

NUSANTARA BIOSCIENCE

ISEA JOURNAL OF BIOLOGICAL SCIENCES

| Nusantara Biosci | vol. 12 | no. 2 | pp. 87-174 | November 2020 |
| ISSN 2087-3948 | E-ISSN 2087-3956 |

Calliphora vicina photo by USGS Bee Inventory and Monitoring Laboratory





**Society for
Indonesian Biodiversity**



**Sebelas Maret University
Surakarta**

**Published semiannually
PRINTED IN INDONESIA**

ISSN 2087-3948

E-ISSN 2087-3956



9 772087 394273



9 772087 395270

EDITORIAL BOARD:

Editor-in-Chief, **Sugiyarto**, Sebelas Maret University Surakarta, Indonesia (sugiyarto_ys@yahoo.com)

Editorial Advisory Boards:

Agricultural Sciences, **Muhammad Sarjan**, Mataram University, Mataram, Indonesia (janjan62@gmail.com)
 Agricultural Sciences, **Dragan Znidarcic**, University of Ljubljana, Slovenia, EU (dragan.znidarcic@bf.uni-lj.si)
 Animal Sciences, **Freddy Pattiselanno**, State University of Papua, Manokwari, Indonesia (pattiselannofreddy@yahoo.com)
 Biochemistry and Pharmacology, **Mahendra K. Rai**, SGB Amravati University, Amravati, India (pmkrai@hotmail.com)
 Biochemistry, **Vinod K. Sangwan**, Eternal University, Baru Sahib (Sirmour), India (sangwan.vinod@yahoo.com)
 Bioinformatics and Computational Biology, **Guojun Li**, University of Georgia, Athens, USA (guojunsdu@gmail.com)
 Biomedical Sciences, **Afiono AgungPrasetyo**, Sebelas Maret University, Surakarta, Indonesia (afieagp@yahoo.com)
 Biomedical Sciences, **Hui Yang**, Guangzhou Medical University, Guangzhou, China (yanghui030454@gmail.com)
 Bioremediation, **Surajit Das**, National Institute of Technology, Rourkela, India (surajit@nitrkl.ac.in)
 Ecology and Environmental Science, **Cecep Kusmana**, Bogor Agricultural University, Bogor, Indonesia (ckusmana@ymail.com)
 Ethnobiology, **Luchman Hakim**, University of Brawijaya, Malang, Indonesia (lufehakim@yahoo.com)
 Forestry, **Rajesh Kumar**, Rain Forest Research Institute, Assam, India (rajeshicfre@gmail.com)
 Genetics and Evolutionary Biology, **Sutarno**, Sebelas Maret University, Surakarta, Indonesia (nnsutarno@yahoo.com)
 Human Sciences, **Yi Li**, Texas A&M University-Kingsville, Kingsville, USA (yi.li@tamuk.edu)
 Medicinal and Aromatic Plants, **Khalid A.K. Ahmed**, National Research Centre, Cairo, Egypt (ahmed490@gmail.com)
 Micology, **Rajesh K. Gupta**, Biologics Quality & Regulatory Consultants, LLC, North Potomac, USA (guptarus@yahoo.com)
 Molecular Biology, **Darlina Md. Naim**, Universiti Sains Malaysia, Minden, Malaysia (darlinamd@usm.my)
 Microbiology, **Kateryna Kon**, Kharkiv National Medical University, Kharkiv, Ukraine (katerynakon@gmail.com)
 Microbiology, **Román Ramírez**, Universidad Pedagógica y Tecnológica de Colombia, Tunja, Colombia (royer94@gmail.com)
 Molecular Communication and Nanonetworks, **Baris Atakan**, Izmir Institute of Technology, İzmir, Türkiye (barisatakan@iyte.edu.tr)
 Parasitology (Immunoparasitology), **Hossein Nahrevanian**, Pasteur Institute of Iran, Tehran, Iran (mobicghn@gmail.com)
 Plant Breeding and Biotechnology, **Danial Kahrizi**, Razi University, Kermanshah, Iran (dkahrizi@yahoo.com)
 Plant Physiology, **Qingmei Guan**, University of Maryland, College Park, Maryland, USA (qguan@umd.edu)
 Plant Physiology, **Xiuyun Zhao**, Huazhong Agricultural University, Wuhan, China (xiuyunzh@yahoo.com.cn)
 Plant Science, **Muhammad M. Aslam**, Kohat University of Science & Technology, Kohat, Pakistan (mudasar_kust@yahoo.com)
 Plant Science, **Pudji Widodo**, General Soedirman University, Purwokerto, Indonesia (pudjiwi@yahoo.com)
 Toxicology, **Shaukat Ali**, University of Azad Jammu and Kashmir, Muzaffarabad, Pakistan (shaukatali134@yahoo.com)

Management Boards:

