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# NEUROTRANSMITTERS IN PLANTS

Perspectives and Applications

EDITED BY

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CRC Press  
Taylor & Francis Group

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## GABA/BABA Priming Causes Signaling of Defense Pathways Related to Abiotic Stress Tolerance in Plants

*K.C. Jisha, A.M. Shackira, and Jos T. Puthur*

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### 13.1 INTRODUCTION

Abiotic stresses are the most significant factors leading to extensive and erratic loss in agricultural productivity across the world. Owing to the sessile nature of plants, they must cope with adverse environmental conditions, and therefore they must possess a variety of responses to cope with various environmental stresses (Gao et al. 2007). In plants, these stresses adversely affect the growth and productivity by triggering a series of morphological, biochemical, and molecular mechanisms (Wang et al. 2001). Even though the plants have developed specific mechanisms during the course of evolution to sense the subtle changes of growth conditions that trigger many signal transduction cascades (Gao et al. 2007), certain treatments activate stress responsive genes and finally leads to changes at the physiological and biochemical levels in plants.

The quick signaling for inducing the defense mechanism against the adverse environmental conditions requires a stress signal, which gets transduced like a neurotransmitter. Major neurotransmitters found in plants include acetylcholine, epinephrine,  $\gamma$ -aminobutyric acid (GABA), dopamine, levodopa, melatonin, serotonin, and so on (Fait et al. 2006). Later, it was discovered that GABA is largely and rapidly produced in plants in response to various biotic and abiotic stress factors. For example, when insects walk across a leaf, rapid accumulation of GABA was monitored within seconds (Scholz et al. 2015). In addition,  $\beta$ -aminobutyric acid (BABA) a close structural relative of GABA, is a potent inducer of acquired disease resistant in plants. However, its occur-

CRC Press  
Taylor & Francis Group  
6000 Broken Sound Parkway NW, Suite 300  
Boca Raton, FL 33487-2742

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CRC Press is an imprint of Taylor & Francis Group, an Informa business

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Printed on acid-free paper

International Standard Book Number-13: 978-1-1385-6077-2 (Hardback)

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**Library of Congress Cataloging-in-Publication Data**

---

Names: Ramakrishna, Akula, editor. | Roshchina, V. V. (Viktoriiëia Vladimirovna), editor.  
Title: Neurotransmitters in plants : perspectives and applications / editors: Akula Ramakrishna and Victoria Roshchina.  
Description: Boca Raton, FL : CRC Press, Taylor & Francis Group, 2018. | Includes index.  
Identifiers: LCCN 2018011298 | ISBN 9781138560772 (hardback : alk. paper)  
Subjects: LCSH: Plant physiology. | Neurotransmitters.  
Classification: LCSH: Q747 .N48 2018 | DDC 571.2--dc23  
LC record available at <https://lccn.loc.gov/2018011298>

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- **ISBN** : 978-93-83637-86-7
- **Edition** : First, Year 2018
- **©** : Writer
- **Price** : ₹ 275.00 Only
- **Publisher** : Quality Books Publishers & Distributors  
15, Siddhartha Nagar, Guba Garden,  
Kalyanpur, Kanpur-208 016 (U.P.)  
Mo. 8960421760, 09971275801
- **Graphic** : Anupra Graphic, Baradevi, Kanpur
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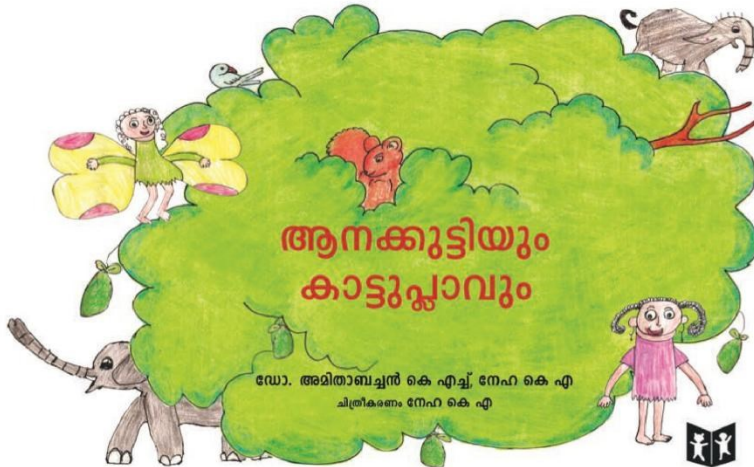
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Volume 3  
ISBN: 978-81-926873-9-1

Chief Editor  
**Dr. Sabique. MK**  
(Head, Department of Arabic)

Publication Division:  
**MES Mampad College (Autonomous)**  
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ملك مغرب ووكّهم إلى قائد عربي اسمه شهاب الدين  
أحمد بن ماجد حتى أرشدهم إلى شبه القارة الهندية  
وإلى هي معروفة لدى العرب ومجهولة بالنسبة إلى  
الأوروبيين ٣.

سارت للسفن تمخر أمواج البحر إلى الطرة  
غريبة لدى الأوروبيين وسارت اللجج أيامه وشهوره  
غير اطلاع على أي بر ولا أرض. وكانت الرياح تهب  
يشدها ولكنها ما أوقدت نيران همّتهم وعزمهم  
بعد أيام سقطت أنظارهم على قطعة من  
وبدت برأى منهم أرض جميلة مليئة بأشجار نارج  
بتاريخ ١٨ مايو. تهلّلت أساربر وجه غاما وأضح  
ورقصوا وتحدّثوا بأن هذه كالكوث أرض الطير  
والفلفل والزنجيل وما إليها من الثروات المجر  
والأمتعة الثمينة.

