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

# BIODIVERSITAS Journal of Biological Diversity Volume 2 1 - Number 1 - January 2 0 2 0



Front cover: Athene cunicularia (Molina, 1782) (PHOTO: BERNARD DUPONT)

**Published monthly PRINTED IN INDONESIA** 

ISSN: 1412-033X

E-ISSN: 2085-4722







#### ISSN/E-ISSN:

1412-033X (printed edition), 2085-4722 (electronic)

# **EDITORIAL BOARD:**

Abdel Fattah N.A. Rabou (Palestine), Agnieszka B. Najda (Poland), Ajay Kumar Gautam (India), Alan J. Lymbery (Australia),
Annisa (Indonesia), Bambang H. Saharjo (Indonesia), Daiane H. Nunes (Brazil), Darlina Md. Naim (Malaysia),
Kartika Dewi (Indonesia), Ghulam Hassan Dar (India), Hassan Pourbabaei (Iran), Joko R. Witono (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), Mohib Shah (Pakistan), Mohamed M.M. Najim (Srilanka), 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), Subhash C. Santra (India), Sugeng Budiharta (Indonesia), Sugiyarto (Indonesia),
Taufiq Purna Nugraha (Indonesia), Yosep S. Mau (Indonesia)

# EDITOR-IN-CHIEF: Sutarno

#### **EDITORIAL MEMBERS:**

English Editors: **Graham Eagleton** (grahameagleton@gmail.com), **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

# **GUIDANCE FOR AUTHORS**

**Aims and Scope** *Biodiversitas, Journal of Biological Diversity* or abbreviated as *Biodiversitas* encourages submission of manuscripts dealing with all biodiversity aspects of plants, animals and microbes at the level of the gene, species, and ecosystem as well as ethnobiology.

**Article types** The journal seeks original full-length research papers, reviews, and short communication. Manuscript of original research should be written in no more than 8,000 words (including tables and picture), or proportional with articles in this publication number. Review articles will be accommodated, while, short communication should be written at least 2,000 words, except for pre-study.

Submission The journal only accepts online submission, through open journal system (https://smujo.id/biodiv/about/submissions) or email to the editors at unsjournals@gmail.com. Submitted manuscripts should be the original works of the author(s). The manuscript must be accompanied by a cover letter containing the article title, the first name and last name of all the authors, a paragraph describing the claimed novelty of the findings versus current knowledge. Submission of a manuscript implies that the submitted work has not been published before (except as part of a thesis or report, or abstract); and is not being considered for publication elsewhere. When a manuscript written by a group, all authors should read and approve the final version of the submitted manuscript and its revision; and agree 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 of the manuscript and correcting of the revision. All authors must be responsible for the quality, accuracy, and ethics of the work.

**Ethics** Author(s) must 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 and when the manuscript is accepted for publication, the author(s) still hold the copyright and retain publishing rights without restrictions. Authors or others are allowed to multiply article as long as not for commercial purposes. For the new invention, authors are suggested to manage its patent before published.

**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 The only articles written in English (U.S. 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. The manuscript is rejected if the content does not in line with the journal scope, does not meet the standard quality, inappropriate format, 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 biodiversity significance. Uncorrected proofs will be sent to the corresponding author by email as .doc or .docx files for checking and correcting of typographical errors. To avoid delay in publication, corrected proofs should be returned in 7 days. The accepted papers will be published online in a chronological order at any time, but printed in the early of each month (12 times).

A charge Starting on January 1, 2019, publishing costs waiver is granted to authors of graduate students from **Least Developed Countries**, who first publish the manuscript in this journal. However, other authors are charged USD 250 (IDR 3,500,000). Additional charges may be billed for language editing, 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 sending back the uncorrected proofs by email.

