



ABOUT THE JOURNALS

The Bulletins of Natural and Applied Sciences is the official journal of the Department of Biological Sciences, Federal University Birnin Kebbi, Kebbi State, Nigeria. This biannual publication is a peer-reviewed, open-access journal available both online and in print, maintaining a high standard of quality.

AIM AND SCOPE

Bulletins of Natural and Applied Sciences is an English-language, peer-reviewed scholarly publication in the field of Natural and Applied Sciences. The journal publishes original papers, reviews, and short communications on new facts and findings that are of great benefit to the basic needs in biological sciences, agriculture, biotechnology, pharmaceuticals, health, and the food industries. BNAS publications span various subject areas, including Biology, Plant Science, Zoology, Toxicology (environmental and nutrition), Biostatistics, Genetics, Bioinformatics, Biotechnology, Biochemistry, Microbiology, Veterinary Sciences, Health Sciences, Agricultural Sciences, Chemistry, Geology, and other related fields.

EDITORIAL BOARD

Editor-in-Chief

Dr. Yahaya T. O., Associate Professor of Genetics and Toxicology, Federal University Birnin Kebbi, Kebbi State, Nigeria.

Editorial member

- ✓ Dr. J. Umar, Department of Biological Sciences, Federal University Birnin Kebbi, Kebbi State, Nigeria.
- ✓ Dr. Mohammed Bashar Danlami, Department of Microbiology, Federal University Birnin Kebbi, Kebbi State, Nigeria.
- ✓ Dr. Mohammad U.F., Department of Pure and Industrial Chemistry, Federal University Birnin Kebbi, Kebbi State, Nigeria.
- ✓ Dr. Abdulganiyu Yunusa, Department of Geology, Federal University Birnin Kebbi, Kebbi State, Nigeria.
- ✓ Dr. F. Magaji, Department of Biochemistry and Molecular Biology, Federal University Birnin Kebbi, Kebbi State, Nigeria.
- ✓ Prof. J. N. Keta, Plant Sciences and Biotechnology, Kebbi State University of Science and Technology, Aliero.
- ✓ Prof. I. O. Obaroh, Department of Biological and Environmental Sciences, Kampala University, Uganda.
- ✓ Dr. A. M. Gumi, Department of Plant Sciences, Usmanu Danfodiyo University Sokoto, Sokoto State, Nigeria.
- ✓ Dr. M. U. Ladan, Department of Biological Sciences, Federal University Gusau, Zamfara State, Nigeria.

Genetics, University of Lagos, Nigeria.

- ✓ Dr. Oladele Esther, Biology Unit, Distance Learning Institute, University of Lagos.
- ✓ Dr. Titilola F. Salisu, Department of Zoology and Environmental Biology, Ogun State University, Ago-Iwoye, Ogun State, Nigeria.

Patrons:

Prof. M. D. A. Bunza;
Prof. K. Shehu;
Prof. A. A. Aliero;
Prof. H. M. Bandiya

EDITORIAL POLICY

The official language of the Bulletins of Natural and Applied Sciences journal is English. The journal considers only original articles that have not been published elsewhere and are not under consideration, either in whole or in part, for publication in any other language.

The work described in an article involving the use of an animal model must have been conducted in accordance with the Code of Ethics. Each article is sent to two reviewers with expertise in the subject area. The article can be either accepted in its submitted form (with minor or major corrections) or rejected, based on the reviewers' comments.

BNAS holds the exclusive right to make changes to the layout of an article accepted for publication to conform to the journal's standards. Before publication, galley proof will be sent to the corresponding author. It is the sole responsibility of the corresponding author to promptly return the galley proof after making necessary corrections.

Once an article is accepted for publication, the author(s) cede the copyright to BNAS. However, authors remain responsible for the content that appears in their published manuscripts.

