silico Study of Chenodeoxycholic acid 3-sulfate from Eel (Anguilla bicolor bicolor) against human Angiotensin-converting Enzyme 2 (ACE2) for COVID-19 Drug Development	Hasna Shalihah Ash Shiddiqiyah1, Hernawati1, Trina Ekawati Tallei 2, Diah Kusumawaty 1*	1 Department of Biology, Faculty of Mathematics and Natural Sciences Education, Universitas Pendidikan Indonesia, Bandung, 2 Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Sam Ratulangi, Manado
3	The Pretreatment Effect of 8-Hydroxyquinoline and Cold Water on Chromosome of Oryza sativa var. Ciherang	Adibah I 1, Salamah A1*, Dwiranti A1	1 Cellular and Molecular Mechanisms in Biological System (CEMBIOS) Research Group, Department of Biology, Faculty of Mathematics and Natural Sciences, Universitas Indonesia
4	Genetic Variation Enggano Hill Myna (Gracula religiosa enganensis) based on mitochondrial DNA 12S rRNA	Jarulis 1, Tiara Enice 2, Sipriyadi 1, Risky Hadi Wibowo 1, Santi Nurul Kamilah 1	1 Department of Biology, FMIPA, Bengkulu University, 2 Undergraduate student at Department of Biology, FMIPA, Bengkulu University

Parallel Session 5 Theme : Microbiology and Health
Time :11.00 – 12.00 AM (Jakarta Time/GMT+7)

No	Topic	Presenter	Institution
1	The Potential Of Propolis As A Corrosion Inhibitor Caused By Bacteria In Various Types Of Metals	[1]Ni Luh Watiniasih, [2]I Nyoman Budiarsa, [3]I Made Merdana, [2]I Nyoman Gde Antara	[1] Biology Study Program, Faculty of Mathematics and Natural Sciences, Udayana University, Bali, Indonesia, 2 Study Program of Mechanical Engineering, Udayana University, Bali, Indonesia, 3 Faculty of Veterinary Medicine, Udayana University, Bali, Indonesia
2	The Effect of Extract of cell culture Rejasa (Eleocarpus grandiflorus) on Blood Glucose Level	Noor Aini Habibah1, WH Nugrahaningsih2,*, Ika Fitria Ariyani 2	1 Plant Tissue Culture Laboratory of Biology Department Universitas Negeri Semarang, Indonesia, 2 Physiology Laboratory of Biology Department Universitas Negeri Semarang, Indonesia
3	Mini Review: Developmental Detection Methods of Klebsiella pneumoniae For the Future Perspective	Dinda Fluor Agustin, Mariana Wahjudi*	Faculty of Technobiology University of Surabaya
4	Characteristics Of *Pandanus Tectorius* Park. Bio-Briquette As Renewable Energy Source	Helmy Yohanes Setiabudi1, Fence aidore1, Marsia A.R. Rumateray1, Nurhaidah Iriany Sinaga1, Zita Letviany Sarungallo2, Diana Nurini Irbayanti2, Cicilia Maria Susanti1*	1 Forest Product Laboratory Faculty of Forestry University of Papua, 2 Agriculture Product Technology Laboratory Faculty of Agriculture Technology University, 3 Agribusiness Laboratory Faculty of Agriculture University of Papua

KATA PENGANTAR

(PREFACE)

Puji syukur atas kemurahan Tuhan, Universitas Papua dapat menyelenggarakan Konferensi Internasional Konsorsium Biologi Indonesia tahun 2021 yang sangat bersejarah ini. Perlunya harmonisasi penelitian dan desiminasi hasil-hasil penelitian guna mewujudkan peningkatan kualitas dan kuantitas publikasi ilmiah. Tentunya dalam mengembangkan akademik dan kemampuan keilmuan diperlukan ruang-ruang yang dinamakan ilmu pengetahuan. Harmonisasi kemajuan global dari ilmu pengetahuan dan teknologi dalam konferensi internasional ini diperlukan untuk mendorong upaya bersama penyelamatan bumi kita yang hanya satu ini.

Universitas Papua menyelenggarakan pendidikan tinggi yang terkait dengan bidang keilmuan sains dan teknologi. Bidang ini sangat penting sebagai dasar dalam menunjang bidang ilmu aplikatif lainnya termasuk menunjang pelestarian lingkungan dan pemanfaatan biodiversitas.
Dewasa ini, kita dapat melihat pemanfaatan biodiversitas dilakukan besar-besaran, tanpa atau kurang memperhatikan aspek pelestarian. Padahal keduanya harus berjalan bersama untuk menjaga keseimbangan dalam pembangunan berkelanjutan secara global.

Konferensi internasional ini bertujuan untuk: 1) Mendukung pembangunan berkelanjutan (*sustainable development*) secara global untuk kemaslahatan umat manusia; 2) Meningkatkan daya saing riset unggulan dan publikasi ilmiah dalam bidang biodiversitas dan biosistematika, konservasi sumber daya alam dan lingkungan, biologi molekular dan bioteknologi, mikrobiologi dan kesehatan, serta bioantropologi; 3) Membina kerjasama antar institusi riset, peneliti, akademik, pemerintah dan lembaga swasta dalam mendorong upaya perlindungan plasma nutfah Tanah Papua, 4) Mendorong partisipasi para peneliti muda untuk mengaktualisasi kemampuan dan pengalaman deseminasi ilmiah pada tingkat internasional.

Akhir kata, melalui Konferensi Internasional Konsorsium Biologi Indonesia tahun 2021 diharapkan semua pihak baik institusi riset, peneliti, akademik, pemerintah dan lembaga swasta, dosen, mahasiswa, guru, praktisi, dan masyarakat luas dapat memperoleh manfaat keilmuan yang signiifikan dalam pemanfaatan dan penyelamatan biodiversitas di bumi.

Manokwari, 24 November 2021

Ketua Panitia

Dr. Keliopas Krey, S.Pd., M.Si
NIP. 197904142002121003

SAMBUTAN REKTOR UNIVERSITAS PAPUA

Manokwari, 24 November 2021

Syaloom,
Assalamu'alaikum Warahmatullahi Wabarakatuh,
Om Swastiastu, Namo Budaya,
Salam Kebajikan dan salam Sejahtera bagi kita semua

Yang saya hormati:

1. Gubernur Papua Barat
2. Bupati Kabupaten Manokwari
3. Forum Komunikasi Pimpinan Daerah Provinsi Papua Barat
4. Forum Komunikasi Pimpinan Daerah Kabupaten Manokwari
5. Pimpinan OPD Provinsi Papua Barat dan Kabupaten Manokwari
6. Para Guru Besar Universitas Papua
7. Para Dekan di lingkup Universitas Papua
8. Pimpinan Perguruan Tinggi Negeri dan Swasta di Papua Barat
9. Para Dosen Perguruan Tinggi Negeri dan Swasta di Papua Barat
10. Kepala Balai Besar Konservasi Sumber Daya Alam Papua Barat
11. Kepala Balai Taman Nasional Teluk Cendrawasih
12. Kepala-kepala SMA se-Kabupaten Manokwari
13. Para Pembicara Utama dari dalam maupun luar negeri
14. Para hadirin dan saudara-saudari peserta Konferensi Internasional dan Rapat Koordinasi Nasional Konsorsium Biologi Indonesia

Pertama saya mengajak kita semua untuk memanjatkan Puji dan Syukur ke hadirat Tuhan Yang Maha Kuasa atas kasih dan kebaikanNya kita semua dimungkinkan hadir secara luring di tempat ini maupun secara daring untuk mengikuti acara **Konferensi Internasional dan Rapat Koordinasi Nasional Konsorsium Biologi Indonesia Tahun 2021.**

Pada kesempatan ini, saya ingin menyampaikan terima kasih kepada Gubernur Papua Barat (Drs. Dominggus Mandacan, M.Si), Kepala Balitbangda Papua Barat (Prof. Dr. Charlie Heatubun), Ketua Konsorsium Biologi Indonesia (Prof. Dr. Budi Daryono), Ketua Panitia (Dr. Keliopas Krey). Trima kasih dan penghargaan juga saya ucapkan kepada seluruh sponsor Konferensi Internasional ini yaitu Balitbangda Papua Barat, Konsorsium Biologi Indonesia, Conservation International, dan Freeport Indonesia. Saya juga menyampaikan salam dan selamat datang bagi para Peneliti Muda di Tanah Papua.

Bapak, Ibu, Hadirin yang saya hormati,

Untuk kemaslahatan manusia dan planet bumi kita yang hanya satu ini, *United Nations* atau Perserikatan Bangsa Bangsa telah menetapkan tujuan pembangunan berkelanjutan atau *Sustainable*

Development Goals (SDGs) dengan 17 tujuan (termasuk didalamnya adalah pengentasan kemiskinan dan kelaparan, perbaikan kesehatan, dan pendidikan, pembangunan kota yang lebih berkelanjutan, mengatasi perubahan iklim, serta melindungi hutan dan laut) dan 169 capaian sebagai agenda pembangunan dunia hingga tahun 2030. Pemerintah Indonesia telah meratifikasi SDGs melalui Inpres nomor 6 tahun 2017 sehingga kita semua sebagai warga negara Indonesia perlu mendorong tujuan pembangunan berkelanjutan itu dimanapun kita berada dan bekerja termasuk sivitas akademika Universitas Papua. Pembangunan berkelanjutan bertujuan pada terwujudnya keberadaan Sumber Daya Alam (SDA) untuk mendukung kesejahteraan anak cucu kita pada masa depan.

Para hadirin yang saya hormati,

Perkembangan teknologi dan informasi semakin sangat pesat saat ini. Kita semua harus menghadapi era ini, era revolusi industri 4.0, era dimana internet menjadi alat untuk berpikir atau internet untuk bekerja. Oleh karena itu, kita semua dituntut untuk lebih bijak, cerdas dan berbudaya dalam menggunakan internet apalagi untuk mempromosikan pembangunan berwawasan lingkungan bagi kemaslahatan seluruh manusia di dunia. Mari kita semua mendorong pelestarian hutan-hutan di Indonesia termasuk Tanah Papua yang merupakan paru-paru dunia.

Para hadirin yang saya hormati,

Tanah Papua yang kaya akan biodiversitas spesies atau jenis-jenis flora maupun fauna telah menempatkan reputasi istimewa bagi Indonesia sebagai salah satu ‘negara terkaya biodiversitas’ di dunia. Dewasa ini, kita dapat melihat pemanfaatan biodoversitas dilakukan besar-besaran, tanpa atau kurang memperhatikan aspek pelestarian. Padahal keduanya harus berjalan bersama untuk menjaga keseimbangan dalam pembangunan berkelanjutan di tanah Papua. Tanah Papua khususnya Papua Barat memiliki biodiversitas yang cukup tinggi serta memiliki endemisitas flora dan fauna yang beragam. Provinsi Papua Barat memiliki beberapa kawasan konservasi, seperti Cagar Alam Pegunungan Arfak, Cagar Alam Pegunungan Tambrauw dan Cagar Alam Pegunungan Wondiboy yang mengandung potensi keanekaragaman yang tinggi. Cagar Alam ini mengandung banyak satwa endemis. Selain itu terdapat hutan mangrove terluas kedua di dunia yang terletak di Teluk Bintuni serta terdapat Hiu Paus di Taman Nasional Teluk Cenderawasih.

Bapak, Ibu, Hadirin yang saya hormati,

Visi UNIPA adalah “Pada Tahun 2035 Unipa menjadi Perguruan Tinggi Riset yang Mandiri, Bermartabat, Berjiwa Konservasi dan Berkarakter Wirausaha”. Melalui visi ini Universitas Papua menyelenggarakan pendidikan akademik yang terkait dengan bidang keilmuan sains dan teknologi. Bidang-bidang ini sangat penting sebagai dasar dalam menunjang bidang ilmu aplikatif

lainnya. Salah satunya dalam menunjang pelestarian lingkungan dan pemanfaatan biodiversitas. Di Provinsi Papua Barat telah dilakukan beberapa kegiatan pelestarian serta pemanfaatan keanekaragaman hayati, seperti penangkaran kupu-kupu sayap burung (*Ornithoptera paradisaea*), ekstrak *Pandanus conoideus*, *Akwai* (*Drymis* spp.), dan *Myrmecodia* sp. sebagai obat herbal. Kegiatan pembangunan yang dilakukan dengan tepat, dikombinasikan dengan sistem kawasan lindung terpadu, memungkinkan Provinsi Papua Barat memenuhi kebutuhan masyarakat dan pada saat yang bersamaan melestarikan kekayaan sumber daya hayati.

Hadirin yang saya hormati,

Tantangan besar UNIPA saat ini adalah Akreditasi Perguruan Tinggi. Selama ini belum pernah dilakukan akreditasi UNIPA. Patutlah kita bersyukur karena baru saja seluruh dokumen akreditasi UNIPA disubmit ke SAPTO. Konferensi Internasional ini merupakan salah satu agenda penting untuk mendukung akreditasi UNIPA.

Bapak, Ibu, Hadirin yang saya hormati,

Tema Konferensi Internasional ini adalah **"Membangun Optimisme Pasca Pandemi Covid-19: Pelestarian dan Pemanfaatan Biodiversitas untuk Pembangunan Berkelanjutan di Indonesia"**. Semoga tema ini memberi optimisme bagi kita semua dalam penelitian, pemanfaatan dan pelestarian biodiversitas dan lingkungan secara global. Saya berharap **Konferensi Internasional** ini dapat bermanfaat bagi kita semua. Sekian dan atas perhatian hadirin saya ucapkan terima kasih.

Manokwari, 24 November 2021
Rektor,

Dr. Meky Sagrim, S.P., M.Si

SAMBUTAN DAN ARAHAN GUBERNUR PAPUA BARAT PADA KONFERENSI INTERNASIONAL DAN RAPAT KOORDINASI NASIONAL KONSORSIUM BIOLOGI INDONESIA TAHUN 2021

Manokwari, 24 November 2021

Syallom!
Assalamu'alaikum Warahmatullahi Wabarakatuh,
Om Swastiastu,
Namo Buddhaya,
Salam Kebajikan,
Salam Sejahtera bagi kita semua,
Selamat selamat siang,

Yang Saya Hormati Rektor Universitas Papua
Yang Saya Hormati Para Guru Bersar Universitas Papua
Yang Saya Hormati Para Dekan Di Lingkup Universitas Papua
Yang Saya Hormati Pimpinan Seluruh Perguruan Tinggi Negeri dan Swasta di Papua Barat
Yang Saya Hormati Para Dosen di Seluruh Perguruan Tinggi Negeri dan Swasta di Papua Barat
Yang Saya Hormati Forum Komunikasi Pimpinan Daerah Provinsi Papua Barat
Yang Saya Hormati Pimpinan OPD di Lingkup Pemerintahan Provinsi Papua Barat
Yang Saya Hormati Bupati Kabupaten Manokwari
Yang Saya Hormati Kepala Balai Besar Konservasi Sumber Daya Alam Papua Barat
Yang Saya Hormati Kepala Balai Taman Nasional Teluk Cendrawasih
Yang Saya Hormati Kepala – Kepala Sekolah SMA Sekabupaten Manokwari
Yang Saya Hormati Para Pembicara Utama dari Dalam Maupun Dari Luar Negeri
Yang Saya Hormati Para Hadirin dan Saudara – Saudari Peserta Konferensi Internasional dan Rapat Koordinasi Nasional Konsorsium Biologi Indonesia

Mengawali sambutan ini, saya mengajak kita semua untuk memanjatkan puji dan syukur ke hadirat tuhan yang maha kuasa oleh karena kasih dan perlindungannya kita dimungkinkan hadir secara luring di tempat ini maupun secara daring untuk mengikuti acara konferensi internasional dan rapat koordinasi nasional konsorsium biologi Indonesia tahun 2021. Saya juga menyampaikan salam dan selamat datang bagi para peneliti muda di tanah Papua. Pada kesempatan ini juga, saya ingin menyampaikan terima kasih kepada Rektor UNIPA (Dr. Meky Sagrim), kepala Balitbangda Papua

Barat (Prof. Dr. Charlie Heatubun), Ketua Konsorsium Biologi Indonesia (Prof. Dr. Budi Daryono), ketua panitia (Dr. Keliopas Krey) dan seluruh sponsor acara yang sangat bersejarah ini.

Bapak, Ibu, Hadirin yang saya hormati, pulau Papua adalah sisa benua besar yang disebut Gondwana, kaya akan keanekaragaman spesies atau jenis-jenis flora maupun fauna. Tanah papua diyakini oleh sains sebagai rumah dari 50% biodiversitas Indonesia. Atas dasar itu, Indonesia menduduki reputasi istimewa sebagai salah satu 'negara terkaya biodiversitas' di dunia. Provinsi Papua Barat pada tanggal 19 oktober 2015 telah mempromosikan sebuah konsep pelestarian alam yang dipadukan dengan semangat penyelamatan jenis-jenis flora maupun fauna dan habitatnya. Ide tersebut selanjutnya melahirkan identitas baru 'provinsi konservasi' atau 'provinsi pembangunan berkelanjutan' untuk pertama kalinya di indonesia. Dengan demikian konsep pelestarian alam dan pembangunan berkelanjutan (SDG'S) dapat dipakai oleh para pelaku pembangunan untuk memenuhi standar-standar nasional maupun internasional sebagai upaya menekan laju hilangnya fungsi ekologis hutan, fungsi sosial maupun budaya yang terkandung didalam habitat-habitat baik yang berada dalam kawasan perlindungan maupun di luar kawasan perlindungan.

Bapak, ibu, hadirin yang saya hormati, sejak dahulu kala hingga masa depan nanti, kehidupan manusia di bumi sangat bergantung pada alam. Oleh karena itu manusia harus bertanggungjawab untuk menjaga dan melestarikan alam. Dalam rangka untuk menjaga dan melestarikan alam itu maka manusia harus meneliti dan mempelajari seluruh sumberdaya alam yang ada dan dampak dari kegiatan manusia terhadap alam sehingga pemanfaatannya tetap berkelanjutan. Kekayaan keanekaragaman spesies, ekosistem, dan genetik perlu diteliti dan dikembangkan untuk pemenuhan kebutuhan manusia tanpa mengurangi nilai-nilai kelestarian. Oleh karena itu saya mengajak para peneliti di seluruh indonesia bahkan di dunia untuk mengembangkan pendekatan praktis dalam pemanfaatan dan pelestarian spesies flora dan fauna yang tentunya untuk menghindari kepunahan spesies, dan jika memungkinkan mengembalikan spesies yang terancam ke ekosistim yang masih berfungsi. Sederhanyanya, kualitas hidup manusia hanya dapat berkembang dengan baik bila keanekaragaman hayati tersedia dan terjaga dengan baik pula.

Bapak, Ibu, Hadirin yang saya hormati organisasi perserikatan bangsa bangsa melalui UNESCO (The United Nations Educational, Scientific and Cultural Organization) juga telah menyepakati misi pendidikan tinggi untuk menghasilkan manusia (lulusan) berkualitas tinggi, warga negara bertanggungjawab, serta pembelajar sepanjang hayat atau *learning throughout life*. Empat pilar pembelajaran oleh unesco yakni *learning to live together* (belajar hidup bersama), *learning to know* (belajar mengetahui sesuatu), *learning to do* (belajar melakukan sesuatu), dan *learning to be* (belajar menjadi sesuatu) menjadi main stream penciptaan intelektual masa depan bagi keharmonisan

dunia. Tentunya perguruan tinggi di seluruh indonesia dan secara khusus di tanah papua diharapkan menjadi ujung tombak pelaksanaan empat pilar pembelajaran ini.

Bapak, ibu, hadirin yang saya hormati, saat ini kita sedang bearada di era revolusi industri 4.0 (empat titik nol). Era dimana sepanjang peradaban manusia, baik secara inter maupun intra relasi manusia semakin meningkat. Hal ini ditandai dengan meningkatnya konektifitas, interaksi, dan batasbatas manusia, mesin, dan sumber daya lainnya semakin saling mendekat. Perkembangan teknologi informatika yang sangat pesat hingga saat ini menyebabkan kita semua harus menghadapi era revolusi industri 4.0, era internet untuk berpikir atau internet untuk bekerja dengan lebih bijak, cerdas dan berbudaya. Generasi muda, pelajar, mahasiswa, dan kita semua harus bijak menggunakan teknologi ini untuk kemaslahatan seluruh manusia di dunia dengan melakukan pencerdasan digital bahwa hutan-hutan di indonesia termasuk tanah papua merupakan paru-paru bumi yang wajib dilestarikan.

