ISSN: 1412-033X E-ISSN: 2085-4722

BIODIVERSITAS Journal of Biological Diversity Volume 24 - Number 2 - February 2023

Front cover: Troides helena cerberus f. eumagos (C. & R. Felder 1865) (Photo: SierraSunrise)

PRINTED IN INDONESIA





9177 1412

Published monthly



ISSN/E-ISSN: 1412-033X (printed edition), 2085-4722 (electronic)

EDITORIAL BOARD:

Abdel Fattah N.A. Rabou (Palestine), Agnieszka B. Najda (Poland), Ajar Nath Yadav (India), Ajay Kumar Gautam (India), Alan J. Lymbery (Australia), Annisa (Indonesia), Bambang H. Saharjo (Indonesia), Daiane H. Nunes (Brazil), Darlina Md. Naim (Malaysia), Ghulam Hassan Dar (India), Hassan Pourbabaei (Iran), Joko R. Witono (Indonesia), Kartika Dewi (Indonesia), Katsuhiko Kondo (Japan), Kusumadewi Sri Yulita (Indonesia), Livia Wanntorp (Sweden), M. Jayakara Bhandary (India), Mahdi Reyahi-Khoram (Iran), Mahendra K. Rai (India), Mahesh K. Adhikari (Nepal), Maria Panitsa (Greece), Mochamad A. Soendjoto (Indonesia), Mohamed M.M. Najim (Srilanka), Mohib Shah (Pakistan), Nurhasanah (Indonesia), Praptiwi (Indonesia), Rasool B. Tareen (Pakistan), Seyed Aliakbar Hedayati (Iran), Seyed Mehdi Talebi (Iran), Shahabuddin (Indonesia), Shahir Shamsir (Malaysia), Shri Kant Tripathi (India), Shubhi Avasthi (India), Subhash C. Santra (India), Sugeng Budiharta (Indonesia), Sugiyarto (Indonesia), Taufiq Purna Nugraha (Indonesia), Wawan Sujarwo (Indonesia), Yosep S. Mau (Indonesia)

EDITOR-IN-CHIEF: Sutarno

EDITORIAL MEMBERS:

English Editors: **Suranto** (surantouns@gmail.com); Technical Editor: **Solichatun** (solichatun_s@yahoo.com), **Artini Pangastuti** (pangastuti_tutut@yahoo.co.id); Distribution & Marketing: **Rita Rakhmawati** (oktia@yahoo.com); Webmaster: **Ari Pitoyo** (aripitoyo@yahoo.com)

MANAGING EDITORS:

Ahmad Dwi Setyawan (unsjournals@gmail.com)

PUBLISHER:

The Society for Indonesian Biodiversity

CO-PUBLISHER:

Department of Biology, Faculty of Mathematics and Natural Sciences, Sebelas Maret University, Surakarta

ADDRESS:

Jl. Ir. Sutami 36A Surakarta 57126. Tel. +62-271-7994097, Tel. & Fax.: +62-271-663375, email: editors@smujo.id

ONLINE:

biodiversitas.mipa.uns.ac.id; smujo.id/biodiv

Society for Indonesia Biodiversity



Sebelas Maret University Surakarta

Published by Smujo International for The Society for Indonesian Biodiversity and Sebelas Maret University Surakarta

GUIDANCE FOR AUTHORS

Aims and Scope *Biodiversitas, Journal of Biological Diversity* or *Biodiversitas* encourages submission of manuscripts dealing with all aspects of biodiversity, including plants, animals, and microbes at the level of the gene, species, and ecosystem. Ethnobiology papers are also considered.

Article types The journal seeks original full-length: (i) Research papers, (ii) Reviews, and (iii) Short communications. Original research manuscripts are limited to 8,000 words (including tables and figures) or proportional to articles in this publication number. Review articles are also limited to 8,000 words, while Short communications should be less than 2,500 words, except for pre-study.

Submission: The journal only accepts online submissions through the open journal system (https://smujo.id/biodiv/about/submissions) or email the editors at **unsiournals@gmail.com**. Submitted manuscripts should be the original works of the author(s). Please ensure that the manuscript is submitted the **Biodiversitas** template. which can he found using at (https://biodiversitas.mipa.uns.ac.id/D/guidance.htm). The manuscript must be accompanied by a cover letter containing the article title, the first name and last name of all the authors, and a paragraph describing the claimed novelty of the findings versus current knowledge. Please also provide a list of five potential reviewers in your cover letter. Submission of a manuscript implies the submitted work has not been published (except as part of a thesis or report, or abstract) and is not being considered for publication elsewhere. When a group writes a manuscript, all authors should read and approve the final version of the submitted manuscript and its revision; and agree on the submission of manuscripts for this journal. All authors should have made substantial contributions to the concept and design of the research, acquisition of the data and its analysis, drafting the manuscript, and correcting the revision. All authors must be responsible for the work's quality, accuracy, and ethics.