Manuscript preparation Manuscript is typed on A4 (210x297 mm<sup>2</sup>) 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 size can be applied in presenting table and figure (9 pt). Word processing program or additional software can be used, however, it must be PC compatible and Microsoft Word based (.doc or .rtf; not .docx). Scientific names of species (incl. subspecies, variety, etc.) should be written in italic, except for italic sentence. Scientific name (genera, species, author), and cultivar or strain should be mentioned completely for the first time mentioning it in the body text, especially for taxonomic manuscripts. Name of genera can be shortened after first mentioning, except generating confusion. Name of the author can be eliminated after first mentioning. For example, Rhizopus oryzae L. UICC 524, hereinafter can be written as R. oryzae UICC 524. Using trivial name should be avoided, otherwise generating confusion. Biochemical and chemical nomenclature should follow the order of the IUPAC - IUB. For DNA sequence, it is better used Courier New font. Symbols of standard chemical and abbreviation of chemistry name can be applied for common and clear used, for example, completely written butilic hydroxyl toluene (BHT) to be BHT hereinafter. Metric measurement use IS denomination, usage other system should follow the value of equivalent with the denomination of IS first mentioning. Abbreviations set of, like g, mg, mL, etc. do not follow by dot. Minus index (m<sup>-2</sup>, L<sup>-1</sup>, h<sup>-1</sup>) suggested to be used, except in things like "perplant" or "per-plot". Equation of mathematics does not always can be written down in one column with text, in that case can be written separately. **Number** one to ten are expressed with words, except if it relates to measurement, while values above them written in number, except in early sentence. The fraction should be expressed in decimal. In the text, it should be used "%" rather than "percent". Avoid expressing ideas with complicated sentence and verbiage, and used efficient and effective sentence.

**Title** of the article should be written in compact, clear, and informative sentence, preferably not more than 20 words. Name of author(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. Manuscript written by a group, author for correspondence along with address is required. First page of the manuscript is used for writing above information.

Abstract should not be more than 200 words. Keywords is about five words, covering scientific and local name (if any), research theme, and special methods which used; and sorted from A to Z. All important abbreviations must be defined at their first mention. Running title is about five words. Introduction is about 400-600 words, covering the background and aims of the research. Materials and Methods should emphasize on the procedures and data analysis. Results and Discussion should be written as a series of connecting sentences, however, for manuscript with long discussion should be divided into subtitles. Thorough discussion represents the causal effect mainly explains for why and how the results of the research were taken place, and do not only re-express the mentioned results in the form of sentences. Concluding sentence should be given at the end of the discussion. Acknowledgments are expressed in a brief; all sources of institutional, private and corporate financial support for the work must be fully acknowledged, and any potential conflicts of interest are noted.

Figures and Tables of maximum of three pages should be clearly presented. Title of a picture is written down below the picture, while title of a table is written above the table. Colored figures can only be accepted if the information in the manuscript can lose without those images; chart is preferred to use black and white images. 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 source. There is no appendix, all data or data analysis are incorporated into Results and Discussions. For broad data, it can be displayed on the website as a supplement.

References Author-year citations are required. In the text give the authors name 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 as shown with word "cit" should be avoided. 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 an alphabetical order (better, if only 20 for research papers). Names of journals should be abbreviated. Always use the standard abbreviation of a journal's name according to the ISSN List of Title Word Abbreviations (www.issn.org/2-22661-LTWA-online.php). 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.

#### Book:

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

#### Chapter in 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*. 50<sup>th</sup> 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 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.molecularsystemsbiology.com