Bapak, ibu, hadirin yang saya hormati, pelestarian alam membutuhkan sebuah fokus yang tegas dan serius. Kita semua perlu mengetahui bahwa kekayaan sumberdaya genetik kian terancam pelestariannya dan tidak dapat tergantikan secara global, regional maupun nasional. Disisi lain spesies, ekosistem maupun habitat flora dan fauna memiliki hubungan yang teratur dan saling mempengaruhi. Hanya karena keharusan melestarikan, manusia harus rela tidak merusak hubungan itu. Tentunya suatu proses panjang diperlukan guna perbaikan penataan dan pelestarian biosfer planet bumi kita yang hanya satu ini. Sebanyak 37 ekosistem teresterial seluas 7.698.675.30 ha teridentifikasi berada di wilayah provinsi papua barat. Dari total luasan tersebut sekitar 41,30% (3.179.675.47 ha) merupakan kawasan hutan lindung dan sebanyak 58,70% (4.518.999.83 ha) berada di luar kawasan hutan lindung. Beberapa area yang bukan kawasan lindung secara terpisah telah dimanfaatkan untuk berbagai kegiatan pembangunan. Regenerasi hutan barangkali akan sulit pada saat ini (5 sampai 10 tahun ke depan), namun yang terpenting adalah menekan laju kehilangan ekosistem dan habitat saat ini akan mengurangi level kepunahan spesies jangka panjang (60 sampai 100 tahun kedepan).

Bapak, ibu, hadirin yang saya hormati, potensi komersial plasma nutfah pada waktu mendatang akan mendorong peningkatan investasi secara berulang sehingga recovery ekosistem dan habitat wajib dilaksanakan secara bijak dan bertanggungjawab oleh semua pihak dengan tetap mempertahankan sedikitnya 30-50% luasan dari setiap ekosistem yang ada untuk mengakomodir kelestarian keanekaragaman genetik plasma nutfah termasuk upaya mempertahankan koridor yang menyediakan penyesuaian terhadap perubahan iklim (*climate cha*nge) global yang bermuara pada kestabilan iklim di provinsi papua barat. Peningkatan pembangunan di segala bidang, memerlukan

ruang dan lahan, sehingga mendorong terjadinya degradasi, deforestasi, fragmentasi yang juga menyebabkan penyempitan habitat spesies hidupan liar. Penurunan populasi dan distribusi beberapa species hidupan liar telah terjadi, dan dalam jangka panjang akan mendorong terjadinya kepunahan species. Spesies flora dan fauna lindungan dan terancam serta spesies endemik perlu mendapat perhatian penuh dari para pihak, karena sebaran habitatnya bukan hanya di kawasan konservasi tetapi juga di kawasan budidaya (pertanian, perkebunan, kehutanan, perikanan, pertambangan). Kebijakan pemerintah dalam penyusunan rencana tataruang, telah mengalokasikan ruang kedalam kawasan lindung dan kawasan budidaya. Tentunya upaya ini diharapkan akan meningkatkan kestabilan bagi kawasan ekosistem esensial seperti kawasan bernilai konservasi tinggi, koridor hidupan liar, buffer zone, termasuk zona migrasi spesies endemic sehingga keanekaragaman hayati di tanah papua khususnya papua barat tetap lestari. Peran dan dukungan para pihak (perguruan tinggi, praktisi, swasta, LSM) dalam pengelolaan kawasan ekosistem esensial akan meningkatkan stabilitas populasi dan keanekaragaman spesies hidupan liar bagi kemaslahatan masyarakat local dan global.

Bapak, ibu, hadirin yang saya hormati, konferensi internasional ini mengemukakan tema: "Membangun Optimisme Pasca Pandemi COVID-19: Pelestarian dan Pemanfaatan Biodiversitas Untuk Pembangunan Berkelanjutan di Indonesia". Tema ini memberi harapan bagi kita semua karena sains (ilmu pengetahuan) merupakan dasar dalam mewujudkan kegiatan konservasi dan juga sebagai dasar bagi pelaksanaan pembangunan berkelanjutan di seluruh dunia, indonesia dan secara khusus di tanah papua. Tema ini juga mempunyai relevansi dengan visi misi pemerintah provinsi Papua Barat.

Konferensi Internasional ini saya harapkan memberikan masukan yang berarti dan semoga menjadi katalis bagi pemerintah daerah dan seluruh mitra pembangunan untuk secara terus-menerus mengarahkan dan menyelaraskan program pembangunan yang efisien dan efektif dengan kegiatan konservasi untuk menjaga kekayaan alam yang sangat berarti bagi kita semua termasuk anak cucu kita pada masa mendatang. Saya pesan "Jangan Wariskan Air Mata Bagi Anak Cucu Kita, Tetapi Wariskan Mata Air Bagi Anak Cucu Kita".

Pada akhirnya dengan memanjatkan puji dan syukur ke hadirat tuhan yang maha kuasa, saya nyatakan Konferensi Internasional dan Rapat Koordinasi Nasional Konsorsium Biologi Indonesia Tahun 2021 secara resmi dibuka.

Sekian dan atas perhatian hadirin saya ucapkan terima kasih.

Manokwari, 24 November 2021
Gubernur Papua Barat

TTD

Drs. Dominggus Mandacan, M.Si

Table of Contents

Parallel Session 3 Theme : Molecular Biology and Biotechnology

Parallel Session 3 Theme : Biodiversity and Biosistematics

Parallel Session 3 Theme : Conservation of Natural Resources and Environment

Parallel Session 3 Theme : Structure and Development

Parallel Session 3 Theme : Microbiology and Health

Parallel Session 4 Theme : Bioanthropology

Parallel Session 5 Theme : Conservation of Natural Resources and Environment

Parallel Session 5 Theme : Molecular Biology and Biotechnology

Parallel Session 5 Theme : Microbiology and Health

Parallel Session 1

Theme :

Bioanthropology

Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

Body Satisfaction of Indonesian Undergraduate Students

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ABSTRACT

Body satisfaction is a self-perception of body image. It is assumed from compatibility between the actual physical appearance and desired ideal state of the body. Body satisfaction level was associated with biological factors (body weight, body mass index (BMI), sex, age), and the social environment (partner possessions and social interaction). The previous studies showed that high BMIs were associated with lower body satisfaction in American college students. The comparison between American and Chinese college students showed that female US students were more likely than their counterparts to show low body satisfaction. But there are no reported data among Indonesian undergraduate students. This study aimed to examine body satisfaction among undergraduate students in Indonesian society. As many as 694 undergraduate students have completed the questionnaire consisted demography data and Body Image State Scale (BISS) to examine their body satisfaction level. This study shows that Indonesian undergraduate students have high body satisfaction levels (mean=5.42), and most respondents have normal BMI levels (mean=21.49). There is a significant negative correlation between BMI level and body satisfaction. Partner possession and self-declare of body satisfaction significantly increase body satisfaction. In contrast, students who often compare their bodies to other people tend to have lower body satisfaction levels. This research suggested that biological and social factors affected body satisfaction levels in Indonesian undergraduate students, which is similar to conditions in other countries. Thus, it implies that biological and social factors generally affect body satisfaction in young adults.

Keywords : Body image, body satisfaction, BISS, BMI, Indonesia

Perceived Aggressivity on Indonesian Male Face

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ABSTRACT

A face can give information such as intelligence and aggressivity from the person. Aggressivity in this study was categorized into anger, hostility, physical aggression, and verbal aggression. The study is to assess Indonesian society capability to perceive aggressivity from Indonesian male face. The respondents were 100 Indonesian men ranging from 19-51 years old, whose facial photographs were taken. The respondents were filling the Buss-Perry Aggression Questionnaire to measure self-assessed aggression scale). The mean of their BPAQ scales (total aggression, anger, hostility, physical aggression, and verbal aggression) were 72.44±10.84, 17.37±3.97, 21.38±4.53, 18.97±4.65, 14.72±2.68, respectively. The average face was generated based on min-Q1 (Low-Aggressivity (LA)) and Q3-max (High-Aggressivity (HA)) of BPAQ total scale. Next, the aggressivity of averaged LA and HA faces were evaluated by raters. The raters consisted of 107 males and 101 females age range from 17-67 years. Male raters could not discriminate aggressivity between two averaged face (X-squared = 2.103, p-value = 0.147). Female raters perceived LA face as HA face (X-squared = 7.222, p-value = 0.007). This result indicated that aggressivity of Indonesian people could not perceived on faces.

Keywords **:** aggressivity, BPAQ, face, Indonesia, perception

Overview of the ethnobotany on the use of plants as a potential biopesticide in Indonesia

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ABSTRACT

Ethnobotany of Indonesian communities utilizes plants as botanical pesticides. Recently, there are no comprehensive data and information related to the ethnobotany of the use of plants as a potential biopesticide on a nationwide scale. This paper aimed to depict an overview of ethnobotany as biopesticides in Indonesia. The comprehensive literature was collected from the 29 published papers and theses (doctoral, master's, and bachelor's degree), in English and Bahasa Indonesia language. After the data was validated, there were only 27 papers related to the study topic. Most literature data from the western part of Indonesia (Oriental Realm): Java (n=10). The results show that 149 plant species can be used as an insecticide (131 species), bactericide (12 species), rodenticide (4 species), fungicide (16 species), nematicide (2 species), and molluscicide (9 species). These species were dominated by the Asteraceae family (14 species) and plant parts used from leaf parts (38.9%). The data of ethnobotany of plants used as biopesticide can be used as database information for further research regarding the bioprospecting, formulation, efficacy, and conservation for sustainable use. Furthermore, the development of biopesticides is also an alternative to reduce synthetic/chemical pesticides to provide sustainable agriculture.

Keywords**:** biopesticide, ethnobotany, family plant parts used, plant species

Reproductive Profile Of Female Baduy, Kanekes Village

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ABSTRACT

Baduy is one of the socio-cultural groups of ethnic Sundanese who live in a relatively isolated area of Kanekes village, Banten Province. They have traditional obligatory duties and taboos, which result in genetic, geographic, and cultural isolations. The unique characteristics of Baduy are expected to shape their life history. The timing of reproductive histories such as menarche, first reproduction, and menopause is important in a woman's life. Variability in reproductive histories is also related to human genetic and culture. A cross-sectional interview was conducted in 2011 and 2014. The real subject is 295 females aged 10 to 65 years. On average, Baduy females experience menarche at age 14.3 years, first marriage at age 15.3 years, first reproduction at age 17.2 years, and menopause at age 50.1 years. Traditionally, Baduy female allows the children to enter social life such as working in the field, performing traditional rituals legally, and even marriage after Peperan. Peperan is teeth honing ritual (ngageser), which is usually starting at age three years. Therefore, this affects the reproductive history, such as the interval between age at menarche and age at first reproduction, usually related to the marriage system. The marriage of the Baduy people follows an endogamy system. Besides, cultural isolations such as educational taboo resulted in early marriage and increased the chances of early first reproduction. From a biocultural perspective, it may be thought of as extending the reproductive span to maximize fitness.

Keywords **:** menarche, first reproduction, menopause, bioculture, Baduy

Parallel Session 1

Theme :

Biodiversity and Biosistematics

Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

Hair Color Pattern of Papua Cuscus (Genus Spilocuscus)

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ABSTRACT

Coloration in marsupials is very poorly studied so that functional explanations for pelage coloration are anecdotal. Spotted cuscus (Genus Spilocuscus) is a marsupial which is unique in its color variations. Previously, it has been described the color of cuscus hair as a whole body showing the dorsum and flank are more colorful than the belly. However, it is unclear what type and color pattern of each strand of hair causes the area to be more colored and less colored or even colorless. We photographed and collected hair from the dorsum, flank, and belly, then observed it under a microscope and made a color representation diagram of each hair strand. We found S. maculatus has two morphs (spotted/or blotched and unspotted), spotted /or blotched morphs with seven hair types, and an unspotted morph with three hair types. S. wilsoni has two morphs (spotted/or blotched and mottled), the spotted/or blotched morph with six hair types and the mottled morph with seven hair types. In all areas of the body except the belly, the ends of the hair are golden and silver. The morph of S. wilsoni showed that there was a difference between male and female hair color, which was previously unknown.

Keywords : Coloration, Spotted cuscus, Hair type

Identification of Undergraduate Biology Students' Tree Thinking Abilities to Determine Their Understanding of Phylogenetic Tree Biosystematics: a Preliminary Study

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ABSTRACT

Tree thinking is an evolutionary approach that emphasizes the ability to read and interpret phylogenetic trees. As one approach in biosystematics to map the biodiversity on earth, the ability of tree thinking plays an important role in influencing the acceptance of the concept of evolution. In the initial study, it was found that the tree thinking ability of students from the test results of TTCI (Tree Thinking Concept Inventory) questions was still low. This indicates that the student's biosystematic ability is still low.

Keywords : Tree Thinking, Phylogenetic Tree, TTCI, Biosistematic

The Correlation of Grasshopper (Insecta: Orthoptera: Acrididae) Diversity to Environmental Factors in Wonorejo Mangrove Forest, Surabaya

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ABSTRACT

Mangrove ecosystems have unique biodiversity that hold great potential and conservation importance. The interaction between abiotic and biotic factors in the mangrove ecosystems would affect biodiversity. The purpose of this study were to identify the species of grasshoppers in the Wonorejo Mangrove, determine its diversity index, and analyze the correlation of diversity to environmental factors. Grasshoppers were collected using a scan sampling method, point count using a sweep net, and then identified. Environmental parameters such as soil moisture, pH and temperature, light intensity, and CO2 were measured. Three species of grasshoppers, namely Oxya chinensis, Chorthippus biguttulus, and Valanga nigricornis were identified in this study. The Shannon-Wienner diversity index value of these species was 1.08, indicating the diversity of grasshoppers in the Wonorejo Mangrove is in the low category. The results of PCA test showed that soil moisture, pH and temperature, and CO2 have a strong correlation to grasshopper diversity in the Wonorejo Mangrove, while the light intensity did not show strong correlation. Based on these results, it could be suggested that the grasshopper's diversity in Wonorejo Mangrove may be affected by particular environmental factors. A better and deeper understanding of this correlation are needed to formulate a conservation strategy for grasshoppers in Wonorejo mangrove ecosystem.

Keywords **:** diversity; environmental factors; mangrove; grasshopper

Fish Diversity in the Bedog River, Bantul Regency, Yogyakarta Special Region

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ABSTRACT

The fish diversity in Indonesia is quite high, around 3,000 species. Freshwater and estuary habitats contain about 300 species. Bedog River is one of the rivers in the Special Region of Yogyakarta. This river changes the environment because its area is near settlements, factories, agriculture, and even industrial waste disposal. This study aims to determine the diversity of fish in the Bedog River, Bantul Regency. Three station points were determined using purposive sampling technique and data collection was carried out 3 times. Fish samples that are caught are then taken to Ahmad Dahlan University Laboratory for identification. The diversities of fish were found in 4 orders, 12 families, and 18 species. The species are; *Mystacoleucus obtusirostris, Barbonymus balleroides, Hampala macrolepidota, Osteochilus vittatus, Barbodes binotatus, Rasbora argyrotaenia, Oreochromis niloticus, Oreochromis mossambicus, Nemacheilus fasciatus, Dermogenys pusilla, Aplocheilus panchax, Channa striata, Pterygoplichthys pardalis, Clarias batrachus , Trichopodus trichopterus, Anabas testudineus, Hemibagrus mierus, and Poecilia reticulata*. The water environmental results of the physical and chemical parameters in the Bedog River, Bantul Regency are classified in a fairly good condition.

Keywords : fish diversity, river, environmental

Parallel Session 1

Theme :

Conservation of Natural Resources and Environment

Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

Ground Cover Vegetations in Gunung Baung Nature Park, East Java

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ABSTRACT

Gunung Baung is a nature park that has the characteristics of a lowland monsoon forest ecosystem type. Bamboo is a vegetation that characterizes this area which is quite often found in the area. This area is currently facing many threats of degradation due to its location bordering residential areas. Vegetation studies in this area have been carried out, among others, to determine the vegetation of undergrowth and seedlings that still survive in this area. A combination of transect and quadrat methods was used in five study sites in this area. The presence of bamboo affects the understorey in the area. There were at least 163 species of seedling plants and undergrowth had been found in Mt Baung NP with the most dominant species being *Tithonia diversifolia* (Hemsl.) A. Gray, *Mikania cordata* (Burm.f.) B.L.Rob., *Cyathula prostrata* (L.) Blume, *Piper sarmentosum* Roxb., *Pennisetum purpureum* Schumach., *Voacanga grandiflora* (Miq.) Rolfe, *Parameria laevigata* (Juss.) Moldenke, *Pterocymbium javanicum* R.Br., *Streblus asper* Lour., *Lepisanthes rubiginosa* (Roxb.) Leenh. Some of them have benefits, for example as medicinal plants, ornamental plants, and others. However there are also some species that are invasive plants. The results of this study are expected to increase knowledge and information about the species of understorey that are in Gunung Baung which some may have benefit.

Keywords:Gunung Baung Nature Park, seedlings, ground covers, diversity

Exploration and Ex Situ Conservation of Plant Diversity From RPH Ngebel

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ABSTRACT

Purwodadi Botanical Garden (PBG) is an ex situ conservation institution with the task of carrying out conservation, exploration and maintenance of plant collections, especially dry lowland plants. Purwodadi Botanical Gardens has carried out many exploration activities, one of which is the Ngebel Forest Management Resort (RPH), Ponorogo, East Java, which is a protected forest area within the BKPH (Forest Pemangkuan Unit) area of West Wilis. The purpose of this study is to explore and conserve plant diversity in the area. Exploration activities were carried out using the exploratory method by tracing the existing paths in the Ngebel RPH forest area, including the village area around the forest. The stages of plant exploration activities carried out including inventory, documentation, collection of plant species and planting of plant collections in Purwodadi Botanical Garden. These stages are described in more detail in this paper. There were at least 113 plant collection numbers collected by the PBG team, belonging to 27 families with various kinds of habitus, from herbs, climbers, shrubs and trees. Plant collections can be seedlings, cuttings or seeds.

Keywords: RPH Ngebel, ex situ conservation, plant diversity

The Conflict of Human - Elephant *(Elephas maximus Sumatranus)* in Sibak Village, Mukomuko, Bengkulu Province

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ABSTRACT

Human-elephant conflict leads to significant losses of crops, infrastructure, and livestocks, not to mention a harmful threat to human life. As a result, elephants are perceived as pests which shall be exterminated at any costs. This research aimed at determining the loss as well as the community mitigation strategy toward the elephants invasion. The data were collected by conducting structured interviews to agricultural land owners in Sibak Village. The data were analyzed quantitatively to calculate the crop loss value, and then interpreted descriptively to determine the conflict management by the community. Several damages suffered by the community included crop destruction, as much as IDR 4,219,623 per individual per year. Meanwhile, the community applied a-yet-traditional method to mitigate elephants invasion by employing kentongan (bamboo gong), firecrackers, and plantation fence.

Keywords : conflict, damage, mitigation, traditional.

Ecosystem Services Research Trends in Indonesia: A Bibliometric Analysis (1998-2020)

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ABSTRACT

Indonesia has experienced the most severe deforestation in recent decades among the world's mega-diverse countries in the tropics. However, disruption of the flow of ecosystem goods and services provided in the future is alarming, and concerns about a comparable risk have prompted a considerable relevant scientific study on ecosystem services at the global level. However, there was a scarcity of ecosystem services research in Indonesia, and its status was unclear. The purpose of this study is to provide an overview of the trend in ecosystem services research in Indonesia from 1998 to 2020 using bibliometric and social network analysis of 298 published works from the Scopus database. The results revealed that since 2013, the number of publications on the topic has been expanding and growing at an exponential rate. Environmental science, agricultural and biological sciences, and social sciences are the primary research subjects. Biodiversitas and Ecosystem Services are the two most prolific journals publishing results, despite not being the most cited. Indonesia and the United States have published the most articles on this issue and are the most active in the research network. Topic-related research analyzes most biodiversity, deforestation, oil palm, climate change, conservation, valuation, payment of ecosystem services, and sustainability; moreover, these were identified as the key topics of research to be explored in the next few years. These findings will be helpful in understanding research trends in the field of ecosystem services in Indonesia, as well as in the deliberations of stakeholders and policy-makers in developing road maps of research and policies related to this topic in the future.

Keywords: bibliometric analysis, ecosystem services, Indonesia, science mapping, social network analysis.