Ethics Author(s) must be obedient to the law and/or ethics in treating the object of research and pay attention to the legality of material sources and intellectual property rights.

Copyright If the manuscript is accepted for publication, the author(s) still hold the copyright and retain publishing rights without restrictions. Authors can reproduce articles as long as they are not used for commercial purposes. For the new invention, authors must manage its patent before publication.

Open Access The journal is committed to free-open access that does not charge readers or their institutions for access. Readers are entitled to read, download, copy, distribute, print, search, or link to the full texts of articles, as long as not for commercial purposes. The license type is CC-BY-NC-SA.

Acceptance Only articles written in US English are accepted for publication. Manuscripts will be reviewed by editors and invited reviewers (double-blind review) according to their disciplines. Authors will generally be notified of acceptance, rejection, or need for revision within 1 to 2 months of receipt. Manuscripts will be rejected if the content does not align with the journal scope, does not meet the standard quality, is in an inappropriate format, or contains complicated grammar, dishonesty (i.e., plagiarism, duplicate publications, fabrication of data, citations manipulation, etc.), or ignoring correspondence in three months. The primary criteria for publication are scientific quality and biological significance. **Uncorrected proofs** will be sent to the corresponding author by email as .doc or .docx files for checking and correcting typographical errors. The accepted proofs should be returned in 7 days to avoid publication delays. The accepted papers will be published online in chronological order at any time but printed at the end of each month.

A charge Authors are charged USD 320 (IDR 4,500,000). Additional charges may be billed for language improvement, USD 75-150 (IDR 1,000,000-2,000,000).

Reprints The sample journal reprint is only available by special request. Additional copies may be purchased when ordering by email and sending back the uncorrected proofs. Manuscript preparation Manuscript is typed on A4 (210x297 mm²) paper size, in a single column, single space, 10-point (10 pt) Times New Roman font. The margin text is 3 cm from the top, 2 cm from the bottom, and 1.8 cm from the left and right. Smaller lettering sizes can be applied in presenting tables and figures (9 pt). Word processing program or additional software can be used: however, it must be PC compatible, use the Biodiversitas template, and be Microsoft Word based (.doc or .rtf; not .docx). Scientific names of species (incl. subspecies, variety, etc.) should be written in italics, except in italicized sentences. Scientific names (genus, species, author) and cultivar or strain should be mentioned completely for the first time mentioning it in the body text, especially for taxonomic manuscripts. The Genus name can be shortened after the first mention, except where this may generate confusion. name of the author can be eliminated after the first mention. For example, Rhizopus oryzae L. UICC 524 can be written hereinafter as R. oryzae UICC 524. Using trivial names should be avoided. Biochemical and chemical nomenclature should follow the order of the IUPAC - IUB. For DNA sequences, it is better to use Courier New font. Standard chemical abbreviations can be applied for common and clear used, for example, completely written butilic hydroxyl toluene (BHT) to be BHT hereinafter. Metric measurements should use IS denominations, and other systems should use equivalent values with the denomination of IS mentioned first. A dot should not follow abbreviations like g, mg, mL, etc. Minus index (m⁻², L⁻¹, h⁻¹) suggested being used, except in things like "per-plant" or "perplot." Mathematical equations can be written down in one column with text; in that case, they can be written separately. **Numbers** one to ten are written in words, except if it relates to measurement, while values above them are written in number, except in early sentences. The fraction should be expressed in decimal. In the text, it should be used "%" rather than "percent." Avoid expressing ideas with complicated sentences and verbiage/phrasing, and use efficient and effective sentences.

The **article's title should be written in a** compact, clear, and informative sentence, preferably not more than 20 words. Author name(s) should be completely written. Name and institution address should also be completely written with street name and number (location), postal code, telephone number, facsimile number, and email address. Manuscripts written by a group, author for correspondence, and address are required. The first page of the manuscript is used for writing the above information.