مقدمة :

اتسعت حظيرة الاسلام إلى شتى أجواء المعمورة. حين  
وصل نوره على سواحل أفريقيا وأوربا، ازداد العرب  
في هاتين القارتين عزاً وشرفاً وكان أساس تقدّمهم  
الديني والتجاري متانهم الاقتصادية. ومصدر هذه  
المتانة الاقتصادية كان الطيب والفلفل المصدرين  
من كالكوث. وقعت الدول الغربية في أشدّ دهشة  
وتعجب حينما شاهدوا ثروة العرب وانتشار الاسلام  
شرقاً وغرباً حتى اضطروا إلى أن يلجؤا إلى العرب  
للقضايا التجارية ونحوها. البرتغاليون وهم أول من  
تجرأ لهذه المغامرة الهائلة بأن خرجوا إلى شبه قارة  
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ISBN 978-81-928873-9-1

A historical study on the arrival of the Portuguese to Kerala The fold of Islam has expanded to all corners of the globe. When its light reached the coasts of Africa and Europe, the Arabs in these two continents increased in dignity and honor, and the basis of their religious and commercial progress was their economic strength. The source of this economic strength was the spices and pepper exported from Calcut. The Western countries fell into the greatest astonishment and when they saw the wealth of the Arabs and the spread of Islam east and west, to the point that they were forced to turn to the Arabs for commercial issues. The Portuguese were the first to dare this enormous adventure by leaving the Indian subcontinent, heading towards Calcut.

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ISBN 978-93-5300-711-9

41.

## The evaluation of child morbidity in the marginalized fisher folks of Kerala, India

**Dhanya K**

*Department of Economics,*

*M.E.S. Asmabi College,*

*Vemballur P.O, Thrissur, Kerala*

### **Abstract:**

*This paper is to examine the extend of child morbidity in the background of poverty on the already marginalized community of fisher folks in Kerala, a part of South India. This will portray the potential impacts of poverty on the socio-economically weaker section. Kerala's social indicators of development such as death rate, birth rate, infant mortality rate, life expectancy, literacy rate and the like are comparable to that of the most advanced countries. The study addressed the Objectives, such as to evaluate the socio-economic conditions of fisher folk and their relations with the causes and extend of child morbidity and To enumerate the source of funds for financing health care. A community based cross sectional study was done among fishermen in coastal area of two, Panchayaths of Thrissur, Kerala, viz. Eriyad and Sreenarayanapuram. Fifty households in the two fishing panchayaths were selected by multistage cluster sampling method. This study is mainly based on a primary survey, conducted in two, Panchayaths of Thrissur, Kerala, viz. Eriyad and Sreenarayanapuram. The survey covered a total of 50 households (25 from each panchayath) by simple random basis. History related to their socio-demographic details, occupational characteristics, their personal habits were asked with the aid of the semi structured questionnaire and also their physical parameters were measured. The association between various factors and physical morbidity were analyzed by using various tests. The results of the study showed that the highest prevalence for physical morbidity in the children's of fishermen was seen for fever (48%) followed by Skin disorders (35%), heart diseases (23%). The study also found the presence of high illiteracy rate, lack of proper social security, long duration of fishing activity, lack of proper protection from sunlight and noise in heard in the fishermen population. Age was significantly associated with most of the morbidity in the present study. The study concluded that the prevalence of non-communicable diseases in the children of fishermen population of Thrissur coast district was moderately high, highlighting the need for specific screening programmes and occupational health services for these population. Therefore, it is envisaged that, there is an urgent need to understand the common health related child morbidity of the fishermen population and to provide for the occupational health services to screen and diagnose the chronic diseases in the fishermen community at the earliest.*

**Key words:** child morbidity, fishermen, health, prevalence, coastal population



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माया प्रकाशन  
कानपुर-208021

ISBN : 978-81-934201-4-0

- पुस्तक : भारतीय साहित्य में सिविल सैनिक संबंध  
संपादक : डॉ. रंजित एम., डॉ. सूर्या बोस  
स्वत्वाधिकार : सम्पादक  
प्रकाशक : माया प्रकाशन  
6A/540, आवास विकास  
हंसपुरम् कानपुर-208 021  
Mo. : 09451877266, 7618879266  
E- mail : mayaprakashankanpur@gmail.com  
संस्करण : प्रथम 2018  
मूल्य : 350.00 मात्र  
शब्द सज्जा : विष्णु ग्राफिक्स  
नौबस्ता, कानपुर  
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जन्म : 30.10.1980, कोट्टीयम, केरल

शिक्षा :

एम.ए., एम.फिल्., पी-एच.डी., स्नातकोत्तर डिप्लोमा इन हिंदी अनुवाद

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1. हिंदी कहानियों में बाल पात्र
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### 23. Female-headed Households in Kerala

*Jasna NM*  
Research Scholar  
Department of Economics

*Dr. KV Ramachandran*  
Department of Economics  
Dr. John Mathai Centre, Aranattukara

#### Introduction

*The household is regarded as the fundamental social and economic unit of the society. During the last fifteen years we have made considerable progress in identifying the various forms of house hold compositions. Due to the introduction of Globalization, liberalization, and urbanization, we have moved gradually from a single form of family (joint family) to two forms (nuclear family) and then to a multiplicity of forms. The content of life (husband wife parent and the child relationship) in every household includes the interaction between the members of the household, their sentiments, their emotions, their pleasures and pains, tensions and conflicts etc. These interactions are guided by norms and values attached to position and roles of the members. In this regard every member of the household is important. But every role and relationship in the family, as well as its composition undergoes transformation in the developmental process.*

*The community that is the subject of this study is constituted of those women who earn the bulk of the family income and takes all the responsibilities of that family, widows, deserted and divorced women, and women who are separated from their husbands from long stretches of time due to migration and are virtually the heads of the households.*

*In this study I explore the factors that led to the creation of female headed households in Kerala and also identifying the problems and economic survival of the women to whom the Indian society and data system provide only very sketchy information.*

The household is regarded as the fundamental social and economic unit of the society. Households headed by women have become more significant phenomenon worldwide in the last half of the 20<sup>th</sup> and beginning of 21<sup>st</sup> century. In many countries in the third world like Asian or Latin American countries, in the recent years, there has been a significant increase in the percentage of female headed households (FHH).