ARTICLE STRUCTURE

All components of the manuscript should be in Times New Roman font style, size 12 (except for the title, which should be in size 14), and double-spaced. The presentation should adhere to the following guidelines:

Headings:

The manuscript should be divided into clearly defined and numbered sections and subsections. Subsections should be numbered as 1.1 (then 1.1.1, 1.1.2, 1.1.3, etc.). The abstract is not included in the section numbering. Each subsection should be given a brief heading on a separate line.

Title:

The title should not exceed 20 words and should be self-explanatory. The surname and initials of each author, along with their affiliation and contact details (telephone numbers and email address) of the corresponding author, should be included.

Abstract:

A factual and concise abstract of not more than 250 words is required. It should briefly state the background and purpose of the research, describe data collection and analysis, highlight the principal results, and summarize the major conclusions and recommendations. The abstract is often presented separately from the article, so it must be able to stand alone. Therefore, references should be avoided. If essential, cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential, they must be defined at their first mention in the abstract itself.

Keywords:

Immediately after the abstract, provide 4-6 keywords.

1.0 Introduction

A concise yet comprehensive background of the research subject is expected. Clearly outline what is already known about the investigation's focus. Articulate the problems, aim, and objectives of the research without delving into an extensive literature survey or summarizing results. Begin with a broad perspective of the main subject, gradually narrowing down to the central context under study.

2.0 Materials and Methods

Provide a detailed description of the research methodology, encompassing the study area, research/experimental designs, sample and sampling techniques, methodological instruments and equipment, methods of analysis, ethical considerations, data analysis, and other relevant aspects. Present information in a clear and comprehensive manner, enabling another researcher to replicate the work. Cite and summarize previously published methods; when directly quoting, ensure proper citation. Describe any modifications made to current methods.

3.0 Results

Present clear and concise results. Ensure that major findings directly relate to the problem statement and/or research questions. Tables, figures, and plates should have self-explanatory titles and be well-described in statements.

4.0 Discussion

Instead of restating findings, critically examine the significance of the work's findings and compare them with existing information or earlier works on the subject. Provide justifications for disagreements with earlier works. Consider combining the Results and Discussion sections. Avoid lengthy citations and discussions of published works.

5.0 Conclusions

Draw main conclusions based on the presented and analyzed data.

6.0 Recommendations

Base recommendations on the study's major findings and state them precisely.

7.0 Acknowledgments**8.0 Conflict of Interest****9.0 References**

Ensure that every reference cited in the text is also present in the reference list (and vice versa). Avoid including personal communications and unpublished results in the reference list, but you may mention them in the text.

Citation in text

Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number (s) must always be given.

Example: "..... as demonstrated [1, 7]; Yahaya and Umar [2] obtained a different result"

Reference List

Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

Journal article (1-6 authors):

[1] Yahaya T, Umar J, Sani KA, Caleb O, Salisu N. Effect of Seasonal Variation on the growth of Catfish: Biomass Bioener. 2009;1(4):234-9.

Journal article (More than 6 authors):

[3] Yahaya T, Umar J, Sani KA, Caleb O, Salisu N, Usman, B, et al. Effect of Seasonal Variation on the growth of Catfish: Biomass Bioener. 2009;1(4):234-9.

Book (1-6 authors):

[12] Yahaya T, Umar J. New Biotechnology. 4th ed. University press; Kebbi state Nigeria. 2022.

Book (More than 6 authors):

[7] Sani KA, Yahaya T, Umar J, Caleb O, Salisu N, Usman, B, et al. Modern medical Parasitology. 4th ed. Philadelphia, PA: Mosby Elsevier; 2018.

Book chapter:

[4] Thomas, G. Chemistry. 3rd ed. Chichester: John Wiley; 2017. Chapter 8.2, The chemical nature of the binding of ligands to receptors; p.252-254.

Newspaper article:

[12] Yahaya, T. Our apocalypse now. Biodiversity and the threat to it from environmental destruction. Sydney Morning Herald 2023 Dec. 15:71.