The Abstract should not be more than 200 words. Include between five and eight Keywords, using scientific and local names (if any), research themes, and special methods used, and sorted from A to Z. All important abbreviations must be defined at their first mention. The running title is about five words. The Introduction is about 400-600 words, covering the background and aims of the research. Materials and Methods should emphasize the procedures and data analysis. Results and Discussion should be written as a series of connecting sentences; however, manuscripts with long discussions should be divided into subtitles. Thorough discussion represents the causal effect that mainly explains why and how the research results occurred and did not only re-express the mentioned results in sentences. A Conclusion should be given at the end of the Discussion. Finally, acknowledgments are expressed in brief; all sources of institutional, private, and corporate financial support for the work must be fully acknowledged, and any potential conflicts of interest must be noted.

Figures and Tables of three pages maximum should be clearly presented. Include a label below each figure and above each table (see example). Colored figures can only be accepted if the manuscript's information can be lost without those images; the chart is preferred to use black and white images. The author could consign any picture or photo for the front cover, although it does not print in the manuscript. All images property of others should be mentioned as sources. Although there is no **Appendix**, all data or data analysis is incorporated into Results and Discussions. For comprehensive/broad data, supplementary information can be provided on the website.

References In the text, give the author names followed by the year of publication and arrange from oldest to newest and from A to Z; in citing an article written by two authors, both of them should be mentioned; however, for three and more authors only the first author is mentioned followed by et al. For example, Saharjo and Nurhayati (2006) or (Boonkerd 2003a, b, c; Sugiyarto 2004; El-Bana and Nijs 2005; Balagadde et al. 2008; Webb et al. 2008). Extent citation should be avoided, as shown with the word "cit." Reference to unpublished data and personal communication should not appear in the list but should be cited in the text only (e.g., Rifai MA 2007, pers. com. (personal communication); Setyawan AD 2007, unpublished data). In the reference list, the references should be listed in alphabetical order. Names of journals should be abbreviated. Always use the standard abbreviations (www.issn.org/2-22661-LTWA-online.php). Please include DOI links for journal papers. The following examples are for guidance.

Journal:

Saharjo BH, Nurhayati AD. 2006. Domination and composition structure change at hemic peat natural regeneration following burning; a case study in Pelalawan, Riau Province. Biodiversitas 7: 154-158. DOI: 10.13057/biodiv/d070213

Book:

Rai MK, Carpinella C. 2006. Naturally Occurring Bioactive Compounds. Elsevier, Amsterdam.

Chapter in the book:

Webb CO, Cannon CH, Davies SJ. 2008. Ecological organization, biogeography, and the phylogenetic structure of rainforest tree communities. In: Carson W, Schnitzer S (eds.). Tropical Forest Community Ecology. Wiley-Blackwell, New York.

Abstract:

Assaeed AM. 2007. Seed production and dispersal of *Rhazya stricta*. 50th annual symposium of the International Association for Vegetation Science, Swansea, UK, 23-27 July 2007.

Proceeding:

Alikodra HS. 2000. Biodiversity for development of local autonomous government. In: Setyawan AD, Sutarno (eds.). Toward Mount Lawu National Park; Proceeding of National Seminary and Workshop on Biodiversity Conservation to Protect and Save Germplasm in Java Island. Universitas Sebelas Maret, Surakarta, 17-20 July 2000. [Indonesian]

Thesis, Dissertation:

Sugiyarto. 2004. Soil Macro-invertebrates Diversity and Inter-Cropping Plants Productivity in Agroforestry System based on Sengon. [Dissertation]. Universitas Brawijaya, Malang. [Indonesian]

Information from the internet: Balagadde FK, Song H, Ozaki J, Collins CH, Barnet M, Arnold FH, Quake SR, You L. 2008. A synthetic *Escherichia coli* predator-prey ecosystem. Mol Syst Biol 4:187. www.molecularsystembiology.com