Parallel Session 1

Theme :

Structure and Development

Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

Reproductive Performance of a Fresh Water Papuan Fish, Nematalosa flyensis in the Rawa Biru, Merauke

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ABSTRACT

Papua is rich in fresh water fish species, some of them are exotic species. Fish population in the wild keep decreasing due to food demand or recreational purposes, this will put the wild type fish at risk due to free fishing. As anticipation to such condition restocking will be favorable. A successful restocking needs good understanding and data of reproductive aspects of the target fish. The reproductive information is needed to culture the fish in captivity as a resource for restocking. A research using purposive sampling were conducted in 2016 to study the reproductive parameters of fish at Rawa Biru Merauke. The results showed that there were 12 native species and 1 introduced species. One of them was Nematalosa flyensis. In September, 127 fish were caught with body weight range from 52.03±31.34g to 116.47±21.86g and length 18.39±4.28cm to 23.89±1.50cm (43.7% male, 47.2 % female and 9.5% undetermined sex); gonad-maturity index of male was 1-4 (mode 1-2) and female 1-3 (mode 1-2). In October, 216 fish were caught with body weight range from 80±29.46g to 127.05±32.04g and length 20.83±3.25cm to 24±0.95cm (60.2% male and 59.8%); gonad-maturity index of male was 1-4 (74.45% in stage 3-4) and female 2-4 (40.48% in stage 3-4). The gonado-somatic index of male was 1.74±0.78% to 2.35±1.06% and female 0.89±0.75% to 2.53±0.85%. Ten developmental stages of oocyte were observed in the ovary, average fecundity was 2787±1644.21 and oocyte diameter was 479.75±104.59. The water quality parameter (DO, CO2, DMA, pH, temperature, salinity, total N and P) were analysed.

The Use of Protein Fraction of Gnetum Gnemon Seeds as Coating of Latex Sheets for Immobilisation of Mouse Sperms

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ABSTRACT

The objective of the research examined the use of protein fractions of Gnetum gnemon seeds to be applied to latex sheets for immobilising of mouse spermatozoa. The gnetum plant has a very wide distribution in Indonesia, especially in Bengkulu, even on Enggano Island the gnetum plant is the primadoma plant cultivated by farmers. However, the seeds are only used for the production of crackers, while there are active substances in gnetum seeds that can be used as components for making medical devices. Old gnetum seeds were ground to make powders. The powders were homogenized in ml PBS buffer containing anti-protease PMSF in a cool room. The homogenate was centrifuged in order to separate supernatant from pellet. Supernatants were fractionated with dialysis bags either 6 kD or 12 kD sizes. The fractions were polished to latex sheet. Mouse sperm suspensions were applied to surface of the latex sheet that has been polished with fractions either of 6kD or 12 kD. The immobilized sperms stained with eosin were observed with USB digital microscope and documented. The microscope slide with 2 layers, first latex layer, adn second layer of either protein fraction 6 kD or 12 kD could immobilize mouse sperms. The future research is projected to pioneer to design spermaticidal condoms that have double protection, namely a physical barrier of latex in the and also a chemical barrier of protein fraction of gnetum seeds.

Keywords : gnetum gnemon, seeds, protein, latex, immolisation, mouse, sperms

Germ Cells Development in *Osteochilus vittatus* Exposed to Potassium Dichromate

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SUMMARY STATEMENT

This research is based on the concept of Cyprinids gonadal development, which inflicted by exposure of potassium dichromate. The experiment subjected *Osteochilus vittatus* during post-embryonic period using histological observation.

ABSTRACT

Potassium dichromate, K2Cr2O7, is a well-known heavy metal, commonly used as an oxidizing agent in industrial applications. Prolonged exposure of hexavalent chromium can induce adverse effects in water biota, especially fish, such as damage to DNA and tissue structures, as well as disruption of survival and growth rate. An experimental research has been conducted in *Osteochilus vittatus*, to evaluate the effect of K2Cr2O7 on primordial germ cells (PGCs) and to determine the tolerable concentration of this substance to *Osteochilus vittatus* gonadal development. The evaluation is based on paraffin-embedded section, stained with Haematoxylin-Eosin.

A month-long exposure of K2Cr2O7 to post-hatching larvae, 1-month, 2-months, and 3-months juvenile lead to the decrease of PGCs number and the delay of gonadal development. There was a consistent pattern on the effect of K2Cr2O7 in all tested developmental stages, in which higher concentration resulted in lower PGCs number. The number of PGCs in juvenile exposed to 2.5 and 5 ppm K2Cr2O7 was significantly lower ($p<0.01$) than control. A meagre exposure of only 2.5 ppm had extremely reduce PGCs number, and damage the whole gonad beyond repair.

Keywords: *Osteochilus vittatus*; PGCs; Potassium dichromate; gonadal development

Vegetative Growth Response of Rice Sulutan and Rindang 2 Under The Shade of Coconut Trees

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ABSTRACT

The objective of this study was to evaluate the growth response of North Sulawesi local rice at the vegetative phase to the shade of coconut tree based on plant height, leaf area, and plant biomass (fresh and dry weight of leaves, fresh and dry weight of roots, root volume). The factorial experiment in a randomized complete block design used two rice varieties (Sulutan and Rindang 2), two treatments (planted under the shade of coconut trees with a spacing of 16 (5 x 3) m or saw system and in open areas as control) with three replications. Plant height was measured on day 0 (before treatment), 2, 4, 6, 8, 10, and 14 days after treatment. Leaf area and plant biomass were measured on day 0, 7, and 14. The study results indicated a significant difference between the Sulutan and Rindang 2 for plant height and biomass. Plant heights of Rindang 2 on days 0, 2, 4, 6, 8, 10, 12 and 14 were greater than Sulutan. Leaf fresh and dry weight as well as root dry weight of Sulutan on day 0 and 7 were greater than Rindang 2. Root fresh weight of Sulutan on day 0 was greater than Rindang 2. Root volume of Sulutan on day 7 was bigger than Rindang 2. On day 7 and 14, the leaf area of Rindang 2 was bigger than Sulutan and the leaf area in the shade treatment was greater than without shade. Leaf area was a potential indicator of shade tolerance in rice. Nevertheless, the potency of rice Sulutan as a shade-tolerant cultivar should be further evaluated until the generative stage.

Keywords : local rice, shade tolerant, coconut tree

Parallel Session 1

Theme :

Microbiology and Health

Time :13.00 – 14.00 AM (Jakarta Time/GMT+7)

The Effect of Reproductive Health Gymnastics on Menstrual Pain of Female Adolescents

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ABSTRACT

Adolescent girls who have experienced puberty will experience menstruation where there is a process of bleeding as a result of the decay of the inside of the uterine wall so that during menstruation, young women will experience dysmenorrhea or menstrual pain. The incidence of menstrual pain in Indonesia is estimated at 55% of women of reproductive age who experience pain during menstruation and the incidence (prevalence) of menstrual pain ranges from 45-95% among women of productive age. Several therapies that can be done to overcome dysmenorrhea are through pharmacological and non-pharmacological therapies. Physical activity that can be done as a non-pharmacological therapy to overcome dysmenorrhea is reproductive health exercise which can be an alternative for young women who experience dysmenorrhea because it can increase the production of endorphins and serotonin levels which can reduce pain in the body because when doing exercise, the brain and spinal cord will produce endorphins, hormones that function as natural sedatives and cause a sense of well-being. This study analyzes menstrual pain in adolescent girls after being given reproductive health exercise. The results showed that the Kspro exercise had an effect on menstrual pain for adolescent girls with p value < value (0.04) where menstrual pain before treatment was given to the intervention group, namely the average menstrual pain was 6.7 and after treatment was the average pain. menstruation 2.0. The level of menstrual pain before being given treatment in the control group is an average of 6.3 menstrual pain and menstrual pain after being given treatment is an average of 2.3.

Keywords : Female Adolescents, Menstrual Pain, Reproductive Health Gymnastics

Intercalation of Cellulose Nanofiber from Aloe Vera Rind and Glycerol as Plasticizer in Kepok Banana Peel Starch Based Bioplastic

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ABSTRACT

Plastic Biodegradable is an innovation in an effort to replace the use of plastics made from petroleum by using organic base materials that are capable of being degraded by microorganisms in a short time and do not contain harmful compounds for the ecosystem. Bioplastic based on waste materials in the form of kepok banana peel waste and aloe vera rind is an alternative basic materials that does not interfere with food allocation. This research aims to increase the tensile strength, water resistance and biodegradation time for increased storage time of bioplastics with the addition of cellulose nanofibers from aloe vera rind as filler and glycerol as plasticizer. Variations in concentration of cellulose nanofibers added 0%, 2%, 4% and 6% of the weight of dry kepok banana peel starch and concentration of glycerol added 40%. Bioplastics are molded using casting molding method. The best result showed the addition of 6% cellulose nanofiber has a higher value in tensile strength, water resistence and biodegradation time. The addition of cellulose nanofibers forms a percolation network that can reduce water absorption in bioplastics, increase tensile strength and increase bioplastic biodegradation time for increase bioplastic storage time.

Keywords: Bioplastic, Cellulose nanofiber, Starch

Correlation Between Risk Perception and Anxiety Level During Covid-19 Pandemic in Indonesian Society

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ABSTRACT

Risk perception is an individual subjective assessment of the characteristics and severity of a risk. It affects human life strategy and is essential for human survival. Several factors may influence a person's risk perception levels; one of them is anxiety level. Anxiety level may change as a response to environmental changes, such as the global outbreak of coronavirus disease (Covid-19). Previous researches in several countries have shown a positive relationship between risk perception toward Covid-19 and anxiety level. Different countries showed different variables affected people risk perception, suggesting demographic and cultural background may impact risk perception. There is no data regarding these conditions in Indonesia. Therefore, this study aimed to investigate the correlation between risk perception toward Covid-19 and anxiety level and find out variables that may affect risk-perception toward Covid-19 in Indonesian society. We conducted an online survey to assess perception toward risk caused by Covid-19 (Risk-percept Covid-19 questionnaire), measure the anxiety level of Indonesian society (GAD-7 questionnaire), and demographic data. From a total of 1147 respondents, we found that most of the respondents are categorized as individuals with a minimal anxiety level. The higher a person's anxiety level, the higher the perception of risk caused by Covid-19, which is similar to other countries. Higher income and get the covid-19 vaccine significantly increase Indonesian's risk perception towards Covid-19. These results imply that the risk perception of Indonesian's society is affected by financial and health conditions.

Keywords : Covid-19, risk perception, anxiety level, vaccine, Indonesian society

The Evaluation of Viable Adhering Bacteria on Oral Sutures After Chlorhexidine Mouthwash Treatment Using Turbidity Measurement: An In-Vitro Study

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ABSTRACT

In the oral cavity, sutures are continuously bathed in saliva containing approximately 7.5x108 microorganisms/ml that can attach to the suture surface and lead to prolonged infection. In addition to increasing the possibility of infection due to bacterial adhesion, the presence of sutures on the oral wound can also increase postoperative complication, such as pain, swelling, and trismus. Chlorhexidine mouthwash is considered to be the gold standard for antibacterial treatment in dentistry.
Objectives:
This study evaluated whether chlorhexidine mouthwash treatments can decrease viable adhering bacteria from two different types of sutures that are commonly used in oral surgery, polypropylene and silk sutures.
Methods
In this experiment, 4-0 Polypropylene Blue Monofilament Suture Surgiproä II (CovidienTM) and 4-0 Silk Black Braided Suture (LOOKTM) sutures were used. Scanning electron microscopy (SEM)/ energy dispersive x-ray spectroscopy (EDS), and infrared spectroscopy were used to characterize the suture materials. This in vitro study was done by incubating the sutures in a mixture of TSB broth and freshly human pooled saliva for approximately 24 hours. The sutures then were treated with chlorhexidine or phosphate buffered saline (PBS) as the control and shaken for 90 seconds. After treatments, the sutures were put into fresh Tryptic soy broth (TSB) broth and incubated for 24 hours. The bacterial retention and/or viability was evaluated by measuring the turbidity of broth using a 1951 USAF Resolution Target, consisted of transparent glass with pattern groups of 3 black bars that designated by group numbers and elements. The broth (without the suture) was poured into a polystyrene square spectrophotometer cuvette. The cuvette was placed in front of the resolution target, which was backlit by a small portable X-ray viewer lamp. The group and element numbers were obtained by looking at the spaces that can be seen between the bar. USAF 1951 Calculator was then used to determine the exact resolution score.
Results
Scanning electron microscopy (SEM) showed the smooth surface on the monofilament polypropylene suture, whereas shows the surface of braided strands with a lot of interfaces on the silk suture. Chlorhexidine mouthwash treatment significantly decreased viable adhering bacteria on the sutures. Polypropylene sutures treated by chlorhexidine showed the highest resolution score (4.467) compared to treated by PBS (0.791). Similar to this, silk sutures treated by chlorhexidine also resulted in lower resolution score (0.806) than treated by PBS (0.444), although still lower compared to resolution scores of polypropylene sutures. The higher the score meant that the clearer the broth, the lower the score meant that the cloudier the broth which also meant that there were more viable bacteria presented in the broth.
Conclusion
Chlorhexidine mouthwash should be recommended to use as antibacterial mouthwash treatment to decrease viable adhering bacteria on the suture after oral surgery procedures. Type of suture materials should be considered while treating patients at high risk for infection. However, animal and clinical investigations are important to prove safety and efficacy for future applications

Parallel Session 2

Theme :

Bioanthropology

Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

Development of Learning Content Based on Local Wisdom Jungkit-Jungkit, North Sumatra, Indonesia

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ABSTRACT

Local wisdom-based learning is a way for learning to run well, because students analyze their own environment to develop their abilities. This study analyzes the learning content of Jungkit-Jungkit as local wisdom of the people of North Sumatra to be used as teaching materials for students. This research method is descriptive qualitative. The research was conducted by studying literature, interviewing local communities, and analyzing learning at the State University of Medan. The result of this research is that the Ticks can be used as material in the Ethnobotany course with the theme of plant management by local communities. The seesaw material is developed into text, videos, and worksheets that are arranged into an application-based media that can be done in distance learning. The conclusion of this study is that seesaws can be used as teaching materials in Ethnobotany courses as an online learning solution.

Keywords**:** Ethnobotany, local community, local wisdom, Jungkit-jungkit

Profile of Age at Menopause, Nutritional Status, and Socioeconomic of Women in Rancakalong Village, Sumedang Regency, West Java

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ABSTRACT

Menopause is marked by the permanent cessation of the menstrual cycle and the reproductive phase, followed by a long post-reproductive "grandmotherhood." From an evolutionary perspective, this phase provides an opportunity for a grandmother to care for her grandchildren to survive. Variations in the age of menopause are influenced by various factors, both genetic and environmental. The population of postmenopausal women in Indonesia will increase along with the increase in life expectancy. Therefore, it is crucial to know the age of menopause and the description of nutritional status and socioeconomic conditions, which may affect the quality of life of post-reproductive women in Rancakalong Village. The subjects of this study were Rancakalong women aged 40 years and over and the Sundanese. Determining menopausal status uses the status quo method (yes/no) followed by the memory method to determine the last menstrual period. In addition, this study also analyzes nutritional status (Body Mass Index/BMI) and socioeconomic status (education, occupation, family income, and expenditure). The median age of menopause was analyzed using the Probit GLM (Generalized Linear Model) in the R program. The results showed that the median age of menopause was 49.8 years. Women in Rancakalong Village tend to be obese when they enter old age. Obesity and socioeconomic conditions that are middle to lower can affect the age of menopause and trigger the occurrence of post-reproductive women's health problems. Besides, postreproductive life can be used to the maximum to assist their children to take care of their grandchildren to increase the survival of their offspring if the post-reproductive woman is in a healthy condition.

Keywords**:** menopause, BMI, nutrional status, socioeconomic status, Sundanese

Variation of Handedness and Creativity in Bogor Primary and Secondary School Students

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ABSTRACT

Left-handed individual's minority has been ubiquitous in human population which leads them to be adaptable in right-handed world. As a preference, daily hand used must be consistence across individuals and across tasks, known as handedness. Handedness needs to be assessed with specific tasks using tools due to consistently of using either hand. In this study, handedness was examined by self-declared and 10 specific tasks of 493 both primary and secondary school students in Bogor, Indonesia. It seems that there are special adaptations that may signal creative behavior for left-handed individuals. Creativity was investigated as another dimension for which differences may exist between left- and right-handed individuals. A generalized linear model indicated that the left-handed individuals demonstrated greater creativity than the right-handed ones based on Adjective Check List.

Keywords : Bogor, creativity, handedness, self-declared, students

Relationship Between Empathy and Intelligence of Undergraduate Students in Indonesia

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ABSTRACT

Empathy is the ability to understand the feelings and emotions of others, which important for social interaction in human. Cognitive empathy is a cognitive-perceptual process that is oriented towards understanding another person's perspective or situation. Emotional empathy is a state of feeling or imaginary experiences of another person. Intelligence is the ability to understand, reason, plan, and solve problems. Empathy was predicted can be influenced by intelligence because individuals with high intelligence are better at understanding and interpreting situational cues. So far, few studies have directly explained the correlation between empathy and intelligence in undergraduate students, and there are inconsistencies in the result. Those result implies that some demographic and cultural background affecting the result. In addition, the relationship between empathy and intelligence of undergraduate students in Indonesia is not yet known. Therefore, this study aims to determine the relationship between empathy and intelligence of undergraduate students in Indonesia. This research was conducted using an online platform, with a total of 316 undergraduate students as respondents. Each respondent filled out a questionnaire consisting of demographic data, the Interpersonal Reactivity Index (IRI) to assess self-empathy. We measured their intelligence using Baddeley Reasoning Test (BRT). This study shows that undergraduate students in Indonesia have higher emotional empathy (mean = 37.29) than cognitive empathy (mean = 36.80) and a high intelligence score (mean = 20.58). However, the correlation between empathy and intelligence has no significant correlation. Thus, it implies that intelligence is not the variable that affects empathy.

Keywords : Cognitive empathy, emotional empathy, intelligence, Indonesia

Parallel Session 2

Theme :

Biodiversity and Biosistematics

Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

Diversity of Butterfies (Lepidoptera: Rhopalocera) In Various Forest Covers in Aek Nauli KHDTK, North Sumatra

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ABSTRACT

The diversity of butterfly species in Indonesia ranks second after Brazil and it is estimated that as many as 1200 species of butterflies in the world are found in Indonesia. Currently, butterflies face the threat of extinction due to land use change in their habitat. The number of butterflies in general is very dependent on the management of an area. Butterflies are a group of insects that belong to the order Lepidoptera which means they have scaly wings, these scales are what give the pattern and color of butterfly wings. This study aims to obtain data and information about the diversity of butterflies and their protection status in various forest cover in KHDTK Aek Nauli North Sumatra. This research was conducted from January to February 2021. This study used the cruising method. Butterfly data collection was carried out in the morning at 08:00-10:00 WIB and continued in the afternoon at 14:00-17:00 WIB. Butterflies were caught using insect nets, then documented for identification. From the identification results found 302 individuals belonging to 29 species, and 5 families. The most common species found at the study site were Eurema hecabe and Mycalesis patiana. The butterfly diversity index in KHDTK Aek Nauli North Sumatra was in the medium category, respectively in secondary forest with a value of (H'= 2.5928), open land (H'=2.0129), and primary forest with a value of (H'= 1.7304). The uniformity/evenness index is in the depressed category, respectively, primary forest with a value (E = 0.5680), secondary forest with a value (E = 0.4792), and open land with a value (E = 0.3933). The dominance index is in the low category, open land with a value (D = 0.2131), secondary forest with a value (D = 0.1950), and primary forest with a value (D = 0.1104).

Keywords: *Butterfly, Lepidoptera, Diversity, KHDTK Aek Nauli*

Diversity of Home Garden Fruit Plants in Serambi Indah Village, West Langsa District, Aceh

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ABSTRACT

A home garden can be interpreted as a plot of land around the house and is a green open space planted with various species of plants. This study examines the diversity of garden fruit plants in Serambi Indah Village, Langsa City. The research was conducted using exploratory methods and semi-structured interviews with the community in three hamlets, namely Cut Mutia, Pocut Baren, and Cut Nyak Dien. The method of determining the respondents by snowball sampling is as many as 30 people. The results showed that 31 species were belonging to 28 genera and 20 families of fruit plants. The level of diversity of garden fruit species in Serambi Indah Village, West Langsa District is classified as medium and high criteria.