Managing Editor, **Ahmad D. Setyawan**, Sebelas Maret University, Surakarta, Indonesia (unsjournals@gmail.com)
 Associated Editor (English Editor), **Muchdar Davis**, NAIST Indonesia Office, Indonesia (muchdardavis@gmail.com)
 Associated Editor (English Editor), **Suranto**, Sebelas Maret University, Surakarta, Indonesia (surantoak@yahoo.com)
 Technical Editor, **Ari Pitoyo**, Sebelas Maret University, Surakarta, Indonesia (aripitoyo@yahoo.co.id)
 Business Manager, **A. Widiastuti**, Development Agency for Seed Quality Testing of Food and Horticulture Crops, Depok, Indonesia (nusbiosci@gmail.com)

PUBLISHER: Society for Indonesian Biodiversity

CO-PUBLISHER: School of Graduates, Sebelas Maret University, Surakarta

FIRST PUBLISHED: 2009

ADDRESS:

Bioscience Program, School of Graduates, Sebelas Maret University
 Jl. Ir. Sutami 36A Surakarta 57126, Indonesia. Tel. & Fax.: +62-271-663375, email: nusbiosci@gmail.com

ONLINE:

biosains.mipa.uns.ac.id/nusbioscience
 smujo.id/nb



Society for Indonesia
 Biodiversity



Sebelas Maret
 University Surakarta

Guidance for Authors

Aims and Scope *Nusantara Bioscience* (Nusantara Biosci) encourages submission of manuscripts dealing with all aspects of biological sciences that emphasize issues germane to biological and nature conservation, including agriculture and forestry, animal science, biochemistry and pharmacology, biomedical science, ecology and environmental science, ethnobiology, genetics and evolutionary biology, marine and freshwater biology, microbiology, molecular biology, physiology, and plant science.

Article types The journal seeks original full-length research papers, short research papers (short communication), reviews, monograph and letters to the editor about material previously published; especially for the research conducted in the Islands of the Southeast Asian region or Nusantara, but also from around the world.

Submission The journal only accepts online submission, through open journal system (<https://smujo.id/nb/about/submissions>). The manuscript must be accompanied with 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, and a list of five suggested international reviewers (title, name, postage address, email address). Reviewers must not be subject to a conflict of interest involving the author(s) or manuscript(s). The editor is not obligated to use any reviewer suggested by the author(s).

Acceptance The acceptance of a paper implies that it has been reviewed and recommended by at least two reviewers, one of whom is usually from the Editorial Advisory Board. Authors will generally be notified of acceptance, rejection, or need for revision within 1 to 2 months of receipt. Manuscript is rejected, if the content is not in line with the journal scope, does not meet the ethical standards (i.e. false authorship, plagiarism, duplicate publication, fabrication of data and citation manipulation), does not meet the required quality, written in inappropriate format, has incorrect grammar, or ignores correspondence in three months. The primary criteria for publication are scientific quality and biological or natural conservation significance. The accepted papers will be published in a chronological order. This journal is published in May and November. However, online publication was done previously.

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. Author(s) needs to adhere to the ethical standards as determined by the Committee on Publication Ethics (COPE).

Copyright Submission of a manuscript implies that the submitted work has not been published before (except as part of a thesis or report, or abstract); that it is not under consideration for publication elsewhere; that its publication has been approved by all co-authors. If and when the manuscript is accepted for publication, the author(s) agree to transfer copyright of the accepted manuscript to *Nusantara Bioscience*. Authors shall no longer be allowed to publish manuscript without permission. 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. Users are entitled to read, download, copy, distribute, print, search, or link to the full texts of articles, as long as not for commercial purposes.

Preparing the Manuscript

Please make sure before submitting that: The manuscript is proofread several times by the author(s); and is criticized by some colleagues. The language is revised by a professional science editor or a native English speaker. The structure of the manuscript follows the guidelines (sections, references, quality of the figures, etc). Abstract provides a clear view of the content of the paper and attracts potential citers. The number of cited references complies with the limits set by *Nusantara Biosci* (around 20 for research papers). All manuscripts must be written in clear and grammatically correct English (U.S.).

Microsoft Word files are required for all manuscripts. The manuscript should be as short as possible, and no longer than 8000 words (except for review), with the abstract 200 words. For research paper, the manuscript should be arranged in the following sections and appear in order: Title, Abstract, Key words (arranged from A to Z), Running title (heading), Introduction, Materials and Methods, Results and Discussion, Conclusion, Acknowledgements, and References. Scientific language, nomenclature and standard international units should be used. The title page should include: title of the article, full name(s), institution(s) and address(es) of

author(s); the corresponding authors detailed postage and e-mail addresses, and phone and fax numbers.

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, personal communication; Setyawan AD 2007, unpublished data). In the reference list, the references should be listed in an alphabetical order. 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.