ISSN: 1412-033X E-ISSN: 2085-4722



Short Communication: Tabanid and muscoid hematophagous flies as potential vectors of Surra Disease in Yogyakarta, Indonesia NILA QUDSIYATI, RADEN WISNU NURCAHYO, DWI PRIYOWIDODO, SOEDARMANTO INDARJULIANTO	675-680
Moss from Sumbawa District, Indonesia FLORENTINA INDAH WINDADRI	681-689
Characteristics of maleo bird spawning nests (<i>Macrocephalon maleo</i>) in Lake Towuti, South Sulawesi HADIJAH AZIS KARIM, NARDY NOERMAN NAJIB, SRIDA MITRA AYU, FIDEL	690-696
Changes in reef benthic communities in Sumba Timur, East Nusa Tenggara, Indonesia RIZKIE SATRIYA UTAMA, TRI ARYONO HADI, BAMBANG HERMANTO, GIYANTO, AGUS BUDIYANTO	697-707
Abundance and diversity of butterfly in the Lombok Forest Park, Indonesia MOHAMMAD LIWA ILHAMDI, AGIL AL IDRUS, DIDIK SANTOSO, GITO HADIPRAYITNO, MUHAMMAD SYAZALI, ISMAWAN HARIYADI	708-715
Phylogenetic of red snapper (Lutjanidae) in Yapen Island Waters, Papua, Indonesia RIDWAN SALA, ARADEA BUJANA KUSUMA, BAYU PRANATA,	716-723
Sex-linked Single Nucleotide Polymorphism (SNP) identification and molecular marker development of Salacca (Salacca zalacca (Gaertn.) Voss) RIRY PRIHATINI, DINY DINARTI, AGUS SUTANTO, SUDARSONO,	724-732
Analysis of phytochemical constituents and antioxidant activity from the fractions of Luvunga sarmentosa root extract using LCMS/MS SYARPIN, SILVANI PERMATASARI, DWI ARI PUJIANTO	733-740
Determination of Begomovirus on chili plants (<i>Capsicum</i> sp.) in Buton and Muna Islands, Southeast Sulawesi, Indonesia CATUR JOKO WIDODO, MUHAMMAD TAUFIK, ANDI KHAERUNI, RAHAYU MALLARANGENG	741-751
Molecular identification of thermophilic bacteria with antimicrobial activity isolated from hot springs in North Sumatra, Indonesia CHRISMIS NOVALINDA GINTING, FINNA PISKA, HARMILENI, EDY FACHRIAL	752-758
Short Communication: Characteristics of the endangered Javan banteng	759-766
(Bos javanicus) spermatozoa VINCENTIA TRISNA YOELINDA, RADEN IIS ARIFIANTINI, DEDY DURYADI SOLIHIN, MUHAMMAD AGIL, DEDI RAHMAT SETIADI, YOHANA TRI HASTUTI, JANSEN MANANSANG, DONDIN SAJUTHI	
Ethnobotany of medicinal plants in the Dayak Linoh Tribe in Sintang District, Indonesia HENDRIKUS JULUNG, MARKUS IYUS SUPIANDI, BENEDIKTUS EGE, SITI ZUBAIDAH, SUSRIYATI MAHANAL	767-775
Fishing methods and fishing season of the tropical lobster fisheries of southern Java,	776-783
Indonesia ARIEF SETYANTO, SUMARNO, DGR. WIADNYA, C. PRAYOGO, Z. KUSUMA, R.J. WEST, M. TSAMENYI	
Flowering and fruiting phenology of <i>Anaxagorea Iuzonensis</i> A. Gray (Annonaceae) DEWI AYU LESTARI, LINDA WIGE NINGRUM, F. MAFTUKHAKH HILMYA NADA, NARESVARA NIRCELA PRADIPTA, DIAN RAKHMAWATI HARSONO4	784-792