Keywords: home garden, fruit plants, Langsa, Aceh

Diversity of Macrobenthos Communities in Karang Jahe Rembang Beach Area

Nida Anisah, Sapto Purnomo Putro and Fuad Muhammad

ABSTRACT

Karang Jahe Beach area is one of the beaches located in Rembang Central Java, this beach has characteristics that support the existence of tourist attractions and other activities such as pond cultivation. Macrozoobenthos are invertebrateanimals that live in water and aquatic base substrates. Hidupnya relatif fixed then the condition of the habitat greatly affects the number and diversity. The purpose of the study was to find out community structures such as the Diversity Index, The LevelnessIndex, and the Macrobenthos Dominance Index. The method used is to divide 4 observation stations based on existing land use differences that can represent the Karang Jahe Beach Area. The results found macrobenthos as many as 62 species, divided into 35 types of gastropod class, 15 types from the Bivalvia class,10 types from the Malacostraca class, 1 type from the Scyphozoa class, 1 type from the Asteroidea class. The Diversity Index in the month Maret ranges from 1.32-3.34 and categorized moderate diversity for April ranges from 1.31-2.6 and categorized moderate diversity. The March benchmark index between 0.73-1 and categorized as high level for April ranged from 0.73-0.98 and categorized as highlevel. The dominance index between March between 0.03-0.19 and categorized as low dominance for April between 0.03-0.12 and categorized as low dominance. Environmental quality in this area is still relatively good and normal to support macrobenthos life.

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Keywords: Diversity, Macrobenthos, Karang Jahe RembangBeach.

Tree canopy cover for microclimate temperature reduction in Bandung city

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ABSTRACT

The high level of urban development causes urban green areas to decrease and the built-up area to increase, this causes most cities to face the urban heat island (UHI) problems so that UHI mitigation becomes important in urban planning and design. The presence of trees can reduce the effect of the UHI, some cities want to increase urban vegetation to minimize the effect of UHI. Through evapotranspiration and the benefits of shade, urban trees are an important tool for making cities more resilient to extreme heat. This research was conducted in the city of Bandung by calculating the value of the Land Surface Temperature (LST) and the Normalized Difference Vegetation Index (NDVI). LTS and NDVI values are obtained through the interpretation of satellite imagery, namely Landsat 8. The results of the calculation and determination of temperature distribution and vegetation density values in Bandung City are analyzed for trends and distribution of affected areas. Then it is analyzed how to increase green open space that has the capacity to absorb carbon, reduce local temperatures and biodiversity in urban landscapes. There is a decrease in vegetation density and soil surface temperature, which is evident in the increasingly warm development in the city of Bandung. There are 16 locations in the city of Bandung that have surface temperatures above 35^{o}C which must be handled immediately with several alternatives according to conditions in the field with the approach of multiplying vegetation. The concept of planting trees here is trying to be developed in urban areas, especially in urban forests. The definition of urban forest refers to the Food and Agriculture Organization (FAO) as "a network or system consisting of all forests, tree groups, and individual trees located in urban and suburban areas". The term covers everything from gardens with trees with biodiversity in mind. Some alternatives that can be applied are planting trees in areas with temperatures above 35^{o}C, planting above the buildings (green roofs) and green walls (green faced/living wall). This concept can be applied in urban areas to reduce the temperature of the microclimate and biodiversity, besides having ecological benefits, it can also have economic value. Based on the results of research, the presence of plants can reduce the temperature between 2-4^{o}C depending on the area of plants and the proportion of trees.

Keywords**:** Microclimate, tree canopy cover, urban

Parallel Session 2

Theme :

Conservation of Natural Resources and Environment

Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

An Endemic Plant Species of East Java, *Smilax nageliana* A.DC (Smilacaceae). A Real Conservation Challenge

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ABSTRACT

The current paper presents a study upon the scientific knowledge on the presence of species at their habitat and future perspectives of the endemic species *Smilax nageliana* A.DC. The scope of the paper is to improve understanding about this endemic species and to underline its importance. The present study case is being used to highlight the main features of biodiversity conservation in Indonesia, a country with a high number of endemic species. The research was conducted at Ranu Lingga Rekisi forest-Bromo Tengger Semeru Park, and Kawi Mount East Java, in September 2021, and was conducted using survey methods and field observations. Future perspective analysis was observed through semi-structured interviews with communities around the habitat of *S. nageliana*. The results showed that the habitat of *S. nageliana* in Ranu Lingga Rekisi and Kawi Mount is still quite good, but has decreased due to community needs, but has not been accompanied by conservation efforts. *S. nageliana* blooms and bears fruit around August-September, in which there was a shift in the previous month of flowering and fruiting, namely the evaluation in 1942, which occurred in December. Information on this reproductive period is needed for future development purposes. The other results of study showed that the Use Value (UVs) of *S. nageliana* is 0.956. Local people only know *S. nageliana* as animal feed.

Keywords : *Smilax nageliana* A.DC., endemic plant species, field investigations, morphology, future perspectives.

The Importance of Mangroves Species at Bancaran Beach, Bangkalan Regency, Madura

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ABSTRACT

Bancaran Beach is one of the beaches in Bangkalan, Madura district which is being developed into a marine ecotourism destination with a mangrove forest icon. However, until now, there have been no publications related to this species, such as: diversity, density, and dominance of species, as well as the valuation of mangrove ecosystems on the Bancaran coast. For this reason, it is necessary to explore and analyze the important values as one of the strengthen of the completeness of educational tourism. Determination of sampling points was carried out at 4 stations, with each station 5 points and samples were taken using the point center quarter method. There were 5 species of mangroves were found at the research, namely: *Sonneratia alba*, *Rhizophora mucronata, Avicennia alba, Bruguirea cylindrica, Acantus ilicifolius* L. The results of this study showed that the highest Important Value Index at the tree level was found: *Sonneratia alba* 69.83; *Rhizophora mucronata* 65.99; *Bruguirea cylindrica* 65.698, *Avicennia alba* 56,98; and shrubs for *Acantus ilicifolius* 41.495.

Keywords: Bancaran, Mangrove, Species Density, Dominance of Species, Frequency of Species, Important Value Index

Restored and Rehabilitated Mangroves Provides a Novel Refuge for Waterbirds Diversity in Kampung Blekok, Situbondo, East Java Province

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ABSTRACT

Mangrove on the North Coast of Situbondo Regency has been degraded and restored gradually. This study aims to evaluate the success of mangrove restoration and rehabilitation in Kampung Blekok, Situbondo Regency as a novel refuge habitat for waterbird diversity. Reference sites are mangrove forests in the Baluran National Park, degraded mangroves in Dubibir and highly degraded one in Banyuglugur. Mangrove area was determined based on satellite map. We observed waterbird diversity, prey and water quality along the transect. Data were descriptively analyzed using PCA. The results showed that mangrove restoration of Kampung Blekok increased the mangrove area from 2.3 ha in 1985 to 16.0 ha in 2020, while in Baluran 256 ha, Dubibir 20 ha and Banyuglugur 13.4 ha. Waterbird richness in Kampung Blekok reached 14 species, while in Baluran 13 species, and decreased along with mangrove degradation level in Dubibir or Banyuglugur. However, the waterbirds diversity and evenness indices in Kampung Blekok were still lower than in Baluran. Waterbirds in Kampung Blekok and Dubibir were dominated by *Bubulcus ibis*, and showed the highest density, while in Baluran there were six predominant species. In Kampung Blekok, the prey density increased waterbirds density and it was supported by a more optimal pH. Meanwhile, prey taxa richness and higher dissolved oxygen in Baluran supported a higher waterbird diversity index. *Five waterbirds* were common species but it was not found in Banyuglugur. Besides, Kampung Blekok and or Baluran mangroves were refuge for the IUCN red list *Leptoptilos javanicus*, *Charadius javanicus*, and *Ciconia episcopus*.

Key words: Waterbirds, diversity, restored mangrove, Kampung Blekok, preys

Preliminary Study and first Evidence of Presence of Microplastics in Julung Fish (*Hemiramphus lutkei*), from Manokwari Marine

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ABSTRACT

Pollution by microplastics (MPs) is currently a global problem in the coastal and marine environment. Transfer of MPs from land to sea and their inclusion in the food web has a significant adverse effect on the marine life and human health. Microplastic pollution has become a worldwide threat and impacts various marine animal species that ingest them. However, current knowledge of the presence of microplastic in Manokwari . Here we present the first preliminary study to analyze the presence of microplastics in fish from manokwari marine. . This study aimed to determine the abundance and characteristics of microplastics accumulated in julung fish (Hemiramphus lutkei) were collected from february to march 2021. The digestive oragn of the julung fish were extracted using a KOH 10% solution to degrade organic materials. We found the presence of microplastics in digestive organ (n=30) is 70% was contaminated of MPs. The characterisctis of MPs are filamen, fragment, line and aluminium. The MP abundance was 2,96 items/individual. The colors show blue, white and multicolored.

Keywords : microplastic, julung, manokwari, west papua

Parallel Session 2

Theme :

Structure and Development

Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

Reproductive Capability of Red Jungle Fowl Offspring in the Community of Seluma District, Bengkulu, Indonesia

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ABSTRACT

Red jungle fowl (RJF) is a biological resource that lives in the wild and has been domesticated by the community. Crosses between RJF and local chickens have occurred and produced offspring. The purpose of this study was to evaluate the reproductive ability of RJF offspring rearing by the community. The study was conducted in Seluma Regency, Bengkulu Province, Indonesia. Respondents were determined by the snowball sampling method, and 50 people were obtained. Data was collected by means of interviews, filling out questionnaires, and observation. The data collected were chicken rearing techniques, egg and chick production, and population. The results showed that the population of RJF offspring was 337 consisting of 85 roosters, 67 hens, 63 chicks, and 122 young chickens. The chicken rearing technique is carried out in 3 ways, namely reared in cages during the day and night, chickens are released during the day and night, chickens are housed at night and released during the day. The average egg production was 10.07±2.3 eggs/hen/period, a minimum of 5 eggs and a maximum of 15 eggs, the number of eggs hatched was 8.6±1.83 eggs/hen/period, and the eggs hatched were 6.17±1.6 eggs/hen/period (72.78%). Chicks production was 6.17 chicks/hen/period (61.26% of total egg production). Based on the research, it can be concluded that the offspring of RJF are local chickens that genetically have good reproductive abilities and poor maintenance management causes slow population growth.

Keywords : population, red jungle fowl offspring, reproductive ability

Suitability of Cikapundung River Water as a Medium for Eel (*Angulilla Bicolor*) Rearing

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ABSTRACT

Eel (*Angulilla bicolor*) is a potential resource that can be exported and has high economic value. In the cultivation process of eel enlargement, a water source is needed as a growth medium. The purpose of this study is to evaluate the suitability of water sources from the Cikapundung River as a water source for eel rearing cultivation media. The research method uses experimental methods. Eels are cultivated in ponds with water sources from upstream of Cikapundung river. Evaluation of suitability water sources in the Cikapung river was assessed based on chemical analysis of water quality and eel growth such as biomass, size, survival rate, growth rate and Fe and Pb content in eel meat. The results showed that the water upstream of the Cikapundung river has the suitable as a water source for eel rearing cultivation media.

Keyword: *Angulilla bicolor*, Cikapundung River, Rearing Cultivation

The Analysis of *Schizozstachyum lima* (Blanco) Stomatal Based on Altitude Differenciation

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ABSTRACT

The purpose of this research was to determine variations of density, stomatal index and the correlation among altitude differences with the density and stomatal index of *S.lima*. The research stages include measuring abiotic factors, making leaf preparations, calculating stomata density and stomata index, and data analysis. The method used in this research using the *whole mount*. The data were analyzed using SPSS 16.0 for windows. The results showed that the stomatal density of 22 S.lima genotypes was included in the medium density category (300-500) and high density category (> 500). While the Stomata Index ranges from 42.62% to 60.77%. Based on the Pearson correlation test, a significance < 0.05 indicates that the stomata index of 22 S.lima genotypes was not correlated in height, while stomatal density has a correlation in height of 0.4%.

Key word : *S.lima*, stomata density, stomata index

Leaf Morpho-Anatomy Variation Between *Codiaeum variegatum* (L) Blume

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ABSTRACT

Codiaeum variegatum (L) Blume is common ornamental plant with high variation of leaves shape and color. The aim of this research, was to analyzed the leaves anatomy and morphology structure, and similarity coefficient between eight cultivars of C. variegatum. The transversal section of leaves was prepared by paraffin method and similarity coefficient was analyzed by Numerical Taxonomy System (NTSYS) 2.1 version. Leaves of eight cultivar C. variegatum is vary in anatomy structure of midvein. The variation was found in the number of xylem-phloem bundle, the existence of palisade and hypodermis in midvein, and the form of hypodermis cell. Eight cultivars of C. variegatum are divided into two cluster. However, the similarity is 73%-89 % between all cultivars, these results indicated the C. variegatum has a high similarity between all cultivars.

Keywords : anatomy variation, *Codiaeum variegatum*, variation within species

Parallel Session 2

Theme :

Microbiology and Health

Time :14.00 – 15.00 AM (Jakarta Time/GMT+7)

The Pretreatment Effect of 8-Hydroxyquinoline and Cold Water on Chromosome of *Oryza sativa* var. Ciherang

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ABSTRACT

Oryza sativa var. Ciherang is the most widely grown rice in Indonesia. Information regarding the karyotype and method of observing the chromosomes of Ciherang rice has never been reported. One of the most important steps in chromosome preparation is pretreatment. The study was conducted to determine the effect of different immersion times (3, 6, and 24 hours) on pretreatment 8-Hydroxyquinoline and cold distilled water compared to control (without pretreatment) on the chromosomal structure and cell mitotic index data from the root tips of *Oryza sativa* L. var. Ciherang. Chromosomal samples were taken from the root tip (0.3-0.5 cm) before being put into pretreatment. The effect of pretreatment was evaluated by observing cell nuclei and chromosome structure, the mitotic index, and the chromosome length. The results showed that there was no different effect between control (without pretreatment), pretreatment with cold distilled water (3, 6, and 24 hours), and 8-Hydroxyquinoline (3, 6, and 24 hours) on mitotic index and chromosome length. The most visible chromosomal structure was observed in the control treatment. The mitotic index and the total percentage of prometaphase - metaphase were the highest at 74% 9.9%, respectively.

Keywords: Chromosome, Ciherang rice, Cold water, 8-Hydroxyquinoline, Mitotic index, Pretreatment.

Antagonistic Yeasts Isolated from *Citrus sinensis* var. Baby Pacitan

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ABSTRACT

Indonesia as a tropical country become an excellent place for many plants to grow, including orange. Orange has many beneficial nutrition functions for man as well as its economic value. There are many local orange varieties found in Indonesia, one of it is Citrus sinensis var. Baby Pacitan, which could be found in Pacitan, East Java. One of the main problems in cultivating this orange is post-harvest fungal infection. It has been reported elsewhere the use of biological agent to tackle the problem, i.e., the application of antagonistic interaction exerts be yeasts. It is the aim of this study to isolate pathogenic fungi and antagonistic yeast(s) from the fruit. Rotten fruits obtained from the farmer were used to isolate the fungi and potential antagonistic yeast(s); fresh fruits were also used as source for yeast(s) isolation. After several isolation efforts, two dominant pathogenic fungi were obtained and based on ITS marker were identified as Penicillium citrinum and Fusarium solani, respectively. Two yeast strains were also recognised showing up to 52.6% growth inhibition against P. citrinum, and both identified as Meyerozyma caribbica based on ITS marker. The result gives us promising biological agents to control the growth of pathogenic fungi on orange.

Keywords : antagonistic yeast, Citrus sinensis var. Baby Pacitan, ITS, pathogenic fungi

The Effects of Giving Methanolic Extracts of Tea Parasite and Mango Parasite on SOD (Superoxide Dismutase) and MDA (Malondialdehyde) Serum in Hypertensive Rats Induced DOCA-Salt

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ABSTRACT

Hypertension is a disease that has an increase in blood pressure above normal values and one of the cardiovascular diseases with the highest mortality. Hypertension can increase the production of superoxide radicals and endothelial dysfunction, which causes oxidative stress characterized by decreased levels of SOD (Superoxide Dismutase) and increased levels of MDA (Malondialdehyde). The use of antioxidants to prevent oxidative stress can alternatively use herbal plants such as tea parasite and mango parasite. Parasite tea and mango parasite can increase the activity of SOD (Superoxide Dismutase) and reduce the concentration of MDA (Malondialdehyde). This study aimed to determine the effect of giving methanolic extracts of tea parasite and mango mango parasite (EMBTBM) on SOD (Superoxide Dismutase) and MDA (Malondialdehyde) serum in hypertensive rats induced by DOCA-Salt for 14 days. This study used a true experimental design method with a completely randomized design on 25 male wistar rats, divided into 5 treatments, namely control (-), control (+), treatment 1 dose of 50 mg/KgBB, treatment 2 doses of 100 mg/KgBB and treatment 3 doses of 200 mg/KgBB with each treatment having 5 replications. Data analysis used one way and post hoc ANOVA test, namely JAMOVI with version 1.1.9.0. The results of this study showed of SOD (Superoxide Dismutase) and MDA (Malondialdehyde) in serum in hypertensive rats induced by DOCA-Salt showed a very significant difference between all treatment groups. This is evidenced by the results of the analysis of p-value <0.05, which is <0.001. So it can be concluded that the administration of methanolic extract of tea parasite and mango parasite at a dose of 50 mg/KgBB in treatment 1 has increased levels of SOD (Superoxide Dismutase), but in treatment 3 gave the most optimal results in increasing levels of SOD (Superoxide Dismutase). And the administration of methanolic extract of tea parasite and mango parasite can reduce MDA (Malondialdehyde) levels at a dose of 50 mg/KgBW which is the optimum dose in reducing MDA (Malondialdehyde) levels in hypertensive rats induced by DOCA-Garam

Keywords : Hypertension, Methanolic Extracts, Tea Parasite, Mango Parasite, SOD MDA

Viability and Morphology of Salmonella typhimurium ATCC 49416 Exposed to Oil Sludge from Phytoremediation

Sri Rejeki Rahayuningsih, Nia Rossiana, Hanny Noerainy

MBI

ABSTRACT

Oil sludge is a toxic chemical compound produced from the oil industry, categorized as Hazardous and Toxic Waste. This waste can be managed biologically by phytoremediation, yet the result of this process needs to be tested for its toxicity. The purpose of this study was to test the oil sludge resulting from phytoremediation for 24 months against the viability and morphology of the bacteria *Salmonella typhimurium* ATCC 49416. A total of five concentrations of phytoremediation oil sludge were used, namely; 0 ppm, 500 ppm, 1000 ppm, 1500 ppm, and 2000 ppm, with three replications. The parameter analyzed was the growth of S. typhimurium using the Total Plate Count (TPC) method, where the number of bacterial colonies was observed every eight hours for 72 hours. Data were analyzed by ANOVA and continued with Duncan's test for further analysis. Changes in bacterial morphology were observed using a Scanning Electron Microscope (SEM) with a magnification of 15,000 X and analyzed descriptively. The results showed that oil sludge at concentration 2000 ppm affected the growth of S. typhimurium. We found that a higher concentration of oil sludge produced lower bacterial cells viability. Additionally, morphological observations showed a change in the shape and size of bacteria at different concentrations of oil sludge.

Keywords: Oil sludge, Salmonella typhimurium ATCC 49416, viability, phytoremediation, Toxic Waste

Parallel Session 3

Theme :

Molecular Biology and Biotechnology

Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

Analysis of Magnesium Ion (Mg^{2+}) Concentration Variation Effect on Wheat Chromosome Using Light Microscope

Adra Ahlina, Fitri Nurchasanah, Andi Salamah, Astari Dwiranti

ABSTRACT

Divalent cations, especially magnesium ions (Mg2+), are important factors for forming chromosome structures. Researches on the effect of Mg2+ on the chromosomal structure have been reported. However, most of them were carried out on human cells. The research evaluating the effect of Mg2+ on plant chromosomal structure is still limited. This study was aimed to determine the effect of Mg2+ on the chromosomal structure of wheat (Triticum aestivum) and to observe the effect of Mg2+ concentration (0, 2, 5, and 20 mM) on the chromosomal structure of wheat. Wheat chromosomes were obtained from root meristematic tissue and chromosomes isolation using enzymatic treatment and squashing technique. The effect of Mg2+ was evaluated by giving different treatments using XBE buffer (0 mM Mg2+), XBE2 buffer (2 mM Mg2+), XBE5 buffer (5 mM Mg2+), XBE20 buffer (20 mM Mg2+), and EDTA as cation chelator. The results showed that the treatment XBE and EDTA resulted in chromosomal structures are scattered and pale in comparison with the treatment XBE5. Chromosome with 2 mM Mg2+ treatment had a slightly condensed structure. The 5 mM Mg2+ treatment gave the most condensed structure compared to others. The statistical test results strengthen the qualitative observations with significant differences ($\alpha < 0.05$) in measuring length, width, and area of chromosomes between treatments. Treatments that caused the depletion of Mg2+ ions (XBE and EDTA) showed measurement results that were longer and wider than XBE5. This result proves that the Mg2+ can affect the condensation process, which results in changes in the chromosome structure. Optimum condensation resulted in chromosomes with 5 mM Mg2+ treatment.