It is an important fact that female headed households are rising in number and proportion in most developing regions, currently constituting an estimated 13% of all households in the middle east and north africa, 16% in Asia, 22% in sub-Saharan Africa, and 24% in Latin America. In developing countries majority of households that are headed by women have many economic

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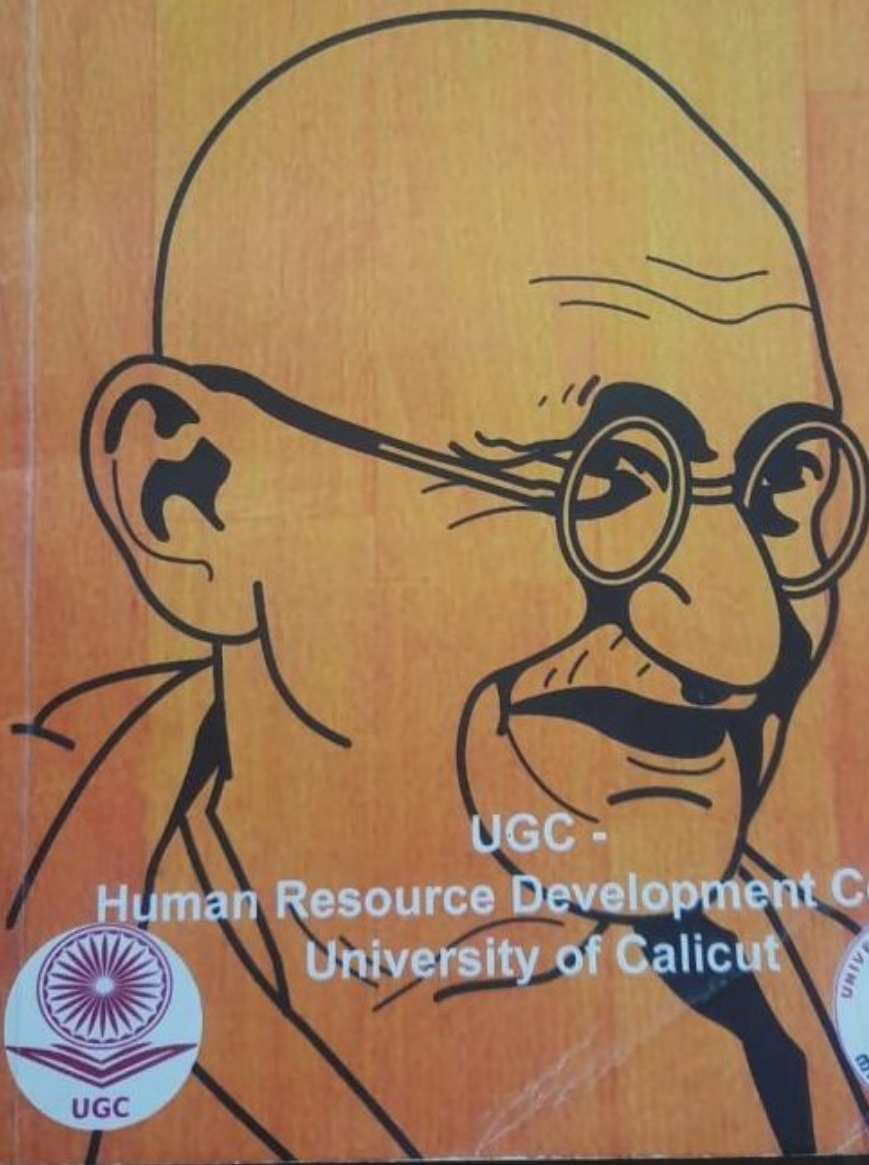
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ISBN 978-93-5300-711-9



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Sub Editor: Dr. ISMAIL. V

Published in March 2019

By UGC-HUMAN RESOURCE DEVELOPMENT CENTRE, UNIVERSITY OF CALICUT

Layout: Anish-9349177497

Cover Design: Indulekha Dezines

Printed: Indulekha Books, Kozhikode

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ISBN: 978-81-940704-0-5

Rs. 700

Copies: 1000



# Leadership Style, An Analysis through Mahatma Gandhi

Chithra .P

Assistant. Professor, P.G Department Of Commerce  
M.E.S Asmabi College, Kodungallur

## Introduction

Leadership is the art of motivating a group of people to act towards attaining a common goal. He or she is the person in the group that possesses the combination of personality and leadership skills that makes others want to follow his or her direction. Leadership style is the way a person uses power to lead other people. Research studies identified different types of leadership styles based on the character of the leader and followers. The appropriateness of the leadership styles depend on the function of the leader, the situation and the followers. Great leaders can inspire political movements and social change. They can prompt others to perform, create, and establish something new. Democratic Leadership, Autocratic Leadership, Laissez-Faire Leadership, Strategic Leadership spiritual leadership etc. are some of the examples of leadership styles

Gandhi's leadership style was considered as extremely complex. Knowing that violence only begets violence, he began practicing passive resistance, Satyagraha. Mahatma Gandhi was a leader that brought one of the world's most powerful nations to its knees... by using peace, love and integrity as his method for change. Mahathma Gandhi was not at all an academician or a sequestered visionary. He was deeply concerned with the world around him. He disclaimed being a visionary. He said: "Mere discipline cannot make leadership. The latter calls for faith and vision". The concept of Swaraj expresses the core of his vision for the citizen of India, from which the whole range of the concepts of Gandhian philosophy flows. It necessarily starts with political self-rule as a means





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First Edition: January 2019

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## PHYTOREMEDIATION POTENTIAL EVALUATION OF FOUR SELECTED AQUATIC MACROPHYTES