The influence of inoculum types on the chemical characteristics and β-glucan content of tempe Gembus SAMSUL RIZAL, MARIA ERNA KUSTYAWATI, MURHADI, MUHAMAMAD AMIN	793-798
Forest structures and carbon stocks of community forests with different forest management in Maha Sarakham Province, Thailand WANNACHAI WANNASINGHA, BHUVADOL GOMONTEAN, YANNAWUT UTTARUK	799-809
Diversity of aquatic plants in the Rote Dead Sea area, East Nusa Tenggara, Indonesia, based on <i>rbcL</i> marker DESY WULANSARI LONTHOR, MIFTAHUDIN, KAYAT, ATRIYON JULZARIKA, LUKI SUBEHI, ELISA ISWANDONO, ALFRED O. M DIMA7, AAN DIANTO, FAJAR SETIAWAN, MEDIA FITRI ISMA NUGRAHA8,	810-818
Agronomic performance and selection of green super rice doubled haploid lines from anther culture SITI NURHIDAYAH, BAMBANG SAPTA PURWOKO, ISWARI SARASWATI DEWI, WILLY BAYUARDI SUWARNO, ISKANDAR LUBIS	819-826
Mapping coral cover using Sentinel-2A in Karimunjawa, Indonesia ERIDHANI DHARMA SATYA, AGUS SABDONO, DIAH PERMATA WIJAYANTI, MUHAMMAD HELMI, RIKHA WIDIARATIH	827-836
State of human tiger conflict around Gunung Leuser National Park in Langkat Landscape, North Sumatra, Indonesia PINDI PATANA, HADI S. ALIKODRA, HERMAN MAWENGKANG, R. HAMDANI HARAHAP4	837-846
Short Communication: Biological control of <i>Meloidogyne javanica</i> by <i>Pasteuria</i> <i>penetrans</i> and <i>Trichoderma harzianum</i> on tomato plants HAMOOD M. SALEH, AHMED FAWZI SHAFEEQ, MAHER A. KHAIRI	847-851
Seasonal litter production patterns in three tropical forests in Sulawesi, Indonesia: Implications for managing secondary forests PUTU SUPADMA PUTRA, AMRAN ACHMAD, TOSHIHIRO YAMADA, PUTU OKA NGAKAN	852-860
Spatial distribution of <i>Vespa affinis</i> based on land use and population density in Bojonegoro District, East Java Province, Indonesia LAILY AGUSTINA RAHMAWATI, DEWI HIDAYATI, DIAN SAPTARINI, MRABAWANI INSAN RENDRA, BELLA LUTFIANI AL ZAKINA	861-868
Determinants of symptom variation of <i>Pepper yellow leaf curl Indonesia virus</i> in bell pepper and its spread by <i>Bemisia tabaci</i> DEWA GEDE WIRYANGGA SELANGGA, LISTIHANI LISTIHANI, I GEDE RAI MAYA TEMAJA, GUSTI NGURAH ALIT SUSANTA WIRYA, I PUTU SUDIARTA, KETUT AYU YULIADHI	869-877
Low-density polyethylene sheet biodegradation by <i>Tenebrio molitor</i> and <i>Zophobas</i> <i>morio</i> larvae and metagenome studies on their gut bacteria BERNADETTA OCTAVIA, ANNA RAKHMAWATI, SUHARTINI, LUTHFIA DWI RACHMANI, TITAN DWIKAMA PUTRA	878-886
The effects of flowering trap crops on diversity and longevity of pollinator insect visitation on chili plants TIEN AMINATUN, BUDIWATI, YUNITA FERA RAHMAWATI, DEVITA NURIKA ARI WIDIYANTI, LUFI ATHIFAH FAHDAH	887-893
Morphological characteristic of dengue vectors <i>Aedes aegypti</i> and <i>Ae.albopictus</i> (Family: Culicidae) using advanced light and scanning electron microscope SUPRIYONO, SUSI SOVIANA, MUHAMMAD FALIKHUL MUSYAFFA, DIMAS NOVIATO, UPIK KESUMAWATI HADI	894-900
Serratia marcescens strain NPKC3_2_21 as endophytic phosphate solubilizing bacteria and entomopathogen: promising combination approach as rice biofertilizer and biopesticide G. SUTIO, A. NUR AFIFAH, R. MAHARANI, M. BASRI	901-909