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

# BIODIVERSITAS Journal of Biological Diversity Volume 2 1-Number 1-January 2020

Changes in insect biodiversity on rehabilitation sites in the southern coastal areas of Java Island, Indonesia	1-7
BUDIADI, MUSYAFA, SURYO HARDIWINOTO, ATUS SYAHBUDIN	
The impacts of bark harvesting on a population of <i>Encephalartos transvenosus</i> (Limpopo cycad), in Limpopo Province, South Africa SAMUEL O. BAMIGBOYE, M. PETER TSHISIKHAWE	8-13
Yield of different rice cultivars at two levels of soil salinity under seawater intrusion in West Java, Indonesia NUNING A. SUBEKTI, HASIL SEMBIRING, ERYTHRINA, DEDI NUGRAHA, BHAKTI PRIATMOJO, NAFISAH	14-20
Activities and molecular characterization of petroleum hydrocarbons degrading rhizobacteria from mangrove plants ( <i>Rhizophora</i> sp.) in Kulon Progo, Yogyakarta, Indonesia VIVEKANANDA VINSENSIUS BENGET, ENDAH RETNANINGRUM	21-27
Induced resistance by Bacillus subtilis on oil palm seedling infected by Ganoderma	28-33
boninense	
FIFI PUSPITA, HADIWIYONO, SUSILO HAMBEG POROMORTO, DEWI INDRIYANI ROSLIM	
Species richness and diversity of aquatic insects inhabiting rice fields in Bogor, West Java, Indonesia WAKHID, AUNU RAUF, MAJARIANA KRISANTI, I MADE SUMERTAJAYA, NINA MARYANA	34-42
Phylogenetic analysis of transparent gobies in three Sumatran lakes, inferred from mitochondrial Cytochrome Oxidase I (COI) gene DEWI IMELDA ROESMA, DJONG HON TJONG, DYTA RABBANI AIDIL	43-48
Productivity of three varieties of local upland rice on swidden agriculture field in Setulang village, North Kalimantan, Indonesia OKTIANI PERIDA MERANG, ABUBAKAR M. LAHJIE, SYAHRIR YUSUF, YOSEP RUSLIM	49-56
Impact of agricultural crop type and hunting on bird communities of two villages in Bandung, West Java, Indonesia LUKMANUL HAKIM, OEKAN S. ABDOELLAH, PARIKESIT, SUSANTI WITHANINGSIH	57-66
Local food diversification of foxtail millet cultivars (Setaria italica) in West Sulawesi, Indonesia: a case study of diversity and local culture BUDI SETIADI DARYONO, RAMLAH, MARCIA BUNGA PABENDON	67-73
Biomass and carbon distribution on <i>Imperata cylindrica</i> grasslands SYAHRINUDIN, MANFRED DENICH, MATHIAS BECKER, WAHJUNI HARTATI, PAUL L.G. VLEK	74-79
Variation of axillary growth as respond of <i>Morus</i> spp. micropropagation using various concentration of Indonesian local solid substance YASINTA RATNA ESTI WULANDARI, LAURENSIA DANIS ANGGRADITA	80-85
Antibiotics resistant <i>Escherichia coli</i> isolated from aquatic ecosystems in Palembang, South Sumatra, Indonesia MARIESKA VERAWATY, NITA APRIANI, LELY RASTI TARIGAN, ENDAH TRI APRIAN, WEMONA CHARISSA LAURENTA, MUHARNI	86-97

Changes in paddy field management in Sindang Hamlet, Rancakalong Village, Sumedang District, West Java, Indonesia RAHMI AULIA HIDAYAT, RUHYAT PARTASASMITA, JOHAN ISKANDAR, BUDI GUNAWAN	98-105
Review: The invasion of <i>Acacia nilotica</i> in Baluran National Park, Indonesia, and potential future control strategies SHAFIA ZAHRA, RICHARD W. HOFSTETTER, KRISTEN M. WARING, CATHERINE GEHRING	104-116
Ethnobotany of sugar palm ( <i>Arenga pinnata</i> ) in the Sasak Community, Kekait Village, West Nusa Tenggara, Indonesia ANGGIT HARYOSO, ERVIZAL A.M. ZUHUD, AGUS HIKMAT, ARZYANA SUNKAR, DUDUNG DARUSMAN	117-128
First report of naturally occurring recombinant non-coding DNA satellite associated with <i>Tomato yellow leaf curl Kanchanaburi virus</i> on eggplant in Indonesia ARGAWI KANDITO, SEDYO HARTONO, SRI SULANDARI, SUSAMTO SOMOWIYARJO, YEPI ARBETA WIDYASARI	129-136
Diet and behavior of the burrowing owl ( <i>Athene cunicularia</i> ) in Atiquipa, an ecosystem of Lomas in the south of Peru CÉSAR R. LUQUE-FERNÁNDEZ	137-143
Xylan-degrading ability of thermophilic <i>Actinobacteria</i> isolated from soil in a geothermal area MAZYTHA KINANTI RACHMANIA, FITRIA NINGSIH, PUTRI PRATIWI SETYANINGSIH, WINDA AYU SYAFITRI, DHIAN CHITRA AYU FITRIA SARI, SHUHEI YABE, AKIRA YOKOTA, ARIYANTI OETARI, WELLYZAR SJAMSURIDZAL	144-154
Plant soil seed bank analysis in wildfire former area of Mount Talang, West Sumatra, Indonesia INDRA DWIPA, CHIKA SUMBARI, ASWALDI ANWAR	155-160
Chemical composition and antibacterial activities of <i>Capparis spinosa</i> essential oils from Algeria HALIMA BENACHOUR, MESSAOUD RAMDANI, TAKIA LOGRADA, PIERRE CHALARD, GILLES FIGUEREDO	161-169
Selection of drought-tolerant local rice cultivars from East Nusa Tenggara, Indonesia during vegetative stage YUSTINA CAROLINA FEBRIANTI SALSINHA, DIDIK INDRADEWA, YEKTI ASIH PURWESTRI, DIAH RACHMAWATI	170-178
The ability of indigenous <i>Bacillus</i> spp. consortia to control the anthracnose disease ( <i>Colletrotricum capsici</i> ) and increase the growth of chili plants YULMIRA YANTI, HASMIANDY HAMID, REFLIN, WARNITA, TRIMURTI HABAZAR	179-186
Physiological, biochemical activities of cherelle wilt on three cocoa clones ( <i>Theobroma cacao</i> ) under two levels of soil fertilities ENDANG SRI DEWI HS, PRAPTO YUDONO, EKA TARWACA SUSILA PUTRA, BENITO HERU PURWANTO	187-194
Characterization, identification, and analysis of bioactive compound of endophytic bacteria from <i>Hoya multiflora</i> Blume DEWINTA NUR ALVIONITA, SRI RAHAYU, NISA RACHMANIA MUBARIK	195-202
Population structure, vegetation composition and economic potentials of <i>Parkia timoriana</i> in Meru Betiri National Park, East Java, Indonesia ANIK NUR HIDAYATI, ERVIZAL A.M. ZUHUD, NURI ANDARWULAN	203-210
Evaluation of enzymatic activity and identification of potent proteolytic and chitinolytic bacteria isolated from crab shell waste MOH DLIYAUDDIN, TRI ARDYATI, SUHARJONO	211-218
Genetic diversity of sago palm ( <i>Metroxylon sagu</i> ) accessions based on plastid cpDNA <i>mat</i> K gene as DNA barcoding BARAHIMA ABBAS, IHWAN TJOLLI, MUNARTI	219-225