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**Abstract** Heavy metal pollution in the water bodies is a serious threat to the world. Phytoremediation is the better solution of this serious threat, since most of the conventional methods are less effective, time consuming and expensive when compare to phytoremediation technology. In the present research work the phytoremediation potential of four aquatic macrophytes (*Azolla pinnata* R.Br., *Lemna minor* L., *Pistia stratiotes* L., and *Salvinia molesta* D. Mitch.) were compared by studying their stress related metabolism, photosynthetic pigment content and by estimating heavy metals using atomic absorption spectrophotometry. The various physiological and biochemical parameters as well as anatomical attributes were analyzed in the selected four aquatic macrophytes growing in less polluted and highly polluted aquatic habitats. From the results it was found that, all the selected four aquatic macrophytes growing in less polluted aquatic habitat showed more dry weight percentage and less moisture percentage. The photosynthetic pigments like chlorophyll-a, chlorophyll-b and carotenoids decreased under stressed conditions. The most common stress indicating compounds like proline and MDA was also higher in the samples collected from highly polluted aquatic habitats, except in few cases. Quantification of heavy metal showed high Fe content in all samples than Mg, Mn, Zn and Cu. Fe and Mg was the heavy metals which present in all the four aquatic macrophytes under investigation. While analyzing the anatomical attributes, the major difference was seen in the measurements of air cavities and body hairs which provide them buoyancy. Even though the stress related metabolism showed certain differences among the four aquatic macrophytes, they



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First edition published in 2019 by  
The Niche Publications  
Mathilakam, Thrissur Dt.  
Kerala, India - Pin 680685  
[www.theniche.in](http://www.theniche.in)

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Co publisher : Pulitzer Books

Design & Layout : Aneesh C. S.  
Illustration : Swetha G.  
Photograph : Dr.K. H. Amitha Bachan

Research : Western Ghats Hornbill Foundation  
Support : IUCN Hornbill Specialist Group

ISBN 978-93-5351-307-8

Production by Western Ghats Hornbill Foundation  
[www.hornbillfoundation.org](http://www.hornbillfoundation.org)  
Printed in India

Type setting : Bhavitha K. N., Pearlsnet, P. Vemballur.  
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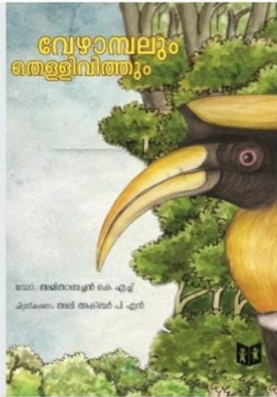




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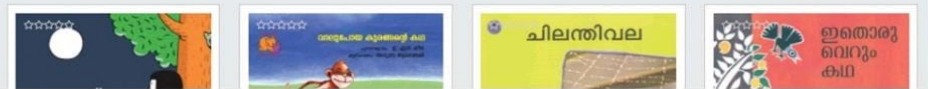
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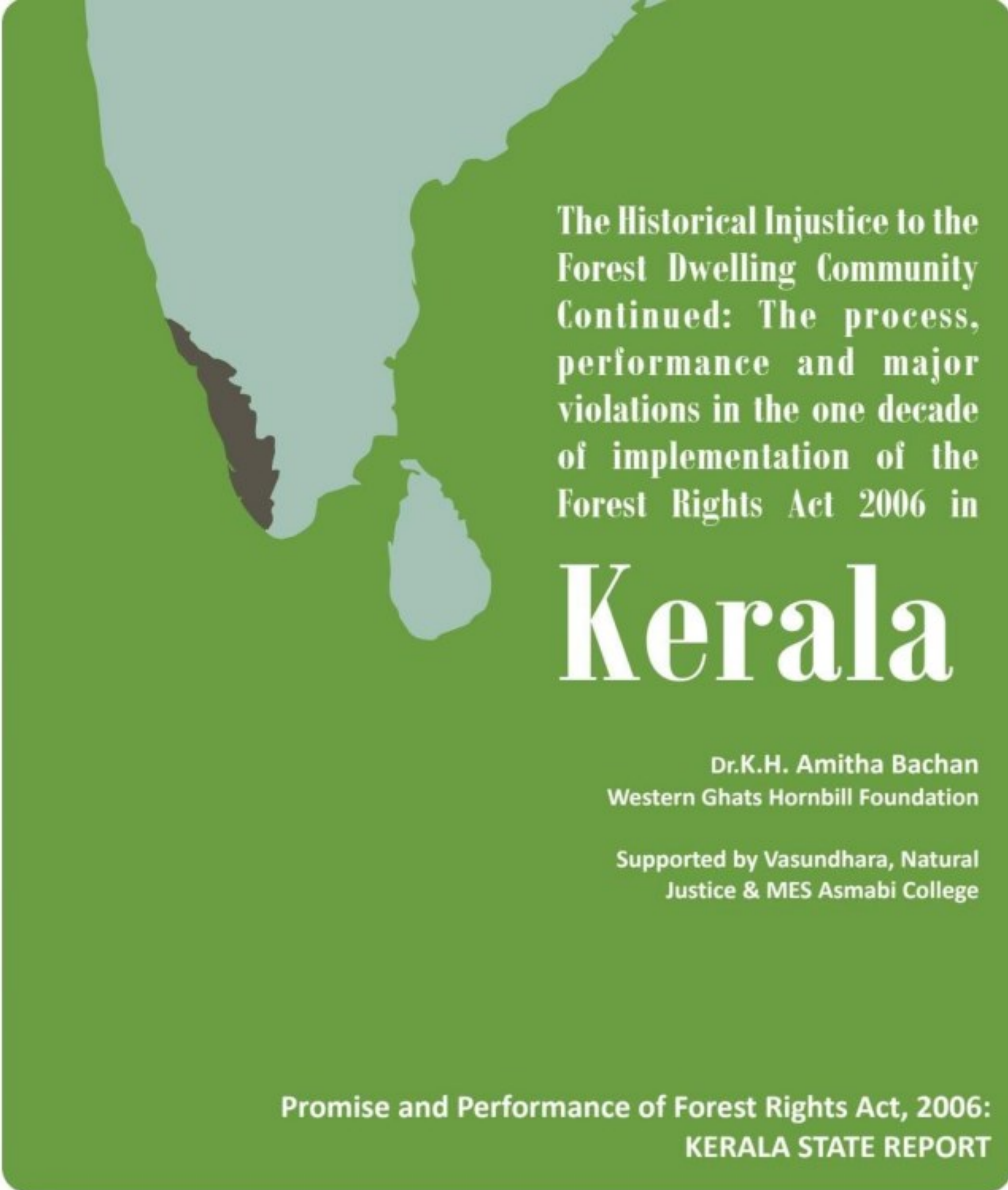
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Western Ghats Hornbill Foundation

