

ISSN: 2455-6718

RNI: WBENG/2016/76189

International Research Journal of Basic and Applied Sciences

Volume 7 ■ December 2022



Raja N.L. Khan Women's College (Autonomous)

Gope Palace • Midnapore • Paschim Medinipur • West Bengal • India

Website: www.rnlkwc.ac.in

International Research Journal of Basic and Applied Sciences

ISSN: 2455-6718 :: RNI: WBENG/2016/76189

Volume 7 ■ December 2022

Published by:

Dr. Jayasree Laha

Principal

Raja N. L. Khan Women's College (Autonomous),
Gope Palace, Midnapur, Vidyasagar University,
Paschim Midnapur-721102, West Bengal, India.

www.rnlkwc.ac.in

email: rnlkcollege@gmail.com

Mob. No: 9064820067

Publication Production & Co-ordination:

Dr. Biswajit Mandal

Dr. Angsuman Chanda

© 2021 Raja N. L. Khan Women's College (Autonomous)

Printed at: **SHREELIPI**, Midnapur.

Ph: 9732754886; email: shreelipi.publication@yahoo.com

Chief Editor

Dr. Jayasree Laha

Managing Editors

Dr. Partha Pratim Chakravorty

Dr. Biswajit Mandal

Associate Editors

Dr. Sukumar Mandal

Dr. Angsuman Chanda

Section Editors

Human Physiology and Food Science

Dr. Dilip Kumar Nandi, Associate Professor in Physiology

Dr. Tanushree Tulsian Samanta, Assistant Professor in Physiology

Animal and Plants Science

Dr. Rashmi Mukherjee, Assistant Professor in Botany

Dr. Sujoy Midya, Assistant Professor in Zoology

Dr. Harekrishna Jana, Assistant Professor in Microbiology

Mathematical and Computer Science

Dr. Ajoy Kumar Maity, Associate Professor in Mathematics

Dr. Sandip Kumar Mondal, SACT in BCA

Material Science and Technology

Dr. Mrinal Kanti Paria, Associate Professor in Chemistry

Dr. Nimai Bar, Assistant Professor in Chemistry

Earth and Environmental Science

Dr. Moumita Maitra Maity, Associate Professor in Geography

Dr. Pravat Kumar Shit, Assistant Professor in Geography

Economics and Social Impact

Dr. Partha Pratim Roy, Assistant Professor in Economics

Dr. Suman Chakraborty, Assistant Professor in Economics

Technical Assistants

Mr. Animesh Manna, SACT in Computer Sc.

