

Jurnal Natural

www.jurnal.usk.ac.id/natural

ISSN 1411-8513
eISSN 2541-4062

VOLUME 25 NUMBER 1 FEBRUARY 2025



CHIEF EDITOR
Suhartono

ASSOCIATED EDITORS
Marwan
Hadi Susanto
Anton Abdulbasah Kamil
Syed Azhar Syed Sulaiman
Rinaldi Idroes
Waltram S Ravelombola
Rosli Saad
Sajid Yousuf Zai

ASSOCIATED EDITORS
Elin Yusibani
Febriani
Rahmi
Mahdhivan Syafwan
Muhammad Syukri
Tedy Kurniawan Bakri
Vera Halfiani
Bodhi Dharma





Jurnal Natural (JN) is a premier, multidisciplinary, open-access journal dedicated to the rapid publication of high-quality, peer-reviewed research in the fields of mathematics, biological sciences, physics, chemistry, pharmacy, statistics, and informatics. Published by the Faculty of Mathematics and Natural Sciences at Universitas Syiah Kuala, Indonesia, J. Natural is committed to fostering the global exchange of scientific knowledge and ideas.

J. Natural collaborate with some academic associations in Indonesia including IndoMS (Mathematics), HKI (Chemistry), PHI (Physics) and HAGI (Geophysics). The journal publishes three issues per year (February, June, and October) and welcomes submissions from researchers, scholars, and professionals worldwide. J. Natural focuses on a wide range of scientific scopes, including, but not limited to Mathematics (Algebra, analysis, geometry, topology, and applied mathematics); Biological Sciences (Cell biology, genetics, microbiology, molecular biology, biochemistry, biophysics, ecology, and evolution); Physics (Classical and quantum mechanics, geophysics, statistical mechanics, electromagnetism, optics, and condensed matter physics);

Chemistry (Organic, inorganic, physical, analytical, and theoretical chemistry); Pharmacy (Pharmaceutical chemistry, pharmacology, pharmacognosy, pharmaceuticals, and clinical pharmacy); Statistics (Mathematical statistics, biostatistics, statistical theory, and statistical methods), and Informatics (Computer science, artificial intelligence, data science, machine learning, and cybersecurity). J. Natural is an entirely open-access journal, with a transparent and efficient blind review process that ensures the highest standards of quality and integrity. The journal applies a publishing charge for authors, ensuring the sustainability of the publication and the accessibility of the content for readers worldwide.

Jurnal Natural (J. Natural) is nationally accredited by the Ministry of Research and Technology/National Research and Innovation Agency, Indonesia ([Number 148/M/KPT/2020, Sinta Category 2](#)) until 2024.

Peer reviewers in this issue:

Dewi Yunita, Agricultural Product Technology Department, Faculty of Agriculture, Universitas Syiah Kuala, Indonesia
Firman M. Nur, Research center for Biosystematics and Evolution, National Research and Innovation Agency (BRIN), Indonesia
Khairan, Department of Chemistry, FMIPA, Universitas Syiah Kuala, Indonesia
M. Iqbal Hidayat, Research Center for Nanotechnology System, National Research and Innovation Agency (BRIN), Indonesia
Mardiah Hayati, Department of Agrotechnology Faculty of Agriculture, Universitas Syiah Kuala, Indonesia
Meutia Zahara, Department of Biology, Faculty of Islamic Universitas Muhammadiyah Aceh, Indonesia
Muhammad Iqhrammullah, Graduate School of Mathematics and Applied Sciences, Universitas Syiah Kuala, Indonesia
Muhammad Nasir, Department of Biology, FMIPA Universitas Syiah Kuala, Indonesia
Muliadi Ramli, Department of Chemistry, FMIPA, Universitas Syiah Kuala, Indonesia
Saira Bano, Department of Microbiology, Jinnah University for Women Karachi, Pakistan
Tristia Rinanda, Faculty of Medicine, Universitas Syiah Kuala, Indonesia

Editorial Team

Chief Editor	Suhartono	
Associated Editors	Marwan	Elin Yusibani
	Hadi Susanto	Febriani
	Anton Abdulbasah Kamil	Rahmi
	Syed Azhar Syed Sulaiman	Mahdhivan Syafwan
	Rinaldi Idroes	Muhammad Syukri
	Peter Woodfield	Tedy Kurniawan Bakri
	Waltram S Ravelombola	Vera Halfiani
	Rosli Saad	Bodhi Dharma
	Sajid Yousuf Zai	

Publisher:

FMIPA Universitas Syiah Kuala, Indonesia

Mailing Address:

Block A 2nd Floor FMIPA Universitas Syiah Kuala
Jl. Tgk. Syech Abdurrauf No. 3, Banda Aceh, 23111, Indonesia
Phone (0651) 7410248 | Fax. (0651) 7551819 | Email: jurnal.natural@fmipa.usk.ac.id