Keywords: *Chromosome condensation, magnesium ion, metaphase chromosome, Triticum aestivum*

The Potential of MatK Gene for Genetic Diversity in Ramie (*Boehmeria nivea* (L)

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ABSTRACT

Ramie (*Boehmeria nivea* (L.) Gaud.) belongs to the Urticaceae family, is an important natural fiber crop. Information on genetic diversity is needed for the selection of plant breeding materials to obtain superior offspring. This study aimed to determine the level of genetic diversity of ramie plants from Wonosobo Regency using plant barcode standards, the maturaseK (matK) gene. Sequencing results were checked using BioEdit, the sequences alignment was performed with ClustalW, and phylogenetic analyses were carried out by MEGA X. The result showed that the matK gene was successfully amplified from all accessions with a 328-348 bp sequence length. Sequence similarity analysis with BLAST showed a similarity of 97.41%-100%. The highest nucleotide substitution that occurred was transition. The phylogenetic tree was formed with the Neighbor-Joining method, divided all accessions into three groups: Group I, II, III and had relatively low genetic diversity based on the genetic distance value.

Keywords : genetic diversity, maturaseK gene, ramie

Genetic Diversity of Birds Blue-Winged Leafbird (*Chloropsis cochinchinensis*) Based on GEN COI DNA Mitocondria

Apin Saputra[1], Jarulis[1], Risky Hadi Wibowo[1], Choirul Muslim[1], Santi Nur Kamilah[1]

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ABSTRACT

The genetic data of the blue-winged leafbird (*Chloropsis cochinchinensis*) is not yet available, while the genetic information is important for its conservation. This study aims to reveal the genetic character, site-specific, and kinship between individual blue-winged birds based on the COI gene of mitochondrial DNA. Total DNA isolation was carried out using Kit DNeasy® Blood and Tissue Kit cat no 69504 (50) based on the procedure Spin-Coloumn Protocol Qiagen with modifications. Amplification using the polymerase chain reaction (PCR) technique. Subsequently, it was electrophoresed with 1.2% agarose gel and visualized under UV light using the Gel Document System Axygen. Then the DNA Bands obtained were sent and sequenced to the First Base Malaysia company. COI gene sequence data were edited and analyzed using MEGA 4 and BIOEDIT applications. The results showed the intraspecific variations in seven individuals of *C. cochinchinensis* with a COI gene sequence length of 616 bp found conservative (C) COI gene 566 sites, Intraspecific variations in seven individuals of *C. cochinchinensis* with a COI gene sequence length of 616 bp found conservative (C) COI gene 566 sites, variation (V) 50 sites, information parsimony (Pi) 24 sites, and singleton (S) 26 sites. The highest nucleotide base composition was cytosine (C) which ranged from 34.1-34.9% and the lowest one was Guanine (G) with a composition of 15.7-16.2%. The nucleotide base pair Adenine and Thymine (AT) (n=7) 49.7% while Guanine and Cytosine (GC) 50.3%. It has 26 specific sites, 17 transition substitution mutation sites, and 9 transverse substitution mutation sites. The average genetic distance of C. cocinchinensis individuals was 0.022 (2,2%). The phylogenetic tree is divided into 2 main groups and 3 sub groups.

Keywords*: Chloropsis cochinchinensis, COI gene, PCR, Mitochondrial DNA*

DNA Barcode Research Trend: the Promise to Uncover Indonesia's Biodiversity

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ABSTRACT

Indonesia is well-known for having a vast and rich endowment of unique and genetically diverse biodiversity resources. Currently, initiatives are taking place around the world to generate DNA barcode libraries to make these data available in order to better understand and conserve biodiversity. The objectives of this study are to document DNA barcode research trends and detect the extent to which its purposes and application have evolved in Indonesia. The interpretations and analytical practices surrounding DNA barcoding in Indonesia are investigated using a compilation of 355 publication papers that have “DNA Barcode” in the abstract, which were obtained from Harzing’s Publish or Perish 3. The number of DNA barcode publication records has increased by a geometric average of 13.6 per year. The number of studies involving molecular identification (137), species and genetic diversity (45), and evolutionary or phylogenetic studies (45) has grown rapidly and appears to have driven much of the publication activity of DNA barcode studies overall. The top three taxa studied in DNA barcode research in Indonesia include fishes (30.7%), plants (25.6%), and invertebrates (12.7%; except insects). We also discovered that the use of a single molecular marker is still dominant (64.2%). We conclude that the practices and paradigms of DNA barcoding data are likely to persist and it is likely to become a valuable resource in many sectors as researchers try to explore Indonesia's biodiversity.

Keywords: biodiversity; DNA barcode; Indonesia; research trends.

Parallel Session 3

Theme :

Biodiversity and Biosistematics

Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

Diversity of Snake Fruit in East Java as a Bioculturall Keystone Species Based on Use Value

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ABSTRACT

The East Java has a high diversity of snake fruit and is not widely known by the public. This study aims to 1) determine the number of accessions in East Java, 2) describe the use of snake fruit and its use value, 3) describe the value category of food plant utilization and 4) analyze the existence of snake fruit as a use value-based Biocultural Keystone Species. The research method used is the exploration method by exploring 10 areas (Bangkalan, Banyuwangi, Bojonegoro, Jombang, Kediri, Lumajang, Malang Town, Malang Regency, Pasuruan, and Trenggalek) in The East Java and conducting interviews with 328 respondents. The results showed that in East Java there were 34 accessions consisting of 5 invasion accessions (pondoh snake fruit) and 29 local snake fruit accessions. Snake fruit is used as fresh fruit, processed food, religious ceremonies and snake fruit festivals. The highest usefulness value of snake fruit is Bangkalan (63.81%) and the lowest is Malang city (1.975%). The use of Pieroni's snake fruit is included in very important criteria. Snake fruit is a biocultural keystone species because it has fulfilled 6 elements.

Keywords : biocultural, biodiversity, keystone, species, snake fruits

Diversity of Shrimp in Gajahwong River, Bantul Regency, Special Region of Yogyakarta

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ABSTRACT

Shrimp are members of crustaceans that can inhabit various types of waters, including rivers. The existence of shrimp is often less noticed, including shrimp in Gajahwong river in Bantul Regency, Special Region of Yogyakarta. This river is under a lot of pressure including the number of pollutants that come from households, agriculture, and industry. This research aims to find out the diversity of freshwater shrimp in Gajahwong river of Bantul Regency. Shrimp taken from three stations in Gajahwong river, which are determined by purposive sampling technique. Data collection is done three times. Identification was carried out at the Laboratory of Ecology and Systematics, Universitas Ahmad Dahlan. The results showed that three species of shrimp were found, *Macrobrachium sintangense* as many as 202 individuals, *Macrobrachium equidens* as many as 14 individuals and *Caridina* spp. as many as 18 individuals. Despite the many sources of pollutants, the environmental parameters in Gajahwong river of Bantul Regency are still suitable for shrimp growth.

Keyword: Bantul, diversity, Gajahwong river, shrimp.

Freshwater Ichthyofauna in the Bogani Nani Wartabone National Park and Surrounding Areas, Gorontalo-North Sulawesi

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ABSTRACT

TNBNW is included in the Wallacea Region which is a transitional zone between Oriental and Australian zoogeography which is estimated to have many unique and endemic flora and fauna species, including fish species that have not been fully disclosed. This study aims to inventory the diversity of ichthyofauna that live in the fresh waters of the TNBNW area and its surroundings. Sampling was carried out by making 11 research stations from the waters that flow from the Matabulawa peak to the Bone River. Samples were collected by electrofishing then identified and preserved using formalin solution. The species of fish obtained were analyzed on the index of diversity, evenness, and species richness. To complete the data, tabulation of data on fish species in the TNBNW area from previous studies as well as specimens that already have catalog numbers deposited in MZB was carried out. This study found 13 species of fish consisting of 6 families and 10 genera. The total ichthyofauna in the TNBNW area and its surroundings is 32 species consisting of 15 families. *Stiphodon* sp. is the species that has the highest relative abundance (48.80), followed by *Poecilia reticulata* (11.00). The species with the highest local distribution was *Belobranchus belobranchs* (90.91%). The rivers that have the highest index of species diversity, evenness, and species richness are Pilolode River, Pilohampaa River, and Loji River, respectively. Two species are classified as introduced fish, namely *Poecilia reticulata* and *Oreochromis niloticus*. Several species of fish have potential as ornamental fish as well as consumption fish.

Keywords**:** Species diversity, ichthyofauna, TNBNW

Changes in Butterfly Biodiversity and Species Composition in Rubber and Oil Palm Plantation Compared to Stream Side Forest Near the Leuser National Park

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ABSTRACT

The aim of this study was to investigate whether the forest conversion into rubber or oil palm plantation is likely to have significant impact on the biodiversity of butterflies. The survey was carried out in six sites of stream side forest bordering with the Leuser National Park and three sites of rubber plantations and another three sites of oil palm plantations both located between 5 to 25 km away from the national park. In each location the sampling was carried out using transect walk method of 100 x 10 m each and repeated for five transects. The results showed that there were 63 taxa of butterflies found in the three habitats. Most of the butterfly species, 52 species, were recorded in the river site forest, but this diversity was 44% lower either in the rubber or in the oil palm plantations. In addition, 25 species of the butterflies inhabited the forest were not detected in both of the plantations and only 15 species were shared by the three habitats. In term of abundance, the number of individuals recorded in the forest area, 149,33 ± 22,39 was significantly higher than the abundance in the rubber, 81,00 ± 12,00 and oil palm plantation, 74,67 ± 38,03 ($F = 12,181$; $P = 0,003$). No significant difference was found both on the abundance and number of butterfly species in both type of the plantations, however about one third of the species found in the two plantations were dissimilar. In conclusion, the the rubber or oil palm plantation environment is inhabitable by a large percentage of butterfly species thus significantly reduced the butterfly biodiversity.

Keywords : Butterfly, Biodiversity, Rubber, Oil Palm, Plantation

Parallel Session 3

Theme :

Conservation of Natural Resources and Environment

Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

New Approach in the Assessment of Species Conservation Status and its Application on The Papua's Endemic Rainbowfishes

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ABSTRACT

Globally, the IUCN issued list of threatened species through its Red List. In Indonesia, the Government has issued Governmental Decree No. 7/1999, which outlines criteria for determine species conservation and its protection status. This research proposed new approach that primarily based on the IUCN's criteria on the assessment of habitat conditions (habitat loss and degradation). The proposed approach has been applied for the assessment of endemic Papua's rainbowfishes. The threat assessment was done by overlay the known habitat of endemic rainbowfishes over the existing or planned large scale development activities using GIS (Geographic Information System). The overlaid areas of known rainbowfishes' habitats and areas designated for each larger scale development activities were calculated to determine the percentage of the habitat under threat. A matrix was developed to capture existing conflicts, which along with other factor (size of original habitat) to determine conservation status of species assessed. The assessment indicated that 4 species as critical, eleven species indicated as endangered and another 15 species as vulnerable. Using this approach, number of species can be assessed in a short-time, as compared to any population studies as suggested in the IUCN criteria. This approach is more applicable to assess species with discrete habitats or well defined distributions, such as species found lake, island or mountain ridge, and species that have detailed information on their distribution.

Key words: critical, endangered, new approach, Papua's rainbowfish, vulnerable

The development of mangrove ecotourism in Jaring Halus Village is an effort to improve the fishermen's economy with their involvement in preserving the mangrove ecosystem.

Mufti Sudibyo, Khairiza Lubis, Dwi Wahyuni Nurwihastuti, Onggal Sihite

ABSTRACT

The lives of fishermen in various regions in Indonesia are considered underprivileged, so to improve the economy of fishermen, ideas and solutions from academics and related policies by local governments are needed. The objective of this development research was to develop a strategy to improve the fishermen's economy in Jaring Halus Village, Langkat District, through the use of neighboring wildlife reserve. The potential of wildlife around the Jaring Halus mangrove area was surveyed using a small motorized boat to determine the best waterway for sightseeing, travel time at high or low tide, location and time for observing animals and local traditions as sources. ecotourism objects, and to determine alternatives for how the community can become a major player in mangrove ecotourism. The survey results show that the most ideal and potential for observing migratory birds is in Batang Buluh waters to Tapak Kuda Lama, Paluh Sembilang to observe mangrove diversity and root complexity, and river estuaries for observing dolphins and seagulls. The ideal time to observe mangrove vegetation is at low tide between 09.00 to 11.00. The local culture of sedekah laut is an attraction for the general public which is commemorated every three years. A number of fishermen have the potential to become tour guides as well as take visitors to ecotourism sites.

Keywords : Ecotourism, Flora, Fauna, Jaring Halus

Microplastic Contamination of Water Networks, Aquatic Fauna, and Interactions With Heavy Metals in the Streams of Rawa Jombor Reservoir

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ABSTRACT

Microplastic contamination in water networks connected to Rawa Jombor Reservoir may increase microplastic concentrations in the reservoir. The water coming out of the reservoir will carry microplastics, spread them further and potentially carry heavy metals that can also be ingested by aquatic fauna. The transfer of microplastics along the food chain leads to a greater likelihood of adverse effects on organisms, especially the highest predators. This study aims to study the concentration and characterization of microplastics in waters, sediments, and aquatic fauna (zooplankton, benthos, and fish) as well as interactions with heavy metals (Pb, Cu, Cd, and Zn). Microplastics were collected from 6 stations. The concentration, polymer type, shape, color, and interactions of heavy metals on microplastics were analyzed. The results indicate that Inlet 2 and Outlet 1 Kali Sosrodiningrat are the most polluted stations for microplastics in waters and sediments. Concentrations in zooplankton and benthos are in line to the results of water. In fish, high concentrations of microplastics were found in the gills of Clarias batrachus species. Heavy metal Cd was detected high in all microplastic samples. This finding indicates that microplastic contamination was found at moderate levels in the inlet and outlet networks of the Rawa Jombor Reservoir, further monitoring is needed to reduce of microplastic contamination and possible long-term hazards that may arise.

Keywords : microplastics, waters, sediments, aquatic fauna, metal adsorption

Kemajuan Kegiatan Penelitian dan Konservasi Herpetofauna di Papua dan Papua Barat Berdasarkan Rekomendasi *Conservation Priority-Setting Workshop* (CPSW) 1997

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ABSTRACT

This research was conducted to see the progress of research and conservation activities in the areas recommended in the CPSW 1997. The data were obtained by means of literature study on herpetofauna in Papua and West Papua. In the remmendation there are 18 recommendation areas, the number of species recorded in all recommended areas during the period 1997-2020 is 586 species. This shows th progress of research activities, while conservation activites in West Papua are also very advanced where important habitats have been included in conservation areas. In addition, the prediction of forest cover in the province of West Papua in 2033 is still relatively good with a total forest area of 43,24%.

Keywords: Research Activities, Conservation Activities, CPSW 1997, Herpetofauna

Parallel Session 3

Theme :

Structure and Development

Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

Response of Two Biostimulan on True Shallot Seed (TSS) Seedling in Laboratory

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ABSTRACT

Farmers keep struggling with TSS germination. The application of bio stimulants can enhance germination. Therefore, at the laboratory level, two types and 13 levels of bio stimulants were tried in TSS seedlings. Hypocotyl length, dry weight of normal seedling, speed of germination, seedling growth rate, germination percentage, the number of seed attacked by fungi and bacteria, abnormal seedling percentage, and dead seeds percentage were all measured. The type of bio stimulant had a substantial effect on the number of dead seeds, as well as the number of seeds infected with fungi and bacteria, according to the findings. The amount of bio stimulant used had a substantial impact on hypocotyl length, dry weight of normal seedling, germination percentage, dead seeds, the number of seeds infected with fungi and bacteria, and speed of germination.

Key words: bacteria, fungi, germination, hypocotyl

The Dynamics of Expression of Xyloglucan Endotransglucosylase / Hydrolase (Xth) and Lateral Root Primordium 1 (Lrp1) Genes and Physiological Responses of Several Tobacco Varieties (Nicotiana Tabacum L.) In Flooding Stress

Tutik Nurhidayati, Hery Purnobasuki, Sucipto Hariyanto and Vita Siti Fatimah

ABSTRACT

Tobacco (*Nicotiana tabacum* L.) is a trading commodity that has high economic value. Tobacco growth is influenced by limiting factors, one of which is *flooding* stress. This study aims to determine the dynamics of gene expression *Xyloglucan Endotransglycosylase/Hydrolase* (XTH) and *Lateral Root Primordium 1* (LRP1) gene and the physiological response of several varieties of tobacco plants (*N. tabacum*) to flooding stress. Indicators of tobacco that are experiencing flooding stress in terms of genetic aspects include the *Xyloglucan Endotransglycosylase/Hydrolase* (XTH) gene and *Lateral Root Primordium 1* (LRP1) gene as well as physiological aspects such as chlorophyll content, productivity, crown: root ratio and Net Assimilation Rate (NAR). The treatment given was flooding stress (partialsubmergence) for 12 days. The results showed that the expression of the Xyloglucan Endotransglycosylase/Hydrolase (XTH) gene and the Lateral Root Primordium 1 (LRP1) gene was up-regulated. While the physiological parameters showed a decreasing trend in all parameters. The Jepon Emas variety has the best response on the chlorophyll content parameter with the lowest decrease of 42.15%, NAR of 76.97%, and the lowest increase in the crown: root ratio of 2.78 while on the productivity parameter, Jinten variety has the best response with the lowest decrease of 50.23%. The Prancak 95 variety was the most sensitive variety to waterlogging and flooding treatments.

Establishing protocol for somatic embryo germination of Arabica coffee

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Indonesian Coffee and Cocoa Research Institute, Jember, East Java, Indonesia

ABSTRACT

The most reliable and efficient protocol for *Coffea arabica* L. of somatic embryo germination was established by using embryoid as an early explant from the induction of embryogenic callus phase. A completely randomized design with 5 replications was designed to accomplish the 20 protocols of embryo germination methods with different step of subculture, size of embryo and germination medium. The embryogenic calluses from the *flush* leave explant were induced embryoid on a half-strength Murashige and Skoog medium fortified with a half-strength combination vitamin of 1.8 mg/L nicotinic acid, 10.1 mg/L thiamin HCl, 3.1 mg/L pyridoxine, 50 mg/L myo inositol, 33 mg/L L.cistein, 1 mg/L Kinetin, 0.1 mg/L NAA, 20 gr/L sucrose, 2.4 gr/L gelrite and pH 5.5. The result showed that 17th protocol was the most effective, with 59,2% of rooted cotyledons, 4.04 cm of length of roots, 1.68 cm of length of hypocotyl, 20.8% of opened cotyledons and 100% of embryos germination at the end of 8 weeks which used the B medium, large embryos and twice phase of subculture from liquid medium to solid medium. The seventeenth protocol is stable protocol from low to high value. The eighth protocol is the steady protocol from high to low value. The seventeenth and the eighth protocols are the highest-ranking and lowest-ranking for each parameter. The seventeenth protocol is the most suitable for the germination embryo somatic.

Keywords: Arabica coffee, embryo somatic, embryoid, cotyledon, hypocotyl, germination

Indonesian *Microhyla heymonsi* (Amphibia: Anura: Microhylidae) in a Veil

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ABSTRACT

Genus *Microhyla* has been a subject of a cryptic species discoveries based on the molecular finding. Researchers have attempted to resolve the position taxonomy of cryptic species which is often referred to as species delimitation. Relationship of Indonesian *Microhyla heymonsi* population to the other congener population was still unclear. We use the 16S rRNA gene mitochondria as molecular markers for both inter and intraspecies analysis to unraveling the Indonesian *M. heymonsi* taxonomical problems. This study revealed the relationship between *M. heymonsi* from Sumatra and Andaman Island population as a single species differ to neighboring population, Singapura and Malaysia. Morphologically, population of Sumatra showed similarity each other and differ from other population in some aspect. Phylogenetic tree generated using NJ indicate two main clade with the separation between Sumatran+Andaman population and Singapuran+Malaysian population. Both clade as a sister of recently described species, *M. ninhthuanensis*, from Vietnam. Interesting finding based on the phylogenetic, genetic diversity, population structure, and connectivity of the *M. heymonsi* unveiling the new information of cryptic species within *M. heymonsi* from Sumatran populations. This finding also support the probability of a single new species within Sumatra and Andaman Island.