Characterization, and screening of urease activity of ureolytic bacteria from landfills soil in Banda Aceh, Indonesia LENNI FITRI, TEUKU BUDI AULIA, AMIR FAUZI, GALIH AHMAD KAMIL	910-915
Amplicon metabarcoding analysis of bio-extract and its potential on plant growth promotion THANAKORN SAENGSANGA, WASSANA PHANURAK	916-922
Predicting the current potential geographical distribution of <i>Baccaurea</i> (<i>B. lanceolata</i> and <i>B. motleyana</i>) in South Kalimantan, Indonesia GUNAWAN, KHOERUL ANWAR, ABDUL GAFUR, RAUDATUL HILALIYAH, AZMIL AQILATUL WARO, NUR HIKMAH, SAKINAH, MUHAMMAD ERWANSYAH, DIAN SUSILAWATI, RATNA DWI LESTARI, DINDA TRIANA	930-939
Phenotypic detection strategies of multidrug-resistant <i>Staphylococcus aureus</i> isolated from cat nasal swab in Madiun city, Indonesia SAUMI KIREY MILLANNIA, ASWIN RAFIF KHAIRULLAH, MUSTOFA HELMI EFFENDI, SUZANITA UTAMA, SHENDY CANADYA KURNIAWAN, DANIAH ASHRI AFNANI, OTTO SAHAT MARTUA SILAEN, SAFIRA RAMADHANI, SANCAKA CHASYER RAMANDINIANTO, YUSAC KRISTANTO KHODA WARUWU, AGUS WIDODO9, GIOVANNI DWI SYAHNI PUTRA, MUHAMMAD THORIQ IHZA FARIZQI, KATTY HENDRIANA PRISCILIA RIWU	940-946
Ethnobotany of wild and semi-wild edible plants of the Madurese Tribe in Sampang and Pamekasan Districts, Indonesia THOBIB HASAN AL YAMINI, NINA RATNA DJUITA, TATIK CHIKMAWATI, YOHANES PURWANTO	947-957
Inhibitor α-glucosidase activity of <i>Pediococcus acidilactici</i> DNH16 isolated from Dali ni Horbo, a traditional food from North Sumatra, Indonesia EDY FACHRIAL, SARI ANGGRAINI, HARMILENI, SARYONO, TITANIA T. NUGROHO4	958-965
Morphometric characterization and zoometric indices of female Bali cattle reared in Lombok Tengah District, West Nusa Tenggara, Indonesia ADI TIYA WARMAN, GALIH TRIE FADHILAH, ALEK IBRAHIM, BAYU ANDRI ATMOKO, ENDANG BALIARTI, PANJONO,	966-974
Short Communication: Notes on a new distribution record of the Critically Endangered Sunda Pangolin (<i>Manis javanica</i>) in Sabah, Malaysian Borneo JEPHTE SOMPUD, NURHIDAYAH SAHAR, CARMEN ADROS, EVELYN RICHARD, CYNTHIA BOON SOMPUD	975-981
Population survey and red list assessment of <i>Kandelia candel</i> (L.) Druce, a critically endangered mangrove species in the Philippines Pastor L. Malabrigo Jr., Gerald T. Eduarte, Damasa M. Macandog, LERMA SJ. MALDIA, NELSON M. PAMPOLINA, RACHEL C. SOTTO, INOCENCIO E. BUOT JR.	982-989
Visualization of paddy in Panel 65 of the Karmawibhangga section of Borobudur Temple ARYO ANGGOROJATI, RAHMANU WIDAYAT, SETYO BUDI	990-1003
Short Communication: Avian sanctuary within the city: the case of Timaco Hill, Cotabato City, Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), Mindanao Island, Philippines PETER JAN D. DE VERA, JOHN PAUL C. CATIPAY, MARIAN DARA T. TAGOON, ELSA MAY DELIMA-BARON, BENITO ANTHONY PINGGOY5	1004-1009
Abundance and diversity of plant parasitic nematodes associated with vegetable cultivation on various types of organic fertilizers SIWI INDARTI, TARYONO, CHANDRA WAHYU PURNOMO, AYU SUCI WULANDARI, RINA MAHARANI	1010-1016

Stakeholder and social networks analysis of conservation partnership in Bantimurung Bulusaraung National Park, South Sulawesi, Indonesia ADRAYANTI SABAR, RISMA ILLA MAULANY, YUSRAN, ANDY KURNIAWAN, RIO AKBAR RAHMATULLAH, MUH. ARIEF SYAM, MUHAMMAD AKBAR SYAWAL, ARDIAN HALIS, MUHAMMAD TEGAR RAFIADI	1017-1024
The effect of different honey concentrations on the ultrastructure profile of spermatozoa in Dewa Mahseer (<i>Neolissochilus soro</i>) A. ABINAWANTO, SUCI LESTARI, ANOM BOWOLAKSONO, ASTARI DWIRANTI, RETNO LESTARI, RUDHY GUSTIANO, ANANG HARI KRISTANTO4	1025-1031
The heterosis, heterobeltiosis, and the yielding ability of hybrids of three parental crossings of soybean (<i>Glycine max</i>)] DIANA SOFIA HANAFIAH, LUTHFI AZIZ MAHMUD SIREGAR, KHAIRUNNISA LUBIS, HARYATI, FADILLAH RAHMADANA	1032-1038
Nutritional values of Avicennia marina leaves and its application as fodder for Kacang goat (Capra aegagrus) MOHAMMAD BASYUNI, MUHAMMAD RISKY RIZALDI, RIZKA AMELIA, YUNTHA BIMANTARA, NURDIN SULISTIYONO, BEJO SLAMET, SHOFIYAH SABILAH AL MUSTANIROH	1039-1048
Application of remote sensing and GIS for mapping changes in land area and mangrove density in the Kuri Caddi Mangrove tourism, South Sulawesi Province, Indonesia DWI ROSALINA, HAWATI, KATARINA HESTY ROMBE, AGUS SURACHMAT, AWALUDDIN, MUCHTAR AMILUDDIN, ANI LEILANI, ASRIYANTI	1049-1056
Recorded and predicted butterflies in the Padang Bindu Karst, South Sumatra, Indonesia AGMAL QODRI, ENCILIA, YULIZAH, DEDEN GIRMANSYAH, SUNARDI, WAHYUDI SANTOSO, MEGAWATI, RINA RACHMATIYAH, FATIMAH, DARMAWAN, SARINO, DJUNIJANTI PEGGIE	1057-1082
Diversity of dinoflagellate cysts isolated from estuarine sediments of the Bengawan Solo and Brantas rivers, Indonesia SAPTO ANDRIYONO, NITA RUKMINASARI, ANDI ALIAH HIDAYANI, INDRA JUNAIDI ZAKARIA, MD. JOBAIDUL ALAM, HYUN-WOO KIM	1083-1091
Phylogeny and taxonomic status evaluation of Dark-sided Narrow-mouthed Frog, Microhyla heymonsi, (Anura: Microhylidae) from Sumatra, Indonesia RURY EPRILURAHMAN, VESTIDHIA Y. ATMAJA, MISBAHUL MUNIR, ROSICHON UBAIDILLAH, TUTY ARISURYANTI, ERIC N. SMITH, AMIR HAMIDY	1092-1103
Inventory of terrestrial vertebrate wildlife species in a private-owned forest patch in Tagum City, Mindanao, Philippines LIEF ERIKSON D. GAMALO, SHIELA MAE E. CABRERA, NOEL CARL L. DE LOS REYES, ALEYLA E. DE CADIZ, JOSELITO B. CHAVEZ JR., AARON FROILAN M. RAGANAS, MA. NIÑA REGINA M. QUIBOD	1104-1116
Next Generation Sequencing (NGS) for Cyanobacterial study in Agung and Sunter Barat Lakes, North Jakarta, Indonesia DIAN HENDRAYANTI, NINING BETAWATI PRIHANTINI, FITRIA NINGSIH, FADHLURAHMAN MAULANA	1117-1124
Diversity and distribution pattern of bioactive compound potential seaweed in Menganti Beach, Central Java, Indonesia DWI SUNU WIDYARTINI, HEXA APRILIANA HIDAYAH, ACHMAD ILALQISNY INSAN	1125-1135
Antagonist and plant growth promoting potential of indigenous bacteria isolated from oil palm empty fruit bunches DERMIYATI, RADIX SUHARJO, MARELI TELAUMBANUA, RULLY YOSITA, ANGGI WINANDA SARI, ANIS PUJI ANDAYANI	1136-1142