TABLE OF CONTENTS

The measurement of microbial air contamination index in the pulmonary ward, intensive care unit and pediatric intensive care unit at dr. Zainoel Abidin hospital, Aceh, Indonesia TRISTIA RINANDA, SAKDIAH SAKDIAH, RIMA RISTIANTI, VONNA YUNIRA, FEBY VANIA, ANDIKA CITRA BUANA	1-6
The validation of urea determination in saliva using optical urea biosensor with p-dimethylaminobenzaldehyde (DMAB) reagent TEUKU ALDIANSYAH, EKA SAFITRI, BINAWATI GINTING, NAZARUDDIN NAZARUDDIN, KHAIRI SUHUD, SITTI SALEHA, NURHAYATI NURHAYATI, SALSABILLA LATANSA NAZARUDDIN, MUHAMMAD RIDHO AFIFI, NURHAIDA NURHAIDA	7-17
The effectiveness of naphthaleneacetic acid and kinetin on the development of plantlet book cuttings of Chrysanthemum ornamental plants RAHMAD SETIA BUDI, MUJI PARAMUJI, DENNY AKBAR TANJUNG	18-24
The role of <i>Pediococcus pentosaceus</i> IL13 in the fermentation of tuna waste, <i>Euthynnus affinis</i> SITI WAHYUNI, NUR WIDYA RINI, JOKO SAEFAN	25-32
Assessing the water quality in the Timbalun river watershed, Padang City, West Sumatra, Indonesia RUSLI HAR, DENNY AKBAR TANJUNG, NOVESAR JAMARUN	33-40
Bacterial patterns and antibiotic susceptibility among pus culture in dr. Zainoel Abidin General Hospital, Banda Aceh MEUTIA KEUMALAHAYATI, ZINATUL HAYATI, IMELDA MAELANI, AZWAR RIDWAN, CUT VIKA RAHMAWATI, DESI MULIANA, FARAH DHITA ANISSA PUTRI, WILDA MAHDANI	41-47
Optimization of growth rate and feeding efficiency of four economically important in the bioflocs system AGUSSYARIF HANAFIE, AKHMAD MURJANI, EL REDHA	48-63



AUTHOR GUIDELINES

Manuscripts must be original. By publishing only original reports, Jurnal Natural is committed to deterring plagiarism, including self-plagiarism. Note that all manuscripts may be screened during the submission or peer-review process.

Text. Manuscripts must be prepared using accepted word-processing software. Times new roman 10th, double coloums.

Tables. Tables may be prepared in Microsoft Word or Microsoft Excel and must be embedded in the word-processing file. Authors are asked to follow these guidelines:(1) Number tables consecutively using Arabic numerals. (2) Include a descriptive heading that explains the table. (3) Give footnotes a letter designation, and cite in the table by italic superscript letters, labeling sequentially by lines of the table.

Graphics. The preferred submission procedure is to embed graphic files in the word-processing document near the point where they should appear in the final publication. Separate graphic files may also be included with the submission package. Additional acceptable file formats for graphics are TIFF, PDF, or EPS (vector artwork). EPS files: For EPS files, all fonts should be converted to outlines or embedded in the graphic file. The document settings should be in RGB mode. EPS is preferred for line-art figures. TIFF files are preferred for photographs. A rule should not be placed around the graphic.

Colors. Choose colors that will allow all features to be clearly visible on white paper, and format in RGB color mode. The RGB requirements are essential for producing high-quality graphics within the published manuscript. Graphics submitted in CMYK may be used; however, the colors may not appear the same in the final output.

Naming and Numbering. Name your graphics Figure 1, Figure 2, etc. (Arabic numerals), consecutively, and for figures not embedded in the text, place a call-out in the main manuscript text where the graphic should be located. Boldface Arabic numerals should be used for numbering structures.

Lettering. Lettering should be 10 points, and lines should have ≥ 0.5 -point thickness at final printed size. Lettering and lines should be of uniform density. Size. Submit graphics at the required print publication size. At printed size, graphics must be 300 dpi for color art and images containing photographic material, 600 dpi for grayscale art, and 1200 dpi for black and white line art. The resolution requirements are essential for producing high-quality graphics within the published manuscript. Graphics submitted at lower resolutions may be used; however, graphics that do not meet stated resolution requirements may appear at a lower quality in the final output.

Titles, Abstract, Footnotes, Captions, Legends. Schemes may have titles and footnotes. Figures must have captions. To save space, place legends for graphs within the main body of the graphic, whenever possible.

Acknowledgment. Include financial support, technical assistance, advice from colleagues, gifts, etc. Be precise and thorough when acknowledging funders and include grant numbers where appropriate.

References. Compile all references together in a list at the end of the manuscript text. Many references will link directly to the cited article or other Web sites. It is crucial that authors verify the accuracy of references cited. Authors must reference all previous publications in which portions of the present work have appeared. Literature references should be numbered with Arabic numerals in the order of their first citation in the text and the corresponding superscripted numbers inserted at the appropriate locations in the text. References will be properly formatted during the technical editing and page formatting process. Articles accepted for publication should be cited as "in press"; the DOI should be given if the paper is published online only.