Supported by Vasundhara, Natural  
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Promise and Performance of Forest Rights Act, 2006:  
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### **The process, performance and violations in the first decade of implementation of the Forest Rights Act 2006 in Kerala**

**Dr.K.H. Amitha Bachan**

**Western Ghats Hornbill Foundation**

**Supported by Vasundhara, Natural Justice & MES Asmabi College**

**Produced as part of Community Forest Right Learning and Advocacy process  
CFRLA, RRI**

#### **Chapter I: Introduction**

In 2006, the Indian Parliament enacted The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (hitherto referred as Forest Rights Act (FRA)), a unique emancipatory law with the potential to transform the lives and livelihoods of hundreds of millions of forest-dependent people. The law vests a number of rights over forest lands to forest dependent Scheduled tribes and other forest dwellers, including individual rights over occupied forest lands, community rights over Non Timber Forest Products (NTFP) and other forest produce and the rights to protect and manage Community Forest Resource Rights within traditional village boundaries. The most important right which has a bearing on forest governance and the welfare of tribals and forest dwellers is that of Community Forest Resource Rights.

FRA 2006, its rules 2008 as amended in 2012, is one of the best legal instruments ensuring sustainable livelihood, inclusive conservation and progressive democracy in the grassroot level with the upliftment of the forest dependent community especially Adivasis, Particularly Vulnerable Tribal Groups (PVTG) and women. The various Community Rights (CRs) including full right of the Gramasabha (GS) on Minor Forest Produces including Bamboo and Individual Forest Right (IFR), Record of Right on land of habitation and agriculture can play a great role ensuring the sustainable livelihood of forest dwelling community leading to more sustainability to the land and forest resources if implemented properly. The role of Adivasi community on forest, wildlife and biodiversity is well understood and the paradox of expelling indigenous communities out of the forest areas and increased plantation and development activities within the forest has been a centre stage of discourse for the last few decades. The CFR right is a new conservation area which empowers local communities and their heterogenic traditional practices to support conservation and forest management. The FRA visualise the Tribal Grama Sabha or (Oorukootam) village assembly with the leadership of elected 10-15 membered Forest Right Committees (FRCs) and the Community Forest Resource Management Committees (CFRMCs) as the grassroots level decision making bodies in the matters of Forest Diversion, Forest, Wildlife and Biodiversity protection and management and also the sustainable use and marketing of MFPs. This is indeed a progressive democratic step towards democratisation of the colonial forest legislation first time for independent India.

The FRA 2006 has completed ten years of its enactment and its progress in national and the local Level reflects issues of placement of actual participatory democracy, inclusive conservation and justice to the Adivasis. According to the status report on implementation of Forest Rights Act, by MoTA, GoI, till 31st January, 2017, 41,71,788 claims (40,35,513 individual and 1,36,275 community claims) have been filed and 17,83,262 titles (17,20,742 individual and 62,520 community claims) have been distributed (CFR-LA 2016). The provisions for community rights and community forest resource rights form a key component of the Forest Rights Act and recognition of these rights remain a major area of challenge in the process of implementation even after a lapse of 10 years of enactment.

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printed & published by  
**ashrafi book centre &  
tirurangadi printers**  
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After the Muslims conquered Persia and the Levant, they found libraries full of Greek books, so they translated them into Arabic. The Muslims learned many foreign languages, such as Greek and Latin, and translated the sciences therein.....

### 6. Mother's love

One of my friends invited me to spend my vacation with him in his beautiful, distant country. He lived in a small town half a day's drive from the capital. We spent it talking and laughing and enjoying the beautiful mountain views. The weather was hot in the capital. However, as we climbed the mountains, the weather moderated and became cold....

### 7. Shareh Al-Qadi

Omar bin Al-Khattab bought a horse from a Bedouin, paid him its price, then mounted on its back and set off. After a short while, a defect appeared on the horse that prevented it from running, so Omar returned it to its owner and said to him: Take your horse, for it is defective. The Bedouin said: I will not take it, O Commander of the Faithful. I sold it to you intact, and Omar said: Make an arbitrator between you and me. The man said: Shurayh bin Harith Al-Kindi will judge between us. Omar said: I am satisfied with it....

### 8. Sunshine

Shams al-Nahar is a princess and the daughter of the King of Blessings. She excelled at riding horses, playing with swords, reading books, meditating for a long time, and practicing asceticism in what is surprising and awe-inspiring. She chooses Qamar Al-Zaman as her husband, because he passed the test she set for marriage. Qamar Al-Zaman is poor and has no home or family. But he is a gentleman. He doesn't like to live with her in the palace. He asks her to leave the palace and then live with him in the air.....