Keywords: *Microhyla*, Indonesia, cryptic species, phylogenetic, taxonomy, mitochondrial DNA

Parallel Session 3

Theme :

Microbiology and Health

Time :15.00 – 16.00 AM (Jakarta Time/GMT+7)

Isolation of Antagonistic Yeast from Citrus nobilis and its Inhibitory Effect on Pathogenic Fungi

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ABSTRACT

Orange fruit is one of the most important commodities either at national and global market, which drive the national authority to plant varieties of it. One of the local orange fruits of interest is Citrus nobilis which could be found, for example, in Medan, North Sumatera. Fungal infections are still the main problem of post-harvest disease in oranges, and biological control exploiting antagonistic ability has been developed. Antagonistic yeasts isolated from orange fruit is a promising biological agent to control the growth of pathogenic fungi. This study was conducted to isolate pathogenic fungi from orange fruit and the antagonistic yeast from the same sample. Fruit samples were obtained from orange's farmer in Medan; rotten oranges were used for fungi isolation while yeast(s) were isolated from fresh and rotten fruits. After several isolation and selection steps, two dominant fungi were recovered from the rotten fruits. Molecular identification employing ITS as a genetic marker revealed the fungi as Talaromyces islandius and Aspergillus niger, respectively. The same approach was also done to identify the two dominant yeasts and they are identified as Meyerozyma caribbica and Meyerozyma guilliermondii, respectively. The growth of both fungi was inhibited by each yeast, showing the inhibition of up to 50% implying the promising application of antagonistic yeast as biocontrol agent to fight pathogenic fungi.

Keywords : Antagonistic yeast, Citrus nobilis, ITS, Pathogenic fungi

Screening Test for Hepatitis B and C in Patients at Bhayangkara Hospital

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ABSTRACT

Background: Hepatitis B and C are infectious diseases caused by virus, and transmitted through body fluid and do not cause specific or symptomatic symptoms. A screening test with immunochromatography is an early step for detection of Hepatitis B and C. This study aimed to explain the result of Hepatitis B (HBV) and Hepatitis C (HCV) test in patients at Bhayangkara Hospital.

Methods: Between March-May 2020, we did screening test for 153 patients in Bhayangkara Hospital. We conducted interviews among male and female. Interview topics included sexual-risk behaviors, drugs injection, age, and job.

Results: Patients with reactive HBV 28 persons (18.3%), and HCV 15 persons (73,3%). The male group was the dominant group for reactive Hepatitis B and C. The largest age group for reactive HBV is 20-30 age group (42%), and for reactive HCV is 31-40 age group (46,7%). The employee is the largest group reactive HBV (57,1%) and HCV (66,7%). The risk factor in reactive HBV and HCV respondents was caused by free sex 27 persons (96,4%) and drugs injection 10 persons (66,7%).

Conclusion: Sex and drugs injection can be one of the risk factors for hepatitis B and C. Productive age group and the employees are the largest groups with reactive HBV and HCV.

Keywords: Hepatitis B, Hepatitis C, Risk Factor

The Influence of Floating Net Cage oh The Distribution of Nitrogen Bacteria in the Jatiluhur Reservoir

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ABSTRACT

This study aims to determine the effect of the existence of floating net cages on the distribution of microorganisms that play a role in the nutrient cycle and water quality in the Jatiluhur reservoir, with a specific target of determining the trophic status of the reservoir waters using key parameters, namely microorganisms that are directly involved in the cycle and nutritional status through the nitrification process. and denitrification. This research was conducted using a survey method consisting of research in the field, including environmental monitoring, sampling, and measurement of water temperature parameters, brightness, pH, and dissolved oxygen (DO) which can be carried out in situ at the time of sampling, as well as in the laboratory, including measurements parameters of nutrients and organic content of water, namely total organic weight, ammonium, nitrate, nitrite, and the total number of bacteria involved in the nitrogen cycle. Samples were taken from several points in two different areas, namely with floating net cages and without floating net cages. At each location, samples were taken to a depth of 18 m with a depth interval of two meters. The results showed that floating net cages can cause high abundance of nitrifying bacteria and reduce water quality in Jatiluhur reservoir. The trophic status of Jatiluhur waters is included in the eutrophic waters.

Keywords : Eutophic, Floating net cage, Jatiluhur reservoir, Nitrogen bacteria, Water quality

Determination of Standards Requirements for Tree Canopy Cover for Environmental Conservation in Bandung City

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ABSTRACT

In the spatial planning law number 26 of 2007 article 29 stipulates that every city must provide a minimum of 30% green open space of the total city area. The green open space has an important function in reducing local temperatures, maintaining air quality due to motorized engine pollution, water catchment areas and increasing city comfort while still paying attention to environmental conservation. Environmental conservation is an effort to preserve the environment, taking into account the benefits that can be obtained at that time while maintaining the existence of each environmental component for future use. These benefits have prompted many efforts in the management and conservation of trees in green open spaces. A growing concern for green space managers is how to increase tree canopy cover and its capacity to sequester carbon, reduce local temperatures and water infiltration in urban landscapes. Based on the results of the author's research that a city must have at least 40% tree canopy cover to absorb carbon, reduce local temperatures and water absorption in the urban landscape by taking samples in the city of Bandung.

Keywords: Environmental conservation, standard, tree canopy cover

Parallel Session 4

Theme :

Bioanthropology

Time :10.00 – 11.00 AM (Jakarta Time/GMT+7)

Revealing the cultural heritage of Buah Hitam for culture and nature conservation in Teluk Wondama, West Papua, Indonesia

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ABSTRACT

Buah Hitam, as a non-timber forest product, has been part of the activities of *Wandamen* ethnic in *Teluk Wondama* Regency, West Papua, Indonesia for generations using the traditional concept. However, information on the utilization remained unknown scientifically. Hence, the study aimed to uncover the application of traditional ecological knowledge during utilization and its role in nature and culture. We collected data using interviews with 26 respondents and field observation by making 26 square plots of 20 m x 20 m. The research showed that *Buah Hitam* has been utilized mainly by males, farmers, and adults. Moreover, they still apply the traditional ceremonies using *Buah Bitam* as the primary object. Habitats provide significant tree species richness in primary forest, secondary forest, and home garden. Moreover, local people not only utilize *Buah Hitam* as the main product, but they also use other vegetation during the process. Furthermore, they traditionally save the habitats as they have realized the role of *Buah Hitam* in their activities. This finding showed that the conservation of *Buah Hitam* benefits both nature and culture conservation.

Keywords: New Guinea, flora, tree, ethnobotany, *Haplolobus*

Traditional Ecological Knowledge of Sawe Tribe in Sawe Suma Village, Papua, Indonesia

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ABSTRACT

The objective of this study was to uncover the traditional ecological knowledge of the Sawe tribe, a tribe in Papua that has lost most of its population and without native speakers at this present. A multi-ethnic approach used to reveal the remaining knowledge of the Sawe tribe that blends in the Orya tribal group for more than 30 years, and adopts the cultural elements from this tribe. Data collection conducted through deep interviews. To determine the level of significance of environmental units based on the obtained benefits, the PDM (Peeble Distribution Method) method was used. The results of the research reveals that the Sawe have good knowledge related to the environment, including the environmental units and the benefits that can be obtained. There were at least nine types of environmental units that sufficiently contributed to provide their necessities of life. The three highest benefits obtained from the environment were as a source of food (vegetable), a source of energy (firewood), and a source of animal protein.

Keywords : Sawesuma, Sawe Tribe, Ethnoecology, Papua

Early Menopause: Reproductive Adaptation of Javanese Women in West Papua

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ABSTRACT

Menopause is the permanent cessation of menstruation due to the loss of ovarian follicular activity. Assessment of age at menopause is important because several studies reveal a high risk of morbidity and mortality. This study aims to determine the factors risk of early age at menopause in Javanese women in Oransbari, West Papua Province. The cross-sectional sampling method was carried out on women at average aged 51.73 years with an interval of 40.18–69.59 years. Age at menopause was calculated using Probit Generalized Linear Model (GLM) analysis. We used a binary logit regression model to estimate factors risk of early menopause. Age at menopause divides into two categories, normal (>45 years) and early (<45 years). Our results showed that the average menopause at aged 43.1 years was categorized as early menopause with an age range of 39.61-55.28 years. The results of the partial parameter significant test at a significant level of 5% showed that education, occupation, age at marriage and menarche were risk factors that influenced the occurrence of early menopause. The classification accuracy of the resulting binary logistic regression model is 65,1%. We argue that early menopause was an adaptive response to environmental challenges as a pioneer transmigration community. In facing the challenges of an unfavourable environment such as high physical activity and low socioeconomic status, energy was allocated to the benefit characters that were younger age at menarche, menopause and marriage. The biocultural conditions experienced at the beginning of life in Oransbari shape a younger age of reproductive character as an adaptive response to maximize fitness.

Keywords : Early menopause, Javanese women, Oransbari, adaptive response

Ethnozoological Study in Mubri Wariori Village's Community North Manokwari District Manokwari Regency West Papua Province

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ABSTRACT

The utilisation of wild animals to meet human needs has been existed throughout history. It has been carried out mainly by the community living around forest and coastal areas. Mubri Wariori village is located in the coastal area and directly adjacent to lowland forest. Based on the initial survey, it is known that the community has close interaction with wild animals. However, publications related to ethnozoological studies in this area have not been conducted. This research aims to observe the local wisdom about the variety and the use of wild animals. This research was conducted for three weeks and the data were collected through open interview. Snowball sampling technique is used to determine the respondent and it is limited to people who obtain wild animals by hunting. The result reveals that there are 13 species that have been utilised, namely *Cervus timorensis, sus scrofa, Phalanger orientalis, spilocuscus maculatus, Echymipera* spp., *Dobsonia minor, Chelonia mydas, Eretmochelys imbricate, Varanus* spp., *Morelia viridis, Ducula pinon, Rhyticeros plicatus and Electus roratus.* 85% of the wild animals are used for consumption, 69% for trade, 15% for medicine and 8% for home decoration. Respondents stated that it is increasingly hard to find wild animals. Therefore, they have to expand their hunting areas. However, during the Covid-19 pandemic, they hunt more frequent as a result of restrictions on community activities's policy and high market demand. The community has been also realized the importance of wild animal conservation and has implemented conservation efforts for the paradise bird and sea turtles.

Keywords: The utilisation of wild animal, Hunting, Covid-19 Pandemic

Parallel Session 4

Theme :

Biodiversity and Biosistematics

Time : :10.00 – 11.00 AM (Jakarta Time/GMT+7)

Keanekaragaman Odonata di Sekitar Pegunungan Arfak, Papua Barat

Ade Rahayu Pattiran

ABSTRACT

Provinsi Papua Barat diketahui memiliki keanekaragaman hayati dan tingkat endemik yang tinggi. Odonata adalah salah satu taksa dengan keragamanan jenis dan tingkat endemik yang tinggi dan berperan penting sebagai indikator keadaan lingkungan. Seperti kebanyakan taksa lainnya, penelitian lapangan mengenai keragaman jenis, penyebaran dan habitat Odonata (capung) masih terbatas di Papua Barat. Namun habitat Odonota terus terancam akibat konversi hutan dan lahan untuk pembangunan infrastuktur. Penelitian ini dirancang untuk mendokumentasi keragaman Odonata di sekitar Pegunungan Arfak, terutama di Kampung Uyehegbrik (Distrik Prafi), Kampung Hijou (Distrik Neney) dan Kampung Anggra (Distrik Minyambou). Data lapangan dikoleksi secara puposif. Indeks Keragamanan Shannon (H') dan uji t digunakan untuk menghitung dan membandikan keragamanan jenis antara lokasi penelitian, dan Indek Sorensen untuk membandingkan kesamaan spesies antara lokasi penelitian. Ada 21 spesies dari 7 family yang berhasil dicatat dalam penelitian ini. Hasil penelitian menunjukkan Indeks Keragamanan Shannon (H') berkisar antara 1,43 – 1,89 menunjukkan keragaman moderat, kolam merupakan habitat utama. Ada korelasi positif antara suhu dan kelimpahan spesies (individu). Penemuan beberapa spesies yang mungin baru menunjukkan bawah masih banyak belum diketahui.

Kata Kunci: Pegunungan Arfak, Neney, Minyambow, Keanekaragaman Odonata, Prafi

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ABSTRAK

Hutan tropis dataran rendah diketahui merupakan habitat penting bagi berbagai spesies tumbuhan dan fauna. Hutan tropis juga berperang penting untuk menjaga fungsi hidrologis dan saat diketahui memilih fungsi penting dalam menjaga gas rumah kaca, salah satu penyebab perubahan iklim global. Namun, hutan tropis banyak telah konversi ke berbagai fungsi non hutan, seperti perkebunan komersial. Sebagai negara tropis, Indonesia memiliki hutan tropis terluas ke dua di dunia. Walaupun pemerintah dan pengiat konservasi telah berusaha untuk menjaga perubahan fungsi hutan, tetapi perubahan fungsi hutan terus terjadi sejalan dengan pertambahan penduduk dan kebutuhan pembagunan. Penelitian ini dirancang untuk meneliti dampak perubahan fungsi hutan ke non hutan terhadap keragaman katak di Distrik Prafi, Kabupaten Manokwari. Kami membandingkan keragaman katak pada 3 fungsi hutan: hutan sekunder, perkebunan sawit dan perkebunan kakao. Hasil penelitian ini menunjukkan konservasi hutan ke non hutan memberikan dampak negatif terhadap keragaman katak. Konversi hutan juga memberikan kesempatan pada spesies yang diintroduksi seperti *Duttaphrynus melanostictus*, *Fejevarya cancrivora* dan *F.* limnocharis hidup dan mendominasi habitat baru ini. Suatu hal menarik adalah bahwa tidak ada satupun spesies asli Papua yang dapat diamati di perkebunan, walaupun perubahan atau konversi hutan telah terjadi sekitar 40 tahun lalu. Penelitian ini juga memastikan kehadiran spesis introduksi baru F. limmocharis di Prafi. Spesies ini mungkin dimasukkan secara tidak sengaja ke Tanah Papua.

Kata kunci: Keragaman katak, dampak perubahan fungsi hutan, Distrik Prafi.

Composition and Distribution of Merbau (*Intsia bijuga*. O. Ktze) in the Coastal Area of Mansinam Island

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ABSTRACT

The distribution of merbau wood on the mainland of Papua is quite wide, especially in the lowlands and coastal areas which generally grow and are associated with other tropical wood species. It is recorded that almost 50 percent of the total population or about 15,000 hectares of Merbau species in Indonesia are distributed in the plains of Papua. In general, the genus Intsia grows on dry rocky soil, sometimes on sandy soil, clay and moist soil that is not flooded, from lowlands to highlands with an elevation of 0-1. 000 meters above sea level. In theory and literature, *Intsia bijuga* is generally suitable to grow in sandy and rocky habitats, especially on sedimentary soils in lowland forests. Ecologically interesting, on Mansinam Island as a strategic area for cultural development of the Papuan people and Christians, one species, namely merbau, is found in this area, precisely on the coast of Mansinam Island. With the increasing scarcity of merbau species in natural habitats, it is important to collect distributional and morphological ecological data of this merbau species, especially the presence of this species on the coast of Mansinam Island as basic data on its potential and development as well as in-situ conservation in the future. This study aims to determine the habitat conditions and distribution of stands of merbau (*Intsia bijuga* O. Ktze.) in the coastal area of Mansinam Island. The results revealed the distribution of the species *Intsia bijuga* O. Ktze. At the pole and tree level, it is a clustered distribution pattern because it has Id > 1 with the most abundant spatial distribution pattern along the western coast to the coastal southern part of Mansinam Island.

Keywords: Merbau, Mansinam island coast, structure composition, vegetation analysis.

Bird Diversity and Potential for the Preparation of a Forest Management Plan of Ubadari Village In Fakfak

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ABSTRACT

A bird survey was conducted in Ubadari Village, Kayuni District, Fakfak Regency, West Papua Province, on 3 – 15 February 2021. This survey aims (1) to evaluate bird diversity, distribution and potential of various habitat types in the village forest of Ubadari, Fakfak; (2) to determine the level of utilization and knowledge of the local community about birds; (3) to evaluate the potential of birds that can be used as a tourism object and provide recommendations for the development of a bird ecotourism plan in Ubadari Village; and (4) to provide directions for the preparation of the Ubadari Village RPHD (Village Forest Management Plan). The observation method was a unit sampling combination of transect line of 2 km and 11 VCP (*Variable Circular Plots*), in addition of a Point Count method outside the transect line. The results found as many as 134 bird species on transect 1 (old secondary forest, HST), 141 bird species on transect 2 (primary forest, HP) and 141 bird species in mixed forest (HC). The diversity index (H') of bird species was (HST = 2.037), (HP = 2.053), and (HC = 2.057) showed moderate bird species diversity at the three locations. Evenness index (E) at the three locations was (HST = 0.65), (HP = 0.63) and (HC = 0.68) indicating moderate evenness of species. The species richness index (R) at the three sites was (HST = 43,1), (HP = 43,2), and (HC = 46,1) indicating moderate ecological quality in HST and HP but increased in HC. While the value of Species Similarity (IS) between each location was as follows: HST versus HP of 97.84%, HST versus HC of 97.84%, and HP versus HC of 100% indicate that there were similarities in bird species in the three locations. By looking at the potential for biodiversity, especially birds that was found in the forest of Ubadari Village, therefore it is recommended to develop a concept of a bird ecotourism plan and forest biology education. In this regard, it is necessary to involve the community in village forest management in Ubadari Village.

Keywords: bird diversity, village forest, forest management plan, Ubadari, Fakfak

Parallel Session 4

Theme :

Conservation of Natural Resources and Environment

Time : 10.00 – 11.00 AM (Jakarta Time/GMT+7)

Conservation effort of Akway (Drimys spp.) by Kwau Village Community in Warmare District, Manokwari

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ABSTRACT

Drimys spp. is a plant known as Akway by local name / trade that grows in the Arfak Mountains area. Akway bark is not only used as a traditional herb by the Arfak tribe, but also has been traded or consumed by other communities. The trade of Akway bark is providing business opportunities for the community, however this also can cause indirectly reducing its population in forest. Especially if there is no effort from the community to preserve it. This study examines conservation efforts of Akway (Drimys spp.) conducted by Kwau village community. The aim of this study is to know the type and level of conservation efforts and to find out the local wisdom of the community in maintaining Drimys spp. The method used in this study is a descriptive method with interview techniques. The results showed that the people of Kwau village have made all conservation efforts, namely aspects of protection, preservation and utilization of Drimys spp., although still in the category of "insufficient", while local wisdom carried out by the community for Drimys spp. related to the application of forest management in the concept of Igyaserhanjop.

Keywords : Drimys, Conservation, Wisdom

Species Invasive in Secondary Forests for Increasing Soil Fertility in Inoduas Village

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ABSTRACT

Invasive species are now often a problem and a threat to the existence of biodiversity in a forest landscape. Studies on other impacts such as increasing soil fertility are still very minimal. The purpose of this study was to identify the types of invasive species in the secondary forest of Inoduas village and their impact on soil fertility. The method used is vegetation analysis with continuous line sampling at 1 Ha with 4 growth phases: 2 x 2 m seedlings, 5 x 5 m saplings, 10 x 10 m poles, and 20 x 20 m trees. The impact of soil fertility was carried out by taking disturbed soil samples at a depth of 0 – 20 cm and 20 – 40 cm. Soil chemical elements observed were soil pH, Organic C, Total N, C/N ratio, available P2O5, Potential P2O5, Potential K2O, Ca, Mg, K, Na, CEC, KB, and Soil Texture Class. The results showed the highest INP was *Litsea timoriana* seedling phase, sapling phase to *Spatodea campanulata* tree. The results of soil chemical analysis at a depth of 0-20 cm in the low category are Organic C and C/N Ratio, Medium category is total N, High category is Potential P2O5, Mg, K, and Na; Very High category is available P2O5, Potential K2O, Ca, CEC, and KB, Dusty Clay texture class. Chemical analysis of soil at a depth of 20-40 cm very low category is organic C, Low category Total N, and C/N, Medium category is KB, High category is Ca, Mg, K, and CEC, very high category is P2O5 Available, K2O Potential, and Na, texture class Clay. Soil fertility is moderate.