Mr. Nirmalya Sinha, SACT in Nutrition

Editorial Board

- Prof. Amar Kr. Chanda** Honorary President of PSI, General Sec. of FIPS & SAAP. Dept. of Physiology, Calcutta University
- Prof. Puspendu Kr. Das** Dept. of Inorganic - Physical Chemistry, Indian Institute of Science (IISc), Bengaluru, Editor- Academy of Science.
- Prof. K. K. Dipak** Department of Physiology. AIIMS. N. Delhi.
- Prof. Debabrata Ghosh** Department of Physiology. AIIMS. N. Delhi
- Prof. Sharaine Fernando** Dept. of Physiology. Faculty of Medical Sciences. University of Sri Lanka. Mail: sharainefer@yahoo.com
- Prof. Tanmoy Bhattachariya** Dept. of Zoology. Vidyasagar University. (Ret.), Mail: tanmoybhattacharya@yahoo.com Raja N.L. Khan Women's College International Research Journal of Basic and Applied Sciences
- Prof. V. C. Joy** Dept. of Zoology. Viswa Bharati. Santiniketan. 731235. Mail : vcjoy12@rediffmail.com
- Prof. Subrata Roy** (Ret). Dept. of Zoology, Burdwan University. Resc. Co. Operative housing Society. plt. No. 02. Krishnapur. Burdwan. 713104. Phone. 9434839264. Mail: profraayubrata@yahoo.co.in
- Prof. Basanta Kr. Agarwal** Dept. or Zoology, Tripura Uiversity. Suryamaninagar- 799022, Phone: 9436169733. Mail: bagarwal00@gmail.com
- Prof. S. K. Sahu** Dept. of Environmental Science. Sambalpur University. Jyotibihar, Orissa-768019, Phone: 09668220609
- Prof. Cyrille D'Haese** UMR 7205CNRS, "Origin, Structure et Evolution de la Biodiversité", Dept. Systemique et Evolution, Museum National d, Histoire Naturelle, CP50 Entomologie, 45rue Buffon, 75231, Pris Cedex 05, France, Phone: 33 (0) 140795736, Mail: dhaese@mnhn.fr
- Prof. Sathe Tukuram Vithalrao** Dept. of Zoology. Shibaji University, Kolapur-416004, Phone: 7276309148, Mail: profdrtvsathe@rediffmail.com
- Prof. Jean Francois Ponge** Museum National d' Histoire Naturelle. CNRS UMR 7179. 4 Avenue du Petit Chateau, 91800, Brunoi. France, Phone: +33(0)678930133, Mail: ponge@mnhn
- Dr. Ramakrishna Maity** Prof. in Geography, Vidyasagar University.
- Dr. Soumendu Chatterjee** Associate Prof. in Geography, Presidency University.
- Dr. S.K. Roy** Prof. of Physics. IIT, Mail: physkr@phy.iitkgp.ernet.in
- Dr. Argha Tarapdar** Prof. of Physics, IIT
- Dr. Somenath Bharawaj** Prof of Physics, IIT
- Prof. A. Goswami** IIT. KGP.
- Prof. M.M. Pal** Dept. of Mathematics. Vidyasagar University.
- Prof. M. Mnity** (Ret.) Dept. of Mathematics , Vidyasagar University
- Dr. Rabindranath Rej**
- Dr. Tapan Kr. Mishra** Principal (Ret.). Vidyasagar College, Kolkata.
- Prof. Koushik Das** Dept. of Chemistry; Jadavpur University.
- Prof. Sraboni Tarafdar** Dept. of Chemistry, IIT. KGP.
- Prof. Swngnta Dasgupta** Dept. of Chemistry, IIT. KGP.
- Dr. Ashok Bhunia** Dept. of Mathematics. Burdwan University.
- Prof. Tnpan Kr. Kar** Dept. of Mathematics. IEST, Shibpur.
- Dr. Surajit Ghosh** Dept. of Physics, Vidyasagar University
- Dr. Dilip Kr. Pal** Prof., Dept of survey and land studies. Papua New Guinea Technological University
- Dr. Jadab Chandra Chattopadhyya** Prof., Dept. of Anatomy. Medical College, Kolkata.
- Dr. Jyoti Prakas Halder** Former Principal, Bangabasi Evening College. Kolkata.
- Dr. Sudeshna Sarkar** Computer Science.
- Prof. Rajat Kr. Paul** Dept. of Computer Science. Calcutta University
- Dr. Mahnmad Alluddin** Prof., Dept. of Obstetrics & Gynaecology, Medical College

ABOUT THE JOURNAL

International Research Journal of Basic and Applied Sciences (IRJBAS) is a high-quality scientific journal devoted to field of Sciences. It is published annually by Principal, Raja N. L. Khan Women's College (Autonomous), Midnapur, West Bengal, India. The Editorial Board is very committed to establish the Journal as one of the leading international journals in field of basic and applied Sciences.

International Research Journal of Basic and Applied Sciences aims to provide a highly readable and valuable addition to the Science which will serve as an indispensable reference tool for years to come. The journal's core aims therefore is to provide a platform for the researchers, scholars, resource persons and practitioners to come together and share their research findings with the rest of the world. We hope it will improve the scientific knowledge and society as a whole. The Journal future targets is to enhanced publication facilities of research work and organizing international conferences as well as publishing selected best papers of the conference proceedings. The coverage of the journal includes all new theoretical and experimental findings in the fields of science or any closely related fields. IRJBAS therefore is an Open access, Peer Reviewed, Multidisciplinary Journal. It publishes manuscripts in the fields of Physics, Chemistry, Biological Sciences, Mathematics, Pharmaceutical Sciences, Medical Sciences, Marine Sciences, Geology, Geography etc. All manuscript submissions will be subjected to Peer-Review by experts in the field. Manuscripts with high quality will be published without delay.

INSTRUCTION TO AUTHOR

General

Manuscripts must be submitted to Chief Editor at: sc_journal@nmlkwc.ac.in otherwise the article will not be entertained. A manuscript number will be mailed to the corresponding author within 72 hours.

The cover letter should include the corresponding author's full address, telephone, fax numbers and mail ID and should be in an e-mail message sent to the Editor.

Article Types

Four types of manuscripts may be submitted:

Original articles: These should describe new and carefully confirmed findings, and experimental procedures should be given in sufficient detail for others to verify the work. The length of a full paper should be the minimum, just to describe and interpret the work clearly.

Short Communications: A Short Communication is suitable for recording the results of complete small investigations or giving details of new models or hypotheses, innovative methods, techniques or apparatus. The style of main sections need not conform to that of fulllength papers. Short communications are of 2 to 4 printed pages (about 6 to 12 manuscript pages) in length.