### 9. Application for the job


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د/ محمد حنيف. بي

النشر الأول: ٢٠١٩م

ISBN: 978-81-939204-9-7

الطبع والنشر: مكتبة الهدى، كاليكوت

ممنوع نشر أصل أو ترجمة لهذا الكتاب أو جزء منهما بغير إذن الناشرين

٢٥/٠٧/٢٠١٩/٠٨/٥٠٠/٠١

## PREFACE

The book Maa Ajmalallugha, recommended by the University of Calicut to the students of first semester B.A/B.Sc Under Graduate Courses., not only provides the students opportunity to familiarize with the literary styles of different genre, but it also enables them to develop communicative skill in Arabic language, and especially to converse in the diverse life situations. Since every chapter is provided with adequate language exercise at the end, the book helps the readers to acquire skill for bilingual translation. As the conventional grammar teaching has given way to applied grammar, I have taken enough care to provide ample student-friendly, simple practical language proficiency tests also, which fulfills the objective of the teaching learning process. Laying sufficient emphasis on bilingual translation and common usages, the book seeks to develop the problem solving capabilities of the students in target language. It is hoped that the student as well as the teaching community would welcome the present attempt, thanks to its learner-friendly nature. However, the facilitators are requested to ensure that all exercises given in the course book are done either in the class room or by home assignments or both, however simple they might be. Blank pages for doing translation exercises have also been provided. Learners may be prompted to do these translations on their own in the given space.

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د/ عبد المجيد تي



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(قراءة في الأدب العربي الحديث)

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EDF/HKM/AR /2019/03



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It is a book named Min vahyil- adab ( Appreciating Arabic literature) which is a common course book for bachelor of arts and bachelor of science under the university of calicut. It is edited by Dr. Abdul Majeed T (Assistant professor, Farook college). It contains 8 chapters.

1. Mate - story
2. Satan wins - short story
3. Satisfaction with God's will - poem
4. My stomach is going to explode - conversation
5. Make with lemon - article
6. Oh my fellow human being - poem
7. The stranger - story
8. A trip to Malaysia - trip note

AL BASEETH  
البسيط

د/ محمد حنيف  
الأستاذ المشارك  
قسم اللغة العربية بجامعة كاليكوت



READING  
ARABIC LITERATURE  
Text Book for BSc. (LRP) Common Course 2<sup>nd</sup> Semester

This book is intended to be the text book for BSc.(LRP) Common course 1st semester of University of Calicut. The book introduces writers ranging from Kahlil Gibran, Mahmud Dervish and Nizar Qabbani among others and helps undergraduate students develop their communication skills in Arabic through studying literary samples of different genres and through situational conversations pertaining to diverse real life contexts. Each chapter is then followed by corresponding language exercises with sufficient emphasis on bilingual translation. Sufficient care has been taken to provide ample but simple language exercises in a student's friendly manner to enable the proficiency in the target language. AL BASEETH is designed in the pattern of a workbook keeping up the modern methodologies of language acquisition. The method followed here is of enabling students to learn grammar through real life like situations instead of the outdated method of teaching grammar as such.

Facilitators are requested to ensure that all exercises given in the book are done inside the class rooms themselves, however simple they might seem. Blank space for doing translation exercises are also provided. Learners may be prompted to do these translations on their own given space.

**Dr. Mohammed Haneefa P**, Associate Professor (on deputation) and Research Guide in the Department of Arabic, University of Calicut has been teaching Arabic language and literature in the university system for the last two decades, and has published widely on the areas of his research interest in various national and international journals. There are seven prescribed text books which are being taught in colleges affiliated to Kannur and Calicut universities. The books penned or edited by Mohammed Haneefa are: *Abqariyyun*, *Mikhael Nuaima: Al Adeebuthair*, *Muhadasath Youmiyya*, *Ma Murasalath*, *Al Ajnihath*, *Al Mashayirul Adabiyya*, *Ma Ajmalal-Muhavara*. He has been elected to the Boards of Studies in Arabic in various colleges during different tenures of his career in Kannur and Calicut and he has also been elected to the Faculty of Humanities and the Faculty of Languages of University of Calicut.

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## PREFACE

*Al Baseeth* is a comprehensive language skill development course with specially designed different modules for students of under graduate courses. The book acquaints the young readers with the exquisite literary styles as well as the excellent intellectual ideas of a variety of renowned writers ranging from Kahlil Gibran, the Philosopher of love, to the Palestinian national poet Mahmud Dervish and Nizar Qabbani among others and also helps undergraduate students develop their communication skills in Arabic through studying literary samples of different genres and through situational conversations pertaining to diverse real life contexts. The University of Calicut has recommended this book for the students with the objective of developing language proficiency in Arabic. Since the conventional method of grammar teaching has been replaced for applied grammar, the book has given enough space for practical language proficiency and development of fluency in Arabic speaking. I have largely adopted a learner centered approach in the organization of different modules in the book which provides the students ample practical learning experience.

Each lesson in the book is meticulously composed with such an objective, and a set of comprehensive exercises is included for enabling the learners to acquire language proficiency in both literary usage as well as verbal skill. So the facilitators are requested to ensure that all exercises given in the course book are done inside the class rooms themselves, however simple they might

Saleena Mathew · Maya Raman  
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# Fish and Fishery Products Analysis

A Theoretical and Practical Perspective

 Springer



Saleena Mathew · Maya Raman · Manjusha Kalarikkathara Parameswaran · Dhanya Pulikkottil Rajan

## Fish and Fishery Products Analysis

A Theoretical and Practical Perspective

This novel and informative book discusses the various aspects of seafood quality. The book is divided into 7 broad sections, each tackling a different aspect. The first section covers the general aspects relevant to the nutritional quality of the fish and the various extraction protocols for macro-/ micro-nutrients. The second section provides insights into handling and the principles of thermal and non-thermal processing techniques for commercially important fishery products. The quality standards and safety concerns in the seafood industry and consumption are discussed in this section. The freshness indices of the processed products including biochemical, microbiological and toxicological characteristics are also included. The third section discusses the physico-chemical characteristics and quality parameters of potable water/ ice. The fourth section includes the quality assessment of various toxicants related to seafood products. The fifth section deals with the specific aspects such as principle, instrument and procedures of conventional and novel analytical instruments relevant to the seafood industry. The sixth section deals with the seafood waste management including solid and liquid seafood wastes. Presently, there is a great awareness regarding environmental sustainable processing/ preservation techniques. The final chapter discusses the bioactive compounds from under-utilized marine sources showing pharmaceutical/ nutraceutical applications.