Short Communication: Identification of Leptin gene in crossbred beef cattle LAKSA ERSA ANUGRATAMA, TETY HARTATIK	226-230
First ectomycorrhizal syntheses between Astraeus sirindhorniae and Dipterocarpus alatus (Dipterocarpaceae), pure culture characteristics, and molecular detection NUTTIKA SUWANNASAI, PREEYAPORN DOKMAI, AKIYOSHI YAMADA, ROY WATLING, CHERDCHAI PHOSRI	231-238
Phenological behavior of Atlas cedar forest to snow and precipitation variability in Boutaleb and Babors Mountains, Algeria KHALED MISSAOUI, RACHID GHARZOULI, YAMNA DJELLOULI, FRANÇOIS MESSNER	239-245
Short Communication: Leaf architectural characteristics of <i>Cinnamomum cebuense</i> Kosterm. (Lauraceae) distributed in different geographical locations, taxonomic identification and conservation concerns  EDGARDO P. LILLO, INOCENCIO E. BUOT JR., ARCHIEBALD B. MALAKI, STEVE MICHAEL T. ALCAZAR, RAAMAH ROSALES, JOHN LOU B. DIAZ, BERNARDO R. REDOBLADO, GLORY GRACE G. GEALON,	246-251
Classification of betel leaves ( <i>Piper betle</i> ) from 5 ethnics in eastern Indonesia based on phytochemicals fingerprint analysis DIMAS ANDRIANTO, HUSNAWATI, SUCI HERMITA, SARI HARYANTI	252-257
Antlions (Neuroptera, Myrmeleontidae) along the North Caspian shore; distributional analysis and zoogeographical division of Caspian coast of Russia VICTOR A. KRIVOKHATSKY, ILHAMA G. KERIMOVA, VASILYI V. ANIKIN, DMITRYI M. ASTAKHOV, †, ANNA S. ASTAKHOVA5, ELENA V. ILYINA6, IGOR S. PLOTNIKOV, JULIA V. SAMARTSEVA	258-281
The existence of coprophilous macrofungi in Banyumas, Central Java, Indonesia ARIS MUMPUNI, NURAENI EKOWATI, DANIEL JOKO WAHYONO	282-289
The vertical distribution of epiphytic orchids on <i>Schima wallichii</i> trees in a montane forest in West Java, Indonesia INDRA FARDHANI, TAKESHI TORIMARU, HIROMITSU KISANUKI	290-298
Evaluation of SSR and important agronomical characters of promising mutant lines of soybean	299-310
ASADI, NURWITA DEWI, KRISTIANTO NUGROHO, RERENSTRADIKA TIZAR TERRYANA, MASTUR, PUJI LESTARI	
Short Communication: Single nucleotide polymorphism in C-type lysozyme gene and its correlation with <i>Aeromonas hydrophila</i> resistance in African catfish <i>Clarias gariepinus</i>	311-317
HASAN NASRULLAH, YANTI INNEKE NABABAN, IKA SAFITRI, DWI HANI YANTI, SRI NURYATI, MUHAMMAD ZAIRIN JUNIOR, ALIMUDDIN ALIMUDDIN	
Diversity and potency of indigenous yeast from some palm juices for bioethanol production	318-325
TRIANIK WIDYANINGRUM, SUHARJONO SUHARJONO, TRI ARDYATI, AULANNI'AM AULANNI'AM	
The potential impact of climate change on the distribution pattern of <i>Eusideroxylon zwageri</i> (Bornean Ironwood) in Kalimantan, Indonesia ANGGA YUDAPUTRA, IZU FIJRIDIYANTO, WENDELL P. CROPPER, JR.	326-333
Butterfly as bioindicator for development of conservation areas in Bukit Reban Kambing, Bukit Belading and Bukit Tukau, Johor, Malaysia NORRADIHAH ISMAIL, AQILAH AWG ABDUL RAHMAN, MARYATI MOHAMED, MOHD FADZELLY ABU BAKAR, LILI TOKIMAN	334-344
Abundance, prey, and activity period of dholes ( <i>Cuon alpinus</i> ) in Khao Yai National Park, Thailand	345-354
NORASET KHOEWSREE, KHWANRUTAI CHARASPET, RONGLARP SUKMASUANG, NUCHARIN SONGSASEN, MANANYA PLA-ARD, JIDAPA THONGBANTUM, WARAPORN KONGCHALOEM, KHANCHIT SRINOPAWAN	