The usage of "et al." in long author lists will also be accepted:

Smith J, Jones M Jr, Houghton L et al. 1999. Future of health insurance. *N Engl J Med* 965: 325-329

Article by DOI:

Slifka MK, Whitton JL. 2000. Clinical implications of dysregulated cytokine production. *J Mol Med*. Doi:10.1007/s001090000086

Book:

Rai MK, Carpinella C. 2006. Naturally occurring bioactive compounds. Elsevier, Amsterdam.

Book Chapter:

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*. The 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*. Sebelas Maret University, 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]. Brawijaya University, Malang. [Indonesian]

Online document:

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

Tables should be numbered consecutively and accompanied by a title at the top. **Illustrations** Do not use figures that duplicate matter in tables. Figures can be supplied in digital format, or photographs and drawings, which can be ready for reproduction. Label each figure with figure number consecutively.

Uncorrected proofs will be sent to the corresponding author by e-mail as .doc or .rtf files for checking and correcting of typographical errors. To avoid delay in publication, proofs should be returned in 7 days.

A charge There is free of charge for members of Society for Indonesian Biodiversity (SIB) and/or non-Indonesian author(s). But, the cost of each manuscript is USD 250 for Indonesian non-SIB members (valid for manuscript submissions starting on January 1, 2016).

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 e-mail.

NOTIFICATION: All communications are strongly recommended to be undertaken through email.

- Analysis of the effect of methadone and temperature on the development rate of *Calliphora vicina* (Diptera: Calliphoridae): A forensically important fly 87-91
 DAWOUD KESHAVARZI, YAVAR RASSI, KOUROSH AZIZI, MOHAMMAD ALI OSHAGHI,
 SAYENA RAFIZADEH, ALI MOHAMMAD ALIMOHAMMADI, MARZIEA SHAHRIARI NAMADI,
 SEYEDEH ZAHRA PARKHIDEH
- Short Communication: Lugol's iodine test on *Rafflesia patma*– *Tetrastigma leucostaphylum* intersection tissue for preliminary starch visualization 91-96
 ADHITYO WICAKSONO, SOFI MURSIDAWATI
- Melissopalynological analysis of honey produced by two species of stingless bees in Lombok Island, Indonesia 97-108
 LALU ZULKAN JAYADI, RATNA SUSANDARINI
- Short Communication: Stimulatory effect of *Curcuma mangga* on immune response against *Staphylococcus aureus* 109-113
 YUANDANI, SONY EKA NUGRAHA, LIA LAILA, SETIA DAME SILABAN, FADHILAH RAMADHANI
- The application of NPK fertilizer boosts the nutrient uptake status and biomass production of *Vernonia amygdalina* 114-119
 DWI SUSANTO, RUDIANTO AMIRTA
- The use of betel (*Piper betle*) leaves for maintaining the health of women and children at various ethnic groups in Indonesia 120-126
 LUCIE WIDOWATI, LESTARI HANDAYANI, ROHMAT MUJAHID
- Growth and yield response of shallot (*Allium ascalonicum* L. var. Tuktuk) from different source materials applied with liquid biofertilizers 127-133
 JHON HARDY PURBA, PUTU SRI WAHYUNI, ZULKARNAEN, NANANG SASMITA,
 I GUSTI AYU DIAH YUNITI, NI PUTU PANDAWANI
- Organic fertilizer applications improve the growth of vegetable crops and chemical properties in the tailings deposition area at Timika, Papua, Indonesia 134-142
 SARTJI TABERIMA, SARASWATI PRABAWARDANI, ROBERTH SARWOM, GRAHAM LYONS
- Human myiasis survey in Ilam Province, Southwest of Iran 143-147
 MORTEZA AKBARI, JAVAD RAFINEJAD, AHMAD-ALI HANAFI-BOJD, ALI ASHRAF AIVAZI,
 AKBAR BIGLARIAN, SORAYA SHEIKHI, ZAHRA SHAVALI, KAMRAN AKBARZADEH
- Larval development of nypa palm worm *Namalycastis rhodochorde* (Polychaeta: Nereididae) 148-153
 JUNARDI, TJANDRA ANGGRAENI, AHMAD RIDWAN, EDY YOWONO
- Biological responses of Sri Lankan rice (*Oryza sativa* L.) varieties to rhythmic sound patterns (music and religious chants) 154-161
 D.S.P. MUNASINGHE, S.R. WEERAKOON, S. SOMARATNE
- Golden apple snail (*Pomacea canaliculata*) as an alternative protein source in Pasupati catfish (*Pangasius sp.*) fish feed 162-167
 MEILISHA PUTRI PERTIWI, DINA DYAH SAPUTRI

Short communication: Effects of *Canarium indicum* oil in enhancing brain-derived neurotrophic factor in rats

168-174

HAMIDAH RAHMAN, KUSNANDAR ANGGADIREJA, TUTUS GUSDINAR,
JOHNNER P. SITOMPUL, TURSINO

THIS PAGE INTENTIONALLY LEFT BLANK