ISBN 978-981-32-9573-5



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ISBN 978-981-32-9573-5      ISBN 978-981-32-9574-2 (eBook)  
<https://doi.org/10.1007/978-981-32-9574-2>

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ISBN 978-981-32-9573-5      ISBN 978-981-32-9574-2 (eBook)  
<https://doi.org/10.1007/978-981-32-9574-2>

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## 1.1 Nutritional Quality of Fish

### 1.1.1 Water: The Universal Solvent

Water is the most profusely found substance in living systems, making up 70% or more of the weight of most organisms. Water is an elemental and often predominant constituent in many foods. It supports chemical reactions and also reactant in hydrolytic processes. In the food preservation point of view, the removal or binding of water hinders many reactions and therefore inhibits the growth of microorganisms and improves the shelf lives of foods. Water also contributes considerably to the texture of food because it interacts with other constituents, viz., proteins, polysaccharides, lipids, and salts.

Water forms hydrogen bonds with itself and with solutes. Hydrogen bonds between water molecules provide the cohesive forces that make water a liquid at room temperature. Water has a higher melting point, boiling point, and heat of vaporization than most other common solvents. Attractive forces between adjacent water molecules give the liquid state of water great internal cohesion. Polar biomolecules dissolve readily in water because they can substitute water-water interactions with more energetically favorable water-solute interactions. The water molecule and its ionization products, H and OH, influence the structure, self-assembly, and properties of all cellular components, including proteins, nucleic acids, and lipids. The attractive forces between water molecules and the slight tendency of water to ionize are of crucial importance to the structure and function of biomolecules.

#### 1.1.1.1 Chemistry of Water Molecule

Each hydrogen atom of a water molecule shares an electron pair with the central oxygen atom. The H-O-H bond angle is  $104.5^\circ$ , i.e.,  $5^\circ$  less than the bond angle of a perfect tetrahedron ( $109.5^\circ$ ). The nonbonding orbitals of the oxygen atom slightly compress the orbitals shared by hydrogen. The oxygen nucleus attracts electrons more strongly than does the hydrogen nucleus (i.e., the proton), and hence oxygen



---

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## 2.1 Processing of Various Fish and Seafood

Even though the nutritive value and the unique taste of seafood (fish, shell fish, mollusks, and echinoderms) have gained immense popularity in all continents, the susceptibility of these to postmortem spoilage and rapid deterioration, and hence, the shortened shelf life, is of great concern. Species, handling, and storage conditions affect the nutritional and microbial qualities of seafood. Further, two most important concerns with respect to marketing and distribution of seafood are their high perishability and poor hygienic quality. To overcome these issues, various preservation methods are being adopted where time-temperature association is the key determinant (Boziaris 2013; Mohan et al. 2008; Borda et al. 2018). Feeding habits, primary microbiological load, season, geographical origin, and handling conditions influence the shelf life of seafood. Therefore, it is decisive to have a science-based comprehension of the growth and activity of spoilage microorganisms in seafood, in order to reduce the losses and preserve the food. Hence, the chief aim of fish preservation is to delay, reduce, or inhibit the enzymatic, chemical, and microbial spoilage by managing the storage temperature, water activity, and pH or by using chemical preservatives. The preservation of seafood can be attained by conventional methods (thermal) such as chilling, drying, smoking, refrigeration or freezing, and canning or by employing novel techniques (nonthermal) such as pulsed light, high hydrostatic pressure, pulsed electric fields, ultraviolet light, high-intensity ultrasound, oscillating magnetic fields, ionizing radiation, etc. Currently, consumers are in continuous demand for minimally processed food with extended shelf life and safety assurance.

### 2.1.1 High- and Low-Thermal Preservation Techniques

High- and low-thermal preservation can be done either for short and long duration.



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Water is the most important component in fish processing industry and in ice-making. The contamination of water used in seafood industry (sources) will increase the pathogen load in fish posing a serious health hazard to the consumers. Hence, it is urgent to meet the basic requirements of the water/ice quality and should meet the drinking water standards. The World Health Organization (WHO) has issued guidelines for drinking water quality and has identified that very stringent standards cannot be used universally; and hence, a range of guideline values for more than 60 parameters were elaborated. The water/ice quality parameters have to be qualitatively and quantitatively analyzed and monitored regularly for each source of water supply such as at the point of collection (harbor) to the final use (until packaging). The qualified technicians are to perform the analysis. The water sampling and analysis should be certified by ISO-certified laboratories. The different sources of water used in seafood industry could be bore wells, municipal mains, water tanks, reservoirs, and harbor basin water. The contamination of bore wells and municipal mains may occur from corroded casings, sewage, etc. The bore well water needs to be tested every month. Similarly, the tanks and reservoirs need to be checked regularly for the residual chlorine levels. Periodic scrubbing may assist in preventing deposition. The municipal mains, water tanks, and reservoirs have to be tested half yearly. Harbor basin water has to be tested yearly, more accurately at the peak of the dry season and the wet season, when the chances of contamination are high.