Review articles: Submissions of reviews and perspectives covering topics of current interest are welcome and encouraged. Reviews should be concise and no longer than 4-6 printed pages of A4 size paper. Reviews manuscripts are also peer-reviewed.

Case Reports: Good quality Case reports are accepted.

Review Process

All manuscripts are reviewed by anonymous reviewers and the final decision will be taken by the Editorial Board. Decisions will be made as rapidly as possible, and the journal strives to return reviewers' comments to authors within 6 weeks. The editorial board will re-review manuscripts that are accepted pending revision. It is the goal of the IRJABS to publish manuscripts within 3month after submission.

Regular articles

All portions of the manuscript must be typed double-spaced and all pages numbered starting from the title page in MS word/ Latex in A4 size paper.

Title Page

The Title should be a brief phrase describing the contents of the paper. The Title Page should include the authors' full names and affiliations, the name of the corresponding author along with phone, fax and E-mail information.

The Abstract should be informative and completely self-explanatory, briefly present the topic, state the scope of the experiments, indicate significant data, and point out major findings and conclusions. The Abstract should not exceed 250 words in length. Complete sentences, active

verbs, and the third person should be used, and the abstract should be written in the past tense. Standard nomenclature should be used and abbreviations should be avoided.

A set of suitable key words (6-8 in number) may be provided.

Introduction

Introduction should be brief and state precisely the scope of the paper. Review of the literature should be restricted to reasons for undertaking the present study and provide only the most essential background.

Materials and Methods / Model formulation and solution etc.

Materials and methods should be complete enough to allow experiments to be reproduced. However, only truly new procedures should be described in detail; previously published procedures should be cited, and important modifications of published procedures should be mentioned briefly. Capitalize trade names and include the manufacturer's name and address. Subheadings should be used.

The nomenclature, the source of material and equipment used, with the manufacturers details in parenthesis, should be clearly mentioned. The procedures adopted should be explicitly stated to enable other workers to reproduce the results, if necessary. New methods may be described in sufficient detail indicating their limitations. Established methods can be just mentioned with authentic references and significant deviations, if any given, with reasons for adopting them. While reporting experiments on human subjects and animals, it should be clearly mentioned that procedures followed are in accordance with the ethical standards laid down by the national bodies or organizations of the particular country. For example, for research carried out in India on human subjects, the ICMR's Ethical guidelines for biomedical research on human participants (2006) should be adhered to. Similarly, for experiments on laboratory animals the ICMR's guidelines Use of animals in scientific research (May 2006)/INSA's guidelines for care and use of animals in scientific research (2000) or guidelines of the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) should be followed. Adequate information should be provided on the care and use of laboratory animals, source of animals, strain, age, sex, housing and nutrition, etc. Whenever needed, appropriate certification should be provided at the time of submission of the manuscripts. The drugs and chemicals used should be precisely identified, including generic name(s), dosage(s) and route(s) of administration.

Study period should be mentioned where experimental work has been performed.

Results

Only such data as are essential for understanding the discussion and main conclusions emerging from the study should be included. The data should be arranged in unified and coherent sequence so that the report develops clearly and logically. Data presented in Tables and Figures should not be repeated in the text. Only important observations need to be emphasized or summarized. The same data should not be presented both in tabular and graphic forms. Interpretation of the data should be taken up only under the Discussion and not under Results or results may be divided numerically by any software package (to be mentioned).

Discussion

The discussion should deal with the interpretation of results without repeating information already presented under Results. It should relate new findings to the known ones and include logical deductions. It should also mention any weaknesses/limitations/lacunae of the study.

Conclusion

The conclusions can be linked with the goals of the study but unqualified statements and conclusions not completely supported by the data should be avoided. Claiming of priority on work that is ongoing should also be avoided. All hypotheses should, if warranted, clearly be identified as such; recommendations may be included as part of the Discussion, only when considered absolutely necessary and relevant.

Acknowledgment

Acknowledgment should be brief and made for specific scientific/technical assistance and financial support only and not for providing routine departmental facilities and encouragement or for help in the preparation of the manuscripts (including typing or secretarial assistance).

Tables

Tables should be kept to a minimum and be designed to be as simple as possible. Tables are to be typed double-spaced throughout, including headings and footnotes. Each table should be on a separate page, numbered consecutively in Arabic numerals and supplied with a heading and a legend. Tables should be self-explanatory without reference to the text. The details of the methods used in the experiments should preferably be described in the legend instead of in the text. The same data should not be presented in both table and graph form or repeated in the text.