Incidence of <i>Escherichia coli</i> producing Extended-spectrum beta-lactamase in wastewater of dairy farms in East Java, Indonesia FIDI NUR AINI EKA PUJI DAMEANTI, SHEILA MARTY YANESTRIA, AGUS WIDODO, MUSTOFA HELMI EFFENDI, HANI PLUMERIASTUTI, WIWIEK TYASNINGSIH, RAHAYU SUTRISNO, M. ALI AKRAMSYAH	1143-1150
Antibacterial activity of sponge-associated bacteria from Torosiaje marine area, Gorontalo, Indonesia YULIANA RETNOWATI, ABUBAKAR SIDIK KATILI	1151-1156
Immunomodulatory effects of probiotics isolated from traditional fermented foods and beverages of Sumatra (Indonesia) and synbiotics in mice NUR INDAH PERMATASARI HARAHAP, ERMAN MUNIR, SALOMO HUTAHAEAN	1157-1162
Ethnomedicine exploration of medicinal plants in Dayak Bakumpai and Ngaju Tribes, Central Kalimantan, Indonesia NANIK LESTARININGSIH, MUHAMAD JALIL, AYATUSA'ADAH, RIDHA NIRMALASARI	1163-1174
Genotypes assessment for developing varieties on multi-canopy rice cultivation system MIFTAKHUL BAKHRIR ROZAQ KHAMID, AHMAD JUNAEDI, HENI PURNAMAWATI, HAJRIAL ASWIDINNOOR, LILIK BUDI PRASETYO4	1175-1185
Short Communication: The flowering process of <i>Prunus cerasoides</i> in Bali Botanic Gardens, Indonesia	1186-1191
GEBBY AGNESSYA ESA OKTAVIA, RAJIF IRYADI, TRI WARSENO, HERY PURNOBASUKI	
Characterization and virulence of two indigenous entomopathogenic fungal isolates from decayed oil palm empty fruit bunches against <i>Spodoptera litura</i> (Lepidoptera: Noctuidae) ABDUL SAHID, PINTAKA KUSUMANINGTYAS	1192-1199
Amylase enzyme production with variation of carbon sources and molecular identification of thermophilic fungus <i>Aspergillus</i> sp. LBKURCC304 from Bukik Gadang, West Sumatra, Indonesia SARYONO, SILVERA DEVI, TITANIA T NUGROHO, WIDYLIA FITRI FADHILA, LORENA LORENITA, FIDA SELFIANA NASUTION, NABELLA SURAYA	1200-1205
Analysis of land cover change due to mining and its potential economic loss: A case study in the Bukit Soeharto Forest Park, East Kalimantan, Indonesia SUNARTO, MARLON I. AIPASSA, RUJEHAN, ALI SUHARDIMAN, ROCHADI KRISTININGRUM, YOSEP RUSLIM, WULAN IR SARI	1206-1214
Exploration of indigenous copper and dye-resistant bacteria isolated from Citarum River, West Java, Indonesia WAHYU IRAWATI, DWI NINGSIH SUSILOWATI, INDAH SOFIANA, VALENTINE LINDARTO, REINHARD PINONTOAN, TRIWIBOWO YUWONO	1215-1223
Short communication: Macrofungi assemblage in Rawa Bento Forest, Kerinci Seblat National Park, Indonesia IRDA SAYUTI , ZULFARINA, ZATRI RAHAYU	1224-1230
Ecological index and economic potential of mollusks (Gastropods and Bivalves) in Ayah Mangrove Forest, Kebumen District, Indonesia MINI AMBARWATI KUSUMA DEWI, DEVI MAYANG AURINA, AQRA DANIAL FATURRAHMAN, LAYYINATUSSYIFA A'YUNI FATIKHA, FAYZA RACHMALIA, FADIA AULIANISSA AINAYA, ASIH KINANTHI, CAHYA MAULIDTA ROHMAN, FARIZ PRADHANA ADIL FADZILAH, DESMA ASTY PRAMUDITA, MUHAMMAD FADHIL RAMADHAN, EDWI MAHAJOENO, GILANG DWI NUGROHO, PUGUH SUJARTA, MUH. SULAIMAN DADIONO, CHEE KONG YAP, KHAIRUL ADHA BIN A. RAHIM, AHMAD DWI SETYAWAN	1231-1241
Butterfly species in Bogani Nani Wartabone National Park, North Sulawesi, Indonesia RONI KONERI, MEIS JACINTA NANGOY, PIENCE VERALYN MAABUAT, WAKHID	1242-1251