Keywords: Invasive species, Soil Fertility, Inoduas Village

Carbon Estimation of Seagrass *Cymodocea rotundata* at Rendani Beach, Manokwari Regency, West Papua Province

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ABSTRACT

Seagrass has a very important role in reducing CO2 emissions by binding carbon. Therefore, this study aims to describe biomass and estimate carbon storage of seagrass *Cymodocea rotundata* in Rendani Beach, Manokwari Regency, West Papua. The method used is purposive sampling using three transect lines and 30 squares measuring 30 cm x 30 cm. Biomass measurements were carried out on all squares of observations while for carbon content analysis was carried out on three squares in each transect. Carbon analysis was performed using the ashing method or Loss on Ignition. The results showed that the density of *C. rotundata* ranged from 44.44 - 4877.78 stands/m² and the dry biomass ranged from 13.33 - 873.33 gbk C/m². The results of the analysis showed the relationship between density and dry biomass of *C. rotundata* following the equation B = 196.13 + 1.6221K. Carbon estimates for this species range from 65.07 - 170.27 gbk C/m². Seagrass vegetation has an important role in storing carbon, however its presence in coastal waters has experienced many disturbances as a result of anthropogenic activities so that conservation efforts need to be made.

Keywords: *Cymodocea rotundata*, density, biomass, ashing method, carbon storage.

Paradise Island Undercover: Community-Based Conservation in Raja Ampat

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ABSTRACT

The natural beauty of Raja Ampat is a dream for world explorers, its appeal lies in the expanse of the archipelago that is tightly wrapped by tropical wilderness shrouded in fog. Behind this world nature-lover's paradise, Raja Ampat people had voiced an interest to protect the forests and wildlife from the threats. Raja Ampat community in Waigeo Island gathered in a group called forest farmer group and actively do patrol in their forest. The activities of forest potential mapping along with forest protection were using SMART (Spatial Monitoring and Reporting Tool) method. The results of the 48-day patrol carried out by a team from three villages namely Warkesi, Waifoi, and Kalisade in the 2019-2021 period have raised forest potential and threat data. The biodiversity recorded by the community consists of 155 species of plants, 25 species of herpetofauna, 82 species of birds, and seven species of mammals. Some of the species found were endemic, namely *Wallaceodoxa raja-ampat*, *Cophixalus rajampatensis*, and *Paradisaea rubra*. Of the total forestry threat findings, 2% were illegal hunting, 31% forest encroachment and 67% illegal logging. The most targeted species of illegal logging are *Intsia* spp., *Pometia pinnata*, *Hopea* spp., *Manilkara fasciculata*, *Anisoptera thurifera*, *Nageia wallichiana*, and *Dracontomelon dao*. The potential and threat data become important information for local governments in regional development plans. This community-initiated conservation action is an opportunity for a sustainable conservation program to maintain the beauty of Raja Ampat from ridge to reef.

Keywords: Raja Ampat, conservation, forest farmer group, biodiversity, forestry threat

Parallel Session 4

Theme :

Structure and Development

Time : 10.00 – 11.00 AM (Jakarta Time/GMT+7)

The Last Mangrove of Mansinam Island and Structural Stand Based on Spatial Distribution Type

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ABSTRACT

Mansinam Island is known as a historical site for Christians in the Land of Papua, but it is also a lowland tropical forest that has a unique biodiversity of flora and fauna. Mansinam Island is important due to it can balance the Papua's exotic ecosystem, especially in coastal areas. However, the existence of mangrove plants in the island is gradually depleted. This is due to the condition of the mangrove ecosystem which is experiencing anthropogenic disturbances. The purpose of this study was to determine the types of mangroves and the spatial distribution pattern of mangroves based on actual mangrove growth stands on Mansinam Island. The results showed that the remaining 4 mangrove species from 4 different families were: *Lumnitzera littorea*, *Exoecaria agallocha*, *Scyphiphora hydrophyllaceae*, and *Sonneratia alba*. Currently the remaining dominant actual stand of mangrove is *Lumnitzera littorea* with 109 individuals out of 160 individuals found with an Important Value Index (INP) of 135, 72. Spatial forms distribution of mangrove species in Pulau Mansinam are group and uniform pattern.

Keywords: Last Mangrove, Mansinam Island, spatial distribution pattern.

Genetic diversity of LDLR gene in indigenous people of Papua and its implications on native Papuan population haplogroups

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ABSTRACT

Single nucleotide polymorphisms (SNPs) in human LDLR gene have been widely reported. However, there are no published reports yet in relation to the polymorphisms of LDLR gene in indigenous people of Papua. This study aims to identify the genetic polymorphisms of LDLR gene sequence in indigenous people of Papua and to construct a phylogenetic tree to figure out the genetic relationship of the human LDLR gene sequence from the native Papuan population. DNA samples were taken from 15 indigenous. The DNA samples were then amplified and sequenced. Two sizes of sequencing were obtained, i.e. 1010 bp and 753 bp. The sequence analysis identified 4 polymorphic sites which forms 5 haplotypes. Two SNPs were identified in the intron 17 region, namely IVS17−80 G>A and VS17−42 A>G, and two SNPs in the 3'UTR region, namely *52 and *504. The nucleotide diversity the SNPs is of 0.00174. The identified haplotypes are GAGG, GGGG, GGGA, AAAA, and GAAA with a diversity of 0.676 ± 0.105. The phylogenetic analysis of LDLR gene sequences from the indigenous people of Papua showed that some individuals have a somewhat genetic distance with others. The results of this study open up opportunities for the development of modern bioethnoanthropology and population genetics research based on phylogenetic analysis of the LDLR gene.

Keywords : LDLR gene, Papua, SNPs, Phylogenetic

New Record on *Spilocuscus rufoniger* distribution and its potential threat in Kabupaten Teluk Wondama

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ABSTRACT

Spilocuscus rufoniger, a critically endangered Cuscus, is known to its limited distribution in New Guinea island. Latest report describe that the species were limitedly distributed in the lowland of New guinean Bird Heads cape and northern side of New Guinea's lowland forest. However, our survey which aimed to verifies previous report on the species existence in Cenderawasih Bay forest area, found that the species is presence within the mentioned area. A series of night survey, community interviews and documents verification were conducted and analyzed. Result showed that the species were positively exist within the area. Our study indicate that the species might distributed wider than its previously predicted. Moreover, our findings also discover that *Spilocuscus rufoniger* were one of many species impacted in logging operations. Conservation actions are needed to avoid further threat on *Spilocuscus rufoniger* population within logging concession areas.

Keywords : Record, distribution, Spilocuscus rufoniger, threat

Karakteristik Hemipenis Sauria New Guinea**:** *Lamprolepis smaragdina* **(Scincidae) dan** *Hypsilurus dilophus* **(Agamidae)**

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ABSTRAK

Karakteristik hemipenis Scincidae dan Agamidae New Guinea sangat jarang diteliti walaupun sangat mudah dilakukan. Karakteristik morfologi daan ukuran hemipenis antara kedua famili ini sangat berbeda. Ada yang memiliki hemipenis berbentuk silinder tidak berlobus hingga berlobus, bahkan ada juga yang memiliki struktur yang beragam dengan ornamen khas. Panjang ekor dapat memengaruhi panjang hemipenis. Penelitian ini bertujuan untuk mendeskripsikan karakteristik hemipenis Scincidae dan Agamidae New Guinea. Spesies *Lamprolepis smaragdina* dan *Hypsilurus dilophus* dijadikan sampel untuk mewakili spesies lainnya dalam kedua famili ini. Preservasi hemipenis kadal mengacu pada penelitian Zaher dan Prudente (2003), Dowling dan Savage (1960). Perbandingan morfologi hemipenis dari kedua spesies sangat berbeda berdasarkan struktur dan bentuknya. Hemipenis *L. smaragdina* berbentuk silinder dan tidak berlobus. Struktur permukaan hemipenisnya halus dan tidak ada ornamen yang khas. Sedangkan *H. dilophus* memiliki bentuk hemipenis silinder tidak berlobus dengan ukuran yang lebih besar. Strukturnyapun kasar, bergelombang dan lebih lebar. Hasil pengukuran sampel dalam penelitian ini juga sudah menjadi bukti yang cukup kuat bahwa panjang ekor kadal dapat mempengaruhi panjang hemipenisnya.

Kata kunci: karakteristik hemipenis, sauria, scincidae, agamidae

Parallel Session 4

Theme :

Microbiology and Health

Time : 10.00 – 11.00 AM (Jakarta Time/GMT+7)

Isolation and Identification of *Salmonella* sp. Bacteria in Purebred Chicken Eggs Sold in Manokwari Traditional Market

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ABSTRACT

Purebred chicken eggs are a source of protein that contains complete nutrition for humans. Nutrient contents in eggs are also a good growth media for bacteria. The damage caused by bacteria to the eggs can occur when the eggs are both in and outside the hen's body. The main pathogenic bacteria that contaminate eggs and processed egg products are caused by *Salmonella* sp. The purpose of this study was to isolate and identify *Salmonella* sp. bacteria in purebred chicken eggs sold in Manokwari Traditional Market. The research method used was a descriptive method. In addition, purposive sampling method was used for sampling procedure. Isolation of *Salmonella* sp. consisted of three stages, namely pre-enrichment, enrichment and isolation of bacteria on the selective medium *Salmonella Shigella Agar* (SSA). Based on the results of Gram staining, cell morphology observations and biochemical characterization, there were four samples of purebred chicken eggs (S2, S4, W5, and W7) containing *Salmonella* sp. The presence of *Salmonella* sp. in the egg samples tested were caused by the hygiene condition, temperature and time duration of the eggs in the storage area as well as the hygiene of the egg shells.

Keywords : Purebred chicken eggs, *Salmonella* sp., hygiene of the egg shells, storage temperature, storage time duration of eggs.

Identification of Lactic Acid Bacteria from Cabbage (*Brassica oleracea*) Waste Fermentation

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ABSTRACT

Cabbage (*Brassica oleracea*) is a vegetable that contains vitamins, minerals, carbohydrates, protein, fat that can be used to make lactic acid. Lactic acid bacteria are gram-positive bacteria that are good in the process of fermenting vegetables. The method used in this research is descriptive which is presented in tables and figures. The results of the isolation of lactic acid bacteria from fermented cabbage waste obtained 12 isolates. Then continued with a test of the ability of antibacterial activity using the well method using the test bacteria: B. *subtilis, S. Aureus, Enteropathogenic E. coli (Epec)* and *E. coli.* Based on the results of the antibacterial activity test against the test bacteria, 3 isolates showed the ability to inhibit the growth of the tested bacteria in the strong and very strong categories. The results of characterization based on gram staining, cell morphology observations and biochemical tests showed that the isolate coded MA1 belonged to the genus Lactobacillus, the isolate MB2 belonged to the genus Leuconostoc and the isolate MM belonged to the genus Pediococcus

Keywords: Identification, Lactic Acid Bacteria, Cabbage (*Brassica oleracea*)

Phytochemicals and Antioxidant Activity of Kebar Grass (*Biophytum petersianum* klotszch) Aquadest Extracts

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ABSTRACT

Kebar grass (Biophytum petersianum), is a endemic plant in Kebar District, Tambrauw Regency, West Papua. Kebar grass contains vitamine E which is known to function as an antioxidant. The purpose of this study was to determine the appropriate extraction method, total phenol content, antioxidant activity, and the best concentration of kebar grass extracts. The research method used an experimental method with two treatments, namely the extraction method and the concentration level of the extract. The extraction method consists of two (2) methods, namely infusion and decoction. While the concentration level consists of six (6) levels. The observed variables consisted of extract yield, phytochemicals content, total phenol, and antioxidant activity using the DPPH method. The results showed that the yield of the extract from the infusion and decoction methods was 63% and 46.6%, respectively. The infusion and decoction methods resulted in phytochemicals content of alkaloids, flavonoids, tannins, and saponins. Total phenol of the infusion and decoction methods were 51.08 µg GAE/mL and 48.48 µg GAE/mL, respectively. The infusion and decoction methods produced the best antioxidant activity of extract concentration of 0.08% with an activity value of 34.39 µg Eq. Vitamine C and 34.34 µg Eq. Vitamin C, respectively. These results indicated that kebar grass aquadest extracts can be used as a source of natural antioxidant.

Keywords**:** antioxidant activity, *Biophytum petersianum* Klotzsch, DPPH, phytochemicals, total phenol

Hand Preference and Creativity of Papua University Student

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ABSTRACT

Human has preference to use their hands for various manual activities. Left-handed is people who tend to use their left hand to perform various manual activities, while right-handed people tend to use right-handed. Our study aims to determine the percentage of left handed preference and their creativity in Papua University, Manokwari West Papua. Data collection used questionnaire to evaluate individual hand preference using *Handedness Questionnaire* and to determine individual creativity using *Adjective Check List.* The percentage of left handed people in Papua University were 9,3% or lower than right handed and higher than ambidextrous. Our study supports the statement about selection in handedness in the traditional society which showed a higher percentage of left hander as advantages related to using hand intensively. The percentage of left handed males and females was almost equal, and strongly left handed was higher in females. The percentage of creative people was higher in left handed, especially in males.

Keywords: Left handed, creativity, Papua University, student

Parallel Session 5

Theme :

Biodiversity and Biosistematics

Time :11.00 – 12.00 AM (Jakarta Time/GMT+7)

Mangrove Vegetation and Mangrove Litter Production of *Rhizophora stylosa* and *Sonneratia alba* in Wasti Lake, Manokwari Regency

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ABSTRACT

The productivity of mangrove litter is the most important part in the transfer of organic matter from mangrove vegetation into the waters. Litter is the main source of organic matter in mangrove forest waters produced by mangrove plants such as leaves, twigs, fruit and flowers. The purpose of this study was to determine the mangrove vegetation and litter production of Rhizophora stylosa and Sonneratia alba mangroves in Wasti Lake, Manokwari Regency. The method used in this study is the quadratic transect method for mangrove vegetation and the litter trap method for litter production. This research was conducted in July-August 2021 at Telaga Wasti, Manokwari Regency and the Laboratory of the Faculty of Fisheries and Marine Sciences, University of Papua. The results showed that the value of mangrove vegetation in Wasti Lake ranged from 14 to 496 ind/ha. Mangrove litter production of Sonneratia alba was 0.79 gr/m2/28 days or 0.028 gr/m2/day and Rhizophora stylosa was 0.75 gr/m2/28 days or 0.027 gr/m2/day.

Keywords : Mangrove Vegetation, Litter Production, *Rhizophora stylosa*, *Sonneratia alba*

Banana Variations and its Utilization in the Lowlands of Manokwari Regency

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ABSTRACT

Bananas are pseudo-trunked herbaceous plants that have many benefits for humans in their life. Information about cultivars and the use of bananas in the regency of Manokwari has not been widely reported. This study aims to record banana varieties and their utilization in the lowland areas of Manokwari Regency. Sampling was carried out using survey methods and interviews with garden owners and local communities in 36 villages in Manokwari Regency. Data collection of banana utilization was also carried out in markets, stall and food vendors who use bananas. To determine the varieties of bananas and types of wild bananas, the identification was done based on morphological characters. The results showed that there were 27 banana cultivars belonging to *Musa acuminata*, *Musa balbisiana*, *Musa fe'i*, *Musa* X *paradisiaca* and 3 types of wild bananas (*Musa acuminata ssp. malaccensis*, *Musa peekelii* and *Musa acuminata ssp. banksii*). About 27 banana cultivars and 1 type of wild banana are used as food ingredients (without processing/fresh eating or which need to be processed before eating), food wrappers, medicinal ingredients and traditional ceremonies.

Keywords: banana cultivar, wild species, lowland, Manokwari Regency.

Biodiversity of Butterfly (Lepidoptera: Papilionoidea) in Oil Palm Plantation in Concession Area of PT. Henrison Inti Persada (PT. HIP) Sorong West Papua

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ABSTRACT

Lepidoptera consists of 45 superfamilies and one of them is the superfamily Papilionoidea which includes butterflies. Superfamily Papilionoidea consists of families Papilionidae, Pieridae, Riodinidae, Lycaenidae, and Nymphalidae (Kristensen 2007). Especially for the Superfamily Papilionoidea butterflies which have been identified in Papua as many were 568 species (Parson, 1999) spread over various types of habitats in Papua, including West Papua. Sorong is one of the regencies in West Papua where there is a conservation area in its territory, including the Klamono area. Conservation area of PT. Henrison Inti Persada (HIP) is located in the Klamono area which is a forest classified as primary forest and secondary forest, and there are oil palm plantations. The research was conducted in the area of PT. HIP Klamono Sorong. The research was carried out in 2 periods, namely April (9 days) and September (9 days) in 2015 using the line transeck method. Transects were placed in each habitat type of primary forest, secondary forest and oil palm plantation area. The total species found in period 1 were 105 species and 1859 individuals and period 2 were 139 species and 1803 individuals. There are 50 new species found in survey 2 and there are 14 species that were only found in survey so that the total species found in the PT.HIP Sorong area are 153 species. The species accumulation curve is not stationary yet, it is still possible to add species. Butterfly diversity was highest in Klawilis 2&4 forest and plasma forest with 64 species, compared to other areas (Klaga estate: 53 species, Kalwilis: 61 species, Klalobo Hill: 62 species, and oil palm plantation area : Blok C40/D40 : 26 species, Block D 05:7 species).

Keywords: Biodiversity, Butterflies, Oil Palm Plantation, Sorong

Banana Varieties Affected With Blood Disease Bacterium (Blood Disease Bacterium) in Bowi Subur Village. Manokwari Regency

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ABSTRACT

Farmers in Indonesia suffer losses due to banana blood disease. One of the districts that experienced a decline in banana production were the District of Masni, Manokwari Regency. Through this research, an analysis of banana varieties that were infected with banana blood disease was carried out in Bowi Subur Village of Masni District. A survey method was used in observing disease symptoms that appeared on banana plant organs, moreover some interviews was done with farmers. The results showed as many as 7 varieties of bananas were attacked by the banana blood disease. The level of damage found in each banana variety is different. Banana varieties that show symptoms of disease with a level of damage of 70% are kepok bananas (Musa balbisiana), raja bananas (Musa paradisiaca), and mulin bananas (Musa acuminata), varieties with damage levels > 30-70%, namely tanduk bananas (Musa paradisiaca), susu banana (Musa acuminata), Ambon banana (Musa acuminata), varieties with <30% damage rate are lilin banana (Musa acuminata).

Keywords : banana blood disease, banana varieties, Manokwari regency

Herpetofauna from Ubadari Village Forest, Fak Fak

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ABSTRACT

Obadari forest is one of the important herpetofauna habitat. The forest lies on diverse geomorphology and topography including creeks, vertical caves with small springs. These formations have influenced the diversity of herpetofauna in the forest. This study was designed to document herpetofauna species in Obadari Forest, Obadari, Fakfak. We used VAES at a 2000-meter transect randomly located within the forest. Patch survey was also used to sample habitats that not within the transect. Reptiles and amphibians were observed during days and nights. Direct interview with member of Obadari community to gather information on what are the common herpetofauna species and how would they react in such encounter. About 45 species herpetofauna were recorded during this study between 2-15 February 2021, of which 15 species frogs from Hylidae, Microhylidae and Ranidae: and 30 species of reptiles from Scincidae, Geckonidae, Varanidae, Colubridae, Pythonidae and Elapidae. Although these data relative sufficient to represent all herpetofauna in this forest, we believe more may yield more species. This result also indicate that Obadari forest is an important habitat for Papuan herpetofauna species

Keywords: Ubadari forest, herpetofauna diversity, Fak Fak Regency.

Parallel Session 5

Theme :

Conservation of Natural Resources and Environment

Time :11.00 – 12.00 AM (Jakarta Time/GMT+7)

Pengaruh Kegiatan Masyarakat Terhadap Keanekaragaman Herpetofauna di Sekitar Taman Wisata Alam Gunung Meja Kabupaten Manokwari.