Figures

Figure legends should be typed in numerical order on a separate sheet. Graphics should be prepared using Microsoft Word manuscript file. Tables should be prepared in Microsoft Word. Use Arabic numerals to designate figures and upper case letters for their parts (Fig 1). Begin each legend with a title and include sufficient description so that the figure is understandable without reading the text of the manuscript. Information given in legends should not be repeated in the text.

References

Reference should appear in a separate bibliography at the end of the paper double spaced with items referred to by numerals and put in alphabetical order. In the text, a reference identified by means of an author's name should be followed by the date of the reference in parentheses. When there are more than two authors, only the first author's name should be mentioned, followed by 'et al'. In the event that an author cited has had two or more works published during the same year, the reference, both in the text and in the reference list, should be identified by a lower case letter like 'a' and 'b' after the date to distinguish the works.

Examples

Journals: Author (last name) AB (initials), Author BB, Year, Title of Article, Journal name, Volume, Page numbers.

Books: Author AB, Author BB, Author CC, Year, Title of Book, Ed, Vol, Publisher, City.

Example: Premanand R, Santhoshkumar PH, Mohan A, Study of thiobarbituric reactive substances and total reduced glutathione as indices of oxidative stress in chronic smokers with and without chronic obstructive pulmonary disease, J Chest Dis Allied Sci, 2007, 49, 9-12.

Authors may submit the name, address and email ID of three reviewers, out side to his own institution.

Short Communications

Short Communications are limited to a maximum of two figures and one table. They should present a complete study that is more limited in scope than is found in full-length papers. The items of manuscript preparation listed above apply to Short Communications with the following differences: (1) Abstracts are limited to 150 words; (2) instead of a separate Materials and Methods section, experimental procedures may be incorporated into Figure Legends and Table footnotes; (3) Results and Discussion should be combined into a single section.

Proofs

Electronic proofs will be sent (e-mail attachment) to the corresponding author as a PDF file. Page proofs are considered to be the final version of the manuscript. With the exception of typographical or minor clerical errors, no changes will be made in the manuscript at the proof stage. Because IRJBAS will be published online, authors will have free electronic access to the full text (PDF) of the article. Authors can freely download the PDF file from which they can print unlimited copies of their articles.

Copyright

Submission of a manuscript implies: that the work described has not been published before (except in the form of an abstract or as part of a published lecture, or thesis) that it is not under consideration for publication elsewhere; that if and when the manuscript is accepted for publication, the authors agree to automatic transfer of the copyright to the author publisher have no liabilities of any discrepancy for this publication.

Page Charges

There is no page charges for publication in this journal.

Table of Contents

Comparison of spatial variation of ecologically important soil arthropods Sibani Chaudhuri, Priyanka Sarangi, Suchetana Karmakar, and Partha Pratim Chakravorty	13
Zooplankton Surface Attached Bacteria Potentially Usable as A Plant Growth Promoter- an In-Vitro Study Shrabasti Mahanty, Sneha Dinda, Sumana Mahato, Nidarshna Das, Anwasha Dutta, Suchismita Banerjee, Shrestha Mallick, Subhashree Das, Mallika Roy, Saheli Maiti, Sk Saruk Islam and Sujoy Midya	35
Socio-Ecological Impact of Peri-Urbanization on the Shrinking East Kolkata Wetlands Arpita Chaudhury Aich and Bela Das	56
Importance of Forest to the Forest based Community: Study on Chakua Forest Fringe village, Purulia, West Bengal Samir Pramanik and Bela Das	67
A Note On Breeding Behavior of Asian Blue Throated Barbet – <i>Psilopogon asiaticus asiaticus</i> (Latham, 1790) Angsuman Chanda and Tanmay Bhattacharya	83
Relationship Between Timing Of Peak Height And Weight Velocity In West Bengal School Children Aged 6-17 Years Dr. Amlan Sarkar and Dr. Nasim Ahmed	89

Leaf extract of <i>Antigonon leptopus</i> (Hook and Arn.)- An Effective Ichthyotoxicant of plant origin on predatory fish, <i>Oreochromis niloticus</i> (Linnaeus,1758)	
Dulal Kumar De, Sujit Kumar De, Rama Prasad Bhattacharya, Bratati Bhanja1 and Dipankar De	98
Faunal Diversity of Mangrove Ecosystem in India- A Conspectus	
Asok Kanti Sanyal	110
A Checklist of Climbing Plants in South Bengal and Sundarbans, India	
Achintya K. Samanta and Sauris Panda	124
Resource partitioning in house lizard: An observation	
Angsuman Chanda	146