Cranefly fauna (Diptera: Limoniidae, Pediciidae, Tipulidae) of the Republic of Mordovia, Russia	355-369
VALENTIN E. PILIPENKO, ALEXANDER B. RUCHIN, GENNADY B. SEMISHIN	
Detection of Enterocytozoon hepatopenaei (EHP) DNA in the polychaetes from shrimp ponds suffering white feces syndrome outbreaks DESRINA, SLAMET B. PRAYITNO, ALFABETIAN HARJUNO CONDRO HADITOMO, RUSTHESA LATRITIANI, SARJITO SARJITO	369-374
Diversity of medicinal plants utilized by To Manui ethnic of Central Sulawesi, Indonesia NUNING RAHMAWATI, FANIE INDRIAN MUSTOFA, SARI HARYANTI	375-392
Fish species, traders, and trade in traditional market: Case study in Pasar Baru, Balikpapan City, East Kalimantan, Indonesia RAHMAN LATIF ALFIAN, JOHAN ISKANDAR, BUDIAWATI SUPANGKAT ISKANDAR, SUROSO, DICKY P. ERMANDARA5, DEDE MULYANTO, RUHYAT PARTASASMITA	393-406
The effect of culture media on the number and bioactivity of marine invertebrates associated fungi AGUS TRIANTO, OCKY KARNA RADJASA, MADA TRIANDALA SIBERO, AGUS SABDONO, DWI HARYANTI, WA ODE MARDHIYYAH ZILULLAH, ANNISA RORO SYANINDYTA, MUHAMMAD SYAIFUDIEN BAHRY, PRASTYO ABI WIDIANANTO, MUHAMAD HELMI, HARYO DWITO ARMONO6, SUPRIADI, YASUHIRO IGARASHI	407-412
Diversity and distribution of ferns in forest over limestone in Cebu Island Key Biodiversity Areas (KBAs), Philippines EDGARDO P. LILLO, ARCHIEBALD B. MALAKI, STEVE MICHAEL T. ALCAZAR, RAAMAH ROSALES, BERNARDO R. REDOBLADO, ERWIN PANTINOPLE, RITCHE U. NUEVO, ROBERTO C. CUTILLAR, ARNALDO ALMIRANTE, INOCENCIO E. BUOT JR,	413-421
Growth improvement of Falcataria moluccana inoculated with MycoSilvi grown in post-	422-427