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ABSTRACT

Penelitian ini bertujuan untuk mengetahui pengaru kegiatan masyarakat di sekitar Taman Wisata Alam Gunung Meja (TWAGM) terhadap keanekaragaman herpetofauna. Penelitian ini dilaksanakan di Kampung Ayambori (ada kegiatan perkebunan), Kampung Idimek (ada kegiatan penebangan pohon) dan hutan TWAGM (jauh dari jangkauan masyarakat). Pengumpulan sampel herpetofauna dilakukan secara Stratified Random Sampling.Shannon-Weiner Diversity Index(H') digunakan untuk menghitung species diversity dan t-test untuk melihat perbedaan keragaman spesies dan Sronsen Indeks of Similarity untuk melihat kesamaan spesies di tiap lokasi. Penelitian ini berhasil mencatat ada 18 spesies herpetofauna dari 8 famili. Hasil penelitian ini menunjukkan bahwa adanya pengaruhyang nyata kegiatan masyarakat di Kampung Ayambori pada titik 0 meter (ada aktivitas perkebunan) dan Kampung Idimek pada titik 300 dan 600 meter (aktivitas penebangan pohon) terhadap kearagaman herpetofauna. Spesies herpetofauna yang ditemukan di daerah yang ada aktivitas masyarakat (Kampung Ayambori dan Kampung Idimek) berbeda dengan spesies yang ditemukan di hutan TWAGM yang sangat minim aktivitas masyarakat. Pengaruh kegiatan masyarakat berdampak pada keragamanan herpetofauna dalam Taman Wisata Alam dan dalam jangka panjang dapat mengacam keberadaan TWAGM.

Kata kunci: Keanekaragaman herpetofauna, Taman Wisata Alam Gunung Meja, Manokwari

Study of Water Quality of the Mako-Mako River as a Raw Water Source for Clean Water in Yembekiri Village

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ABSTRACT

This study aims to determine the water quality of the Mako-mako river based on physical, chemical and microorganism parameters as well as the effect of metal and microorganism levels on the color of the water and sediment of the Mako-mako river. Physical parameters include temperature, TDS and TSS while chemical parameters include pH, levels of Fe and Mn metals in water and sediment as well as microbiological parameters. The influence of microorganisms on water quality was determined based on the type, abundance and diversity index of plankton in the water of the Mako-mako river. The method of sampling water, sediment and plankton by purposive sampling at 3 (three) location points, namely the upstream, middle and downstream of the river. The concentrations of Fe and Mn in water and sediment were analyzed using AAS, while the identification of plankton using a binocular microscope. The results of the analysis of the water quality of the Mako-mako river show that the parameters of temperature, TDS, TSS and Mn are still below the water quality standard for class 1, except for the Fe and total coliform parameters whose concentrations have exceeded the water quality standard for class 1. So that to use the Mako-mako river water as a source of raw water, clean water needs to go through a processing process. The metal content of Fe in the Mako-mako river sediment is high and affects the color of the Mako-mako river sediment which is reddish brown to dark brown (deep). The presence of plankton with a low level of abundance and diversity index did not affect the color of the river water or the sediment of the Mako-mako river.

Keywords : Mako-mako River, plankton, sediment, Water quality

Criteria for Assessing the Capacity of Coral Reef Ecosystem of Nusmapi Island Manokwari ^

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ABSTRACT

Coral reefs have roles in human life, including functioning as breakwaters and protecting coastal areas from the ocean waves, so as to prevent or minimize shoreline abrasion. This study aims to assess the capacity of coral reefs on Nusmapi (known as "Lemon") Island Manokwari. The method used is quantitative, and the parameters measured include coral reef dimension index (IDTK), coral cover percentage, life form dominance, number of life form species, number of coral reef fish species, coral reef depth, and distance from residential area. The results showed that the dimension index value of 0.09 as very low, coral cover was 25,93% (medium category), dominated by Acropora branching coral (ACB) life form with the highest cover of 12,65% among others, and 15 types of life forms were found, 29 species of fish both at depth 3m and 10m, the depth of coral reef reached to 14m, and distance of coral reefs was < 0,1km from residential areas. It was concluded that the assessment criteria for the capacity of coral reef ecosystem for Nusmapi island was 0,42 (moderate category), and it was a part of evaluation on small island vulnerability.

Keyword: coral reef ecosystem, assessing capacity, Nusmapi Island, Manokwari

Tree canopy cover for microclimate temperature reduction in Bandung city

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ABSTRACT

The high level of urban development causes urban green areas to decrease and the built-up area to increase, this causes most cities to face the urban heat island (UHI) problems so that UHI mitigation becomes important in urban planning and design. The presence of trees can reduce the effect of the UHI, some cities want to increase urban vegetation to minimize the effect of UHI. Through evapotranspiration and the benefits of shade, urban trees are an important tool for making cities more resilient to extreme heat. This research was conducted in the city of Bandung by calculating the value of the Land Surface Temperature (LST) and the Normalized Difference Vegetation Index (NDVI). LTS and NDVI values are obtained through the interpretation of satellite imagery, namely Landsat 8. The results of the calculation and determination of temperature distribution and vegetation density values in Bandung City are analyzed for trends and distribution of affected areas. Then it is analyzed how to increase green open space that has the capacity to absorb carbon, reduce local temperatures and biodiversity in urban landscapes. There is a decrease in vegetation density and soil surface temperature, which is evident in the increasingly warm development in the city of Bandung. There are 16 locations in the city of Bandung that have surface temperatures above 35^{o}C which must be handled immediately with several alternatives according to conditions in the field with the approach of multiplying vegetation. The concept of planting trees here is trying to be developed in urban areas, especially in urban forests. The definition of urban forest refers to the Food and Agriculture Organization (FAO) as "a network or system consisting of all forests, tree groups, and individual trees located in urban and suburban areas". The term covers everything from gardens with trees with biodiversity in mind. Some alternatives that can be applied are planting trees in areas with temperatures above 35^{o}C, planting above the buildings (green roofs) and green walls (green faced/living wall). This concept can be applied in urban areas to reduce the temperature of the microclimate and biodiversity, besides having ecological benefits, it can also have economic value. Based on the results of research, the presence of plants can reduce the temperature between 2-4^{o}C depending on the area of plants and the proportion of trees.

Keywords**:** Microclimate, tree canopy cover, urban

Identifikasi Cacing Tanah Di Taman Wisata Alam Gunung Meja Manokwari

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ABSTRAK

Taman Wisata Alam Gunung Meja merupakan laboratorium alam yang mengandung keanekaragaman hayati baik flora maupun fauna yang cukup besar dan sebagai jantung distributor hidrologis bagi kota Manokwari. Salah satu fauna yang terdapat di Taman Wisata Alam Gunung Meja adalah cacing tanah. Cacing tanah mempunyai banyak manfaat salah satunya sebagai indicator pelestarian hutan. Oleh sebab itu perluh dilakukan identifikasi cacing tanah di Taman Wisata Alam Gunung Meja Manokwari. Penelitian ini dilakukan menggunakan metode kuantitatif dengan teknik "*hand-sorting"* (penyortiran dengan tangan). Pengambilan sampel dilakukan pada tiga titk yaitu lokasi I Taman Wisata Alam Gunung Meja, lokasi II Taman Wisata Alam Gunung Meja bersebelahan dengan Kampung Idemek, lokasi III Taman Wisata Alam Gunung Meja bersebelahan dengan Kampung Ayambori. Cacing tanah yang didaptakan di Taman Wisata Alam Gunung Meja adalah terdiri dari empat jenis yaitu *Pleionogaster* .sp, *Metapheretima.* sp, *Planapheretima* .sp, dan *Pheretima.* sp. Masing-masing dari famili Megascolecidae.

Kata kunci : Identifikasi Cacing Tanah, Taman Wisata Alam Gunung Meja

Parallel Session 5

Theme :

Molecular Biology and Biotechnology

Time :11.00 – 12.00 AM (Jakarta Time/GMT+7)

Surface Sterilization to Isolate Endophytic Fungi from Mango's Mistletoe Leaves (*Dendrophtoe pentandra* (L.) Miq)

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ABSTRACT

Mango's mistletoe (Dendrophthoe pentandra L. Miq) is known as a plant parasite that is scientifically been proven potential as a medicinal herb. The content of compound metabolit secondary on plants not only produced by the plant but also by microorganisms that grow in the plant tissue. One of them is the endophytic fungi has the ability to induce the host to produce secondary metabolites. The ability of fungal endophyte to synthesize metabolites secondary compounds is an opportunity for large-scale production in a time shorter without causing damage to the ecological. Before doing the process of isolation of fungal endophyte of the tissue, needs to do research of the sterilization section surface in order to be free from various kinds of microorganisms that are not desired . This study aims to determine how the best surface sterilization method for isolating endophytic fungi from the leaves of the mango's mistletoe (Dendrophtoe pentandra (L.) Miq) before isolation process. Process sterilization mango's mistletoe leaf surface is done by using two sterilizing material that is NaOCl and HgCl with various concentrations of 5%, 10% and 20%, and the time of immersion for 10 minutes and the 14-day incubation period. Results sterilization mango's mistletoe leaf surface using the sterilizing material NaOCl at concentrations of 5% and 10% for 10 minutes is the best because it has time to grow mushrooms most rapidly, the percentage grows mushrooms and eskplan live highest, and the percentage of contamination lowest.

Keywords : surface sterilization, mango's mistletoe, endophytic fungi

In Silico Study of Chenodeoxycholic Acid 3-Sulfate from Eel (*Anguilla bicolor bicolor)* Against Human Angiotensin-Converting Enzyme 2 (ACE2) for COVID-19 Drug Development

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ABSTRACT

The Coronavirus Disease 19 (COVID-19) has become a worldwide pandemic which has caused of deaths caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Many countries are seeking drug candidates that can reduce the spread and severity of the disease. This study aims to asses and evaluate Chenodeoxycholic acid 3-sulfate in eel that can be used for drug development of natural product. The crystal structure of human ACE2 receptor and Chenodeoxycholic acid 3-sulfate compound was obtained from the database, molecular docking was conducted using Autodock Tools 1.5.7 software, and the interaction between human ACE2 receptor and compound was examined using Discovery Studio Software. Furthermore, the compound in eel were analyzed using Lipinksi's rule of 5 to determine drug-like properties. Based on the result binding of Chenodeoxycholic acid 3-sulfate against human ACE2 receptor that indicated by interaction of hydrogen bonding with free energy of -6,2 kcal/mol. Moreover, molecular dynamics and laboratory studies to this compound is needed for COVID-19 drug development.

Keywords: *COVID-19, ACE2, Molecular Docking, Anguilla bicolor bicolor*

The Pretreatment Effect of 8-Hydroxyquinoline and Cold Water on Chromosome of *Oryza sativa* var. Ciherang

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ABSTRACT

Oryza sativa var. Ciherang is the most widely grown rice in Indonesia. Information regarding the karyotype and method of observing the chromosomes of Ciherang rice has never been reported. One of the most important steps in chromosome preparation is pretreatment. The study was conducted to determine the effect of different immersion times (3, 6, and 24 hours) on pretreatment 8-Hydroxyquinoline and cold distilled water compared to control (without pretreatment) on the chromosomal structure and cell mitotic index data from the root tips of *Oryza sativa* L. var. Ciherang. Chromosomal samples were taken from the root tip (0.3-0.5 cm) before being put into pretreatment. The effect of pretreatment was evaluated by observing cell nuclei and chromosome structure, the mitotic index, and the chromosome length. The results showed that there was no different effect between control (without pretreatment), pretreatment with cold distilled water (3, 6, and 24 hours), and 8-Hydroxyquinoline (3, 6, and 24 hours) on mitotic index and chromosome length. The most visible chromosomal structure was observed in the control treatment. The mitotic index and the total percentage of prometaphase - metaphase were the highest at 74% 9.9%, respectively.

Keywords : Chromosome, Ciherang rice, Cold water, 8-Hydroxyquinoline, Mitotic index, Pretreatment.

Genetic Variation Enggano Hill Myna (*Gracula religiosa enganensis*) Based on Mitochondrial DNA 12S rRNA

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ABSTRACT

Enggano hill myna (*Gracula religiosa enganensis*) is a species of the family Sturnidae, distributed as an endemic species to the Enggano island. For this reason, genetic conservation is necessary to complete genetic information on the Enggano hill myna. The purpose of this research was to examine genetic variations in Enggano hill myna by observing genetic variations of the 12S rRNA gene mitochondrial DNA. Genome total of Enggano hill myna was isolated from its blood following the Dneasy® Blood and Tissue Kit Spin-Column Protocol. Amplification of the 12S rRNA gene using a pair of primers and PCR machine. A clear bands of PCR products were sent to PT. First Base in Malaysia for sequencing. The nucleotide sequence of the 12S rRNA gene was then analyzed using MEGA 10.0 software. The results showed that there were genetic variations in 17 individual Enggano hill myna with the length of the 12S rRNA gene sequences (571 bp). Conservative sites found that (C) is about 565 sites (98.94%), variable (V) is 6 sites (1.05%), parsimony (Pi) is 1 sites (0.17%), singleton is 5 sites (0.87%). The highest nucleotide base composition was adenine (A) (average 30.43%) and the lowest were cytosine (C) (average 20.28%), and adenine and thymine (50.74%) base pairs were higher than guanine and cytosine (49.18%). The intrapopulation genetic distance was 0.001 (0.1%), and interpopulation 0.005 (0.5 %), and intrasturnidae 0.064 (6.4%). These 12S rRNA sequence could be use for the conservation planning to this species.

Keywords **:** *Enggano hill myna, Enggano island, 12S rRNA, mitochondrial, genetic conservation.*

Parallel Session 5

Theme :

Microbiology and Health

Time :11.00 – 12.00 AM (Jakarta Time/GMT+7)

The Potential of Propolis as a Corrosion Inhibitor Caused by Bacteria in Various Types of Metals

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ABSTRACT

Microorganisms such as bacteria can cause corrosion in metals which is known as Biologically influenced corrosion (BIC). The ability of certain bacteria to oxidized ferro (Fe^{+2}) ions into ferri (Fe^{+3}) ions is what causes BIC in metals. To avoid BIC occurring in metals, the oxidation process by those bacteria has to be minimized. A way to achieve this goal is to apply anti-bacterial coatings to metals. Propolis has been known to be a potent anti-bacterial substance that has been used in many application, although it has not been used to prevent BIC in metals. This research aims to investigate the potential of propolis application in preventing BIC in various metals. The propolis extract with the concentration of 0% (control), 0.13%, 0.25%, 0.5%, 5%, and 10% is used in this study, which are applied to galvanized steel, steel, and stainless steel. The samples are then placed in open air for 4 weeks. The results of this study found that on average, the samples that was applied with 0.13% propolis contained the highest bacterial concentrations (546.89 cfu.ml^{-1})), with the lowest concentration found in metals that was applied with 10% propolis (210.67 cfu.ml^{-1}). The results of this study shows that propolis can be used in preventing corrosion in metals which are caused by BIC.

Keywords: Biologically influenced corrosion (BIC), corrosion, propolis, metals

The Effect of Extract of cell culture Rejasa (*Eleocarpus grandiflorus*) on Blood Glucose Level

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ABSTRACT

Diabetes mellitus is a metabolic disease characterized by the high blood glucose levels. The high prevalence of Diabetes Mellitus needed an innovation in prevention, treatment and control of case. Rejasa (Elaeocarpus grandiflorus) is one of plants has the potential to developed as an antidiabetic. The pretest and posttest control group design was conducted to 30 Rattus norvegicus Wistar strain. The rats induced alloxan monohydrate through intraperitoneal at dose of 125 mg/kg BW once day until the blood glucose above 200 mg/dL The rats were divided into 5 groups, that were negative control (K-), positive control (K+, given glibenclamide 0.072 mg/200 gBW), P1 (given Rejasa cell extract 1 mg/kgBW), P2 (given Rejasa cell extract 10 mg/kgBW), and P3 (given Rejasa cell extract 100 mg/kgBW). The rats were given E. glandiflorus and glibenclamide orally for 10 days. Measurement of blood glucose levels was carried out on day 0 and day 10, after 10 hr fasting. The mean of blood glucose levels on day 0 were 455.2 mg/dL (K), 422.8 mg/dL (K+), 469.8 mg/dL (P1), 355.5 mg/dL (P2) and 446 mg/dL (P3). The blood glucose levels on day 10 were 367.8 mg/dL (K-), 89.6 mg/dL (K+), 285.6 mg/dL (P1), 136.8 mg/dL (P2) and 104.8 (P3). Statistical analysis showed the difference between K- from P2($p=0.015$) and P3 ($p<0.001$). When compared with K+, only P3 showed no difference ($p=0.873$). These results suggested that extract cell of E. Glandiflorus have antidiabetic activity begin at the dose 1 mg/kgBW and optimum at the dose 100 mg/kgBW

Keyword: Blood glucose level, Cell extract, Elaeocarpus grandiflorus.

Mini Review: Developmental Detection Methods of *Klebsiella pneumoniae* For the Future Perspective

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ABSTRACT

Klebsiella pneumoniae is one of the pathogenic bacteria which known for the resistance to antibiotics that produce extended spectrum beta lactamases (ESBL) and causes nosocomial infections. Detection of these bacteria is one of the important things. The speed, accuracy, and efficiency of *Klebsiella pneumoniae* detection are the success keys for therapy of infections due to *Klebsiella pneumoniae*. The high number of cases of resistance to antibiotics and the length of the screening stage in cases of infection, especially in Indonesia, are one of the considerations for evaluate and choose a screening method. It is also the basis for reducing costs in patient care. Judging from the problems that developed, a search was carried out on the development of detection methods for *Klebsiella pneumoniae* to review the most effective and efficient methods of identification. This review method uses narrative reviewed from the target detection, limit and time, as well as the required costs based on references in related journals. Some of the methods discussed have developed from 2004 to 2021, including the disk test-based antibiotic spectrum evaluation method, polymerase chain reaction (PCR) and modified PCR techniques, such as real-time PCR, and multiplex PCR, Loop-Mediated Isothermal Amplification (LAMP), LC-MS/MS, Fluorescent In-Situ Hybridization (FISH), MALDI-TOF MS, and also immunoassay-based biosensors.

Keywords: *Klebsiella pneumoniae*, detection method, ESBL, nosocomial infection

Characteristics of *Pandanus tectorius* park. Bio-Briquette as Renewable Energy Source

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ABSTRACT

Biomass is a form of renewable energy, that very common in human society. Biomass widely use by people, mainly wood. However, any other lignocellulose material could be used as biomass energy sources, one of which is Pandanus tectorius Park. It is widely distribute around the world, especially in coastal area. The plant has not yet utilized to maximum potency, such as utilization as energy source. Aim of this research is to develop mixture for bio-briquette made from P. tectorius leaves and roots with the binding agent, that are Acacia mangium bark powder and tapioca starch. The research has been conducted by using P. tectorius biomass from Northern part of Manokwari, beside Acacia mangium bark was obtained from Sidey, Manokwari. The materials are ground using a hammer mill with a size of 60 mesh. The ratio of tapioca starch and Acacia bark powder is 1:1, based on pre-determined weight of required binding agent material. Ratio of lignocellulose material and binding agent used as briquette mixture is 80% : 20% and 70% : 30%. These mixtures stirred for by hand 5 minutes, until mixed evenly into briquette materials. These compound goes into mould, then hot pressed at 125°C for 2 hours in pre-heated press machine, in order to activate binding agent. After 2 hours of heating, apllied heat is removed, then pressurized briquettes is left for 6 hours of conditioning. Some properties of the briquette used SNI Standard of Charcoal Briquette to compare between charcoal briquette and biomass briquette. The percentage of moisture content of raw material for briquette, which is root powder, leaf powder, and A.mangium bark powder are about 4,05% to 7,22%. Ash content ranged at 2,80% to 3,37%. With volatile matter valued around 78,74% to 86,56%. The results show that moisture content of all of the mixture base on the standard. Except for mixture of root with 80% : 20% ratio, valued at 12,50%, which exceed maximum permitted value. All of the mixture failed to fullfill the required value of volatile matter in standard. In average, volatile matter value ranged at 80 – 85%. While, SNI allowed only maximum 15% of volatile matter. On the other hand, all mixture meet the requirement of ash content of maximum 8%. Where the value of all of the mixture, ranged between 2,14% and 3,87%. Average thickness swelling value of all briquette mixture during first 2 hours of immersion in water was the highest, ranged from 89,8% to 141,7%. In contrast, some mixture experienced shrinkage in thickness after 24 hours of immersion. Mixture of leaf with ratio 70:30 experience the highest shrinkage, valued at 5,19%. In conclusion, some properties of P. tectorius biomass briquettes, such as moisture content, ash content, could meet, even exceed the standard.

Keywords : Pandanus tectorius Park, biomass briquettes, *Acacia mangium* bark, renewable energy


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