Report (Online):

[5] Nigerian Institute of Health and Welfare. Drinking patterns in Nigeria, 2021-2023. Cat. no. RHE443. [Internet]. Nigerian Institute of Health and Welfare, 2010 [cited 2021 Jan 19]. Available from: <https://www.aihw.gov.au/getmedia/29697ff8-c90d-45e4-979d-39672d95ffd5/11895.pdf.aspx?inline=true>.

Thesis:

[4] Umar J. Effect of industrial waste water for the growth of Rice [Ph.D Thesis]. Usmanu Danfodiyo University Sokoto; 2017.

Conference Paper:

[75] Gale J, Passey M, Stirling J, Sani KA. Caring for pregnant Aboriginal women: provider views on managing tobacco, alcohol and cannabis use. In: 2017 Primary Health Care Research Conference, 2023 Aug 7 - 9; Brisbane.

Web page:

[43] Queensland University of Technology. Review on Research Methodology. [Internet] 2020 [updated 2023 May 17; cited 2023 Dec 6]; Available from:<http://www.citewrite.qut.edu.au/write/litreviews.jsp>.

Scientific Names

All biological/Latinized/vernacular words should be italicized and written in full at first, subsequently shortened, e.g., *Nigella sativa*, *S. sativa*.

Figure and Plates Captions

Each figure or plate must have a concise yet comprehensive caption. Supply captions separately, not attached to the figure. A caption should include a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum, but explain all symbols and abbreviations used. The caption should be typed below the figure or plate. Avoid the use of unnecessary phrases such as "Figure Showing..." or "Map illustrating..." Figures and plates should be simple and clear to interpret. Arabic numerals should be used in numbering figures and plates.

Tables

Submit tables as editable text and not as images. Tables should be constructed so that they can be read and understood without reference to the text. Each table should have a clear and self-explanatory title and should be typed above the table. Number tables consecutively with Arabic numerals. Tables can be placed either next to the relevant text in the article or on separate pages at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables, and ensure that the data presented do not duplicate results described elsewhere in the article. Avoid using vertical rules and shading in table cells.

Abbreviations

Avoid using abbreviations at the beginning of a title, heading, or sentence. Common scientific abbreviations (DNA, RNA, cpDNA, dNTP, and ATP) and unit abbreviations (h, min, s, yr, mo, cm, mm, kg, and g) with numerals can be used without spelling out at first use.

Standard International (SI) Units

Standard International (SI) Units should be used throughout the text.

Ethical Matter

Authors using human subjects or experimental animals in their research must seek approval from the appropriate Ethical Committee.

Copyright: Submission of a manuscript to BNAS implies that, the research study presented has not been published before or under consideration for publication elsewhere. Once an article has been accepted for publication, author(s) cedes the copyright to *Bulletins of Natural and Applied Sciences (BNAS)*, however, authors are responsible for the contents that appeared in their published manuscripts.

SUBMISSION OF MANUSCRIPT

Manuscripts are to be submitted online through journal email address: bulletinsofnas@gmail.com

Article processing Charges (APC)

Authors are required to pay a manuscript handling charge of six thousand naira (NGN 6,000), and evidence of payment should be submitted along with the manuscript. Upon acceptance of a manuscript, a publication charge of ten thousand naira (NGN 20,000) is applicable. For international contributors, the publication charge is fifty dollars (\$50) only. Payments should be made exclusively to:

Bank Name: Fidelity Bank

Account Name: Tajudeen Yahaya Olanrewaju

Account Number: 5331968060

Or via Money transfer (For International Authors) to The Editor in Chief, BNAS, Federal University Birnin Kebbi, PMB 1157, Kebbi state Nigeria.

Contact address:

The Editor -in - Chief

Bulletins of Natural and Applied Sciences

Faculty of Sciences

Federal University Birnin Kebbi.

P.M.B. 1052 Birnin Kebbi, Kebbi State.

+2348033550788

E-mail addresses:yahayatajudeen@gmail.com

OUR CONTACTS

+2348033550788; +2348060749791; +2348068158687;

+2348064446941, buletinsofnas@gmail.com.

Thank you for your interest in our Journal.