Effect of environmental temperature and relative humidity towards postural behavior and activity patterns of female <i>Pongo pygmaeus</i> at Bukit Merah Orang Utan Island, Perak, Malaysia	1252-1263
NORAMIRA NOZMI, SABAPATHY DHARMALINGAM, NUR NADIAH MD YUSOF, FARIDA ZURAINA MOHD YUSOF	
Characteristics of vegetation in the <i>gumuk</i> ecosystem in Jember District, East Java, Indonesia	1264-1271
WIWIN MAISYAROH, LUCHMAN HAKIM, SUDARTO, JATI BATORO	
Exploration of phosphate solubilizing bacteria from mangrove soil of Lamongan, East Java, Indonesia	1272-1278
FATIMAH, NUR AULA, SYARIFAH SALSABILA, ZAKIA ASRIFAH RAMLY, SHERINA YULIA ROSE, TINI SURTININGSIH, TRI NURHARIYATI	
Isolation and characterization of endophytic bacteria from some halophytes in saline desert regions of Uzbekistan	1279-1288
BEGALI ALIKULOV, DOSTON GULBOEV, DILNOZA MAXAMMADIEVA, ZARRINA TILLAEVA, SADOKAT OLIMJONOVA, ZAFAR ISMAILOV	
Comparative study on Pb absorption ability of five shade plants species in Industrial Estate and Urban Forests of Bekasi, Indonesia DAYANA ZULFADILLAH INTAN, RATNA YUNIATI, RETNO LESTARI	1289-1295
Habitat suitability model for <i>Banteng (Bos javanicus</i> d'Alton, 1823) in Meru Betiri National Park, Indonesia	1296-1302
ARIF MOHAMMAD SIDDIQ, WACHJU SUBCHAN, HAIKAL IDRIS MAULAHILA, NUR KHOLIQ	
The false alarm of experimentally companion plants to the cabbage pests with their ecological effects	1303-1312
AGUNG SIH KURNIANTO, LUHUR SEPTIADI, NANANG TRI HARYADI, WILDAN MUHLISON, IRWANTO SUCIPTO, NILASARI DEWI, AHMAD ILHAM TANZIL, AYU LESTARI, ROSE NOVITA SARI HANDOKO	
α-amylase and α-glucosidase inhibitory effects of four piper species and GC-MS analysis of <i>Piper crocatum</i> YUSTINA SRI HARTINI, DEWI SETYANINGSIH	1313-1319
Antimicrobial activity of <i>Kaempferia galanga</i> against plant pathogen on rice WORO SRI SUHARTI, ETIK WUKIR TINI, DINA ISTIQOMAH	1320-1326