The testing procedures include:

- (a) Physical tests
- (b) Chemical tests
- (c) Bacteriological tests




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### 4.1 Analysis of Food Additives

Food is inevitable to sustain life, and as a result, contaminated food becomes a very common source of toxicant exposure to humans. Several naturally occurring and synthetic contaminants find their way into food. More than 2500 chemical substances are added to foods to modify it. They are grouped under the regulatory term "food additives" and are defined as chemical substances deliberately added to foods in known quantities for purposes of assisting in the processing of foods and preservation of foods or in improving the flavor, texture, or appearance of foods. Food additives can be used directly or indirectly. Direct additives are those that are intentionally added to foods for a specific purpose, while indirect additives are those to which the food is exposed during processing, packaging, or storing. If a substance is added to a food for a specific purpose, it is referred to as a direct additive. Food additives and preservatives are used in today's food supply to prevent foodborne illness, enable the transportation of food to areas that otherwise wouldn't be possible, and for the efficient manufacture of products to consistently meet the established quality standards from batch to batch. The US Food and Drug Administration evaluates the safety of food additives and determines how they may be used in the food supply. If an additive is approved, the FDA issues regulations that may include the types of foods in which it can be used, the maximum amounts to be used, and how it should be identified on food labels. This section looks into the analysis of some of the commonly used intentional and unintentional additives.

#### 4.1.1 Synthetic Food Additives and Adulterants


Synthetic food additives can be added intentionally to food to perform certain technological purposes which consumers often take for granted. They are needed to ensure that processed food remains safe and in good condition throughout its journey from factories or industrial kitchens, during transportation to warehouses and



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## Techniques Used in Fish and Fishery Products Analysis

### 5.1 Instruments Used for Physiochemical Analysis

#### 5.1.1 pH Meter

The pH meter is an electronic device for measuring the pH (acidity or alkalinity) of a sample. It was only in 1909 that the concept of pH (hydrogen ion concentration) was introduced by Soren Peter Lauritz Sørensen and an electrode for pH measurements was realized in the year 1922 by W.S. Hughes (Nikhil et al. 2016).

##### 5.1.1.1 pH Meter Probe

The probe is a key part of the pH meter. It is a rodlike structure usually made up of glass. At the bottom of the probe, there is a bulb, which is sensitive part of a probe that contains the sensor.

The pH electrode is typically an ion-selective electrode (ISE) that responds to one specific ion in solution, the hydrogen ion. The most common forms of pH electrode are the glass electrode (Fig. 5.1a) and the combination electrode (Fig. 5.1b) which contains an inbuilt calomel reference electrode. Typical glass pH electrodes are made of thin glass porous membrane sealed at the end (the glass bubble) of a hard glass tube containing 0.1 M hydrochloric acid, into which is immersed a silver chloride-coated silver wire. The pH of the internal solution varies from 1.0 (by using 0.1 M HCl) to 7.0 (different buffers are used by different manufacturers). This silver/silver chloride electrode acts as an internal reference that generates a constant potential. The porous membrane is typically 0.1 mm thick, the outer and inner 10 nm consist of a hydrated gel layer that contains exchange-binding sites for hydrogen or sodium ions. On the inside of the membrane, the ion exchange sites are predominantly occupied by hydrogen ions from the hydrochloric acid, while on the outside, the ion exchange sites are occupied by sodium and hydrogen ions. The bulk of the membrane is a dry silicate layer in which all ion exchange sites are occupied by sodium ions. Most of the coordinated ions in both hydrated layers are free to diffuse into the surrounding solution, while hydrogen ions in the test solution can

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Waste management is a huge problem in all the realms of the world. All industries contribute to the mass of biodegradable and non-biodegradable waste, and seafood industry is no exception in this matter. Till the last decade, seafood waste found their way directly into the sewers and nearby water bodies. But the waste production in those days was not in the same scale as of today. Modern seafood industries had scaled up their production and produce much larger amounts of waste, most of which is not degradable at the rate of deposition. Hence, we must look for better technologies of waste management.

The solid waste from the industry including shells, stomach parts, and bycatches is now in huge demand by many industries. The liquid waste is always a headache with no takers. The industry management must find their own measures for getting rid of it. Most of them depend on reverse osmosis, aerobic, and anaerobic filters for purifying the wastewater.

## 6.1 Seafood Waste Disposal


Fish waste is often classified as a certified waste with high disposal cost because of high organic content (Knuckey et al. 2004). Most of the seafood processing units have effluent treatment plants (ETP) for discharging liquid waste effluents into the backwaters. In Cochin, India, alone, seafood processing units (87.5%) are depending on private contract for disposing solid waste. Solid waste is utilized for biogas production by 12.5% units. Many institutions are giving awareness programs about by-product valorization possibilities. The high nutritional quality and the possibility of by-product valorization from seafood waste have resulted in a share of the waste generated to be utilized for developing by-products. Shrimp shell waste gets a better price in the market (US dollar 1.098–1.32 per box) than finfish and cephalopod (0.77–0.88). They are mainly used for by-product development, and the major portion for by-product is contributed by cephalopod (19.4%) followed by shrimp shell (15.23%) and finfish (2.2%) waste (Sasidharan and Mathew 2011).

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Over the past several decades, scientists have given increasing attention to marine organisms and the secondary metabolites they produce. Investigations on marine natural products have focused on areas like marine nutraceuticals, biopolymers, biofilms, CNS-membrane active toxins and ion channel effectors, antifouling, anti-cancer and antiviral agents, tumor promoters, anti-inflammatory agents, as well as metabolites that control microfilament-mediated processes. The marine natural products field is encouraging a multidisciplinary approach between biologists, chemists, and pharmacologists. It is also important to note that the number of compounds reported annually is increasing steadily, indicating that marine organisms will continue to be sufficient sources of natural bioactive substances.

### 7.1 Marine Biopolymers and Derivatives

Fish processing generates solid wastes (skin, scales, and bones) that can be as high as 80% of the original raw material and are excellent sources of high value products. The utilization of fish wastes helps to eliminate harmful environmental aspects of pollution and improve quality in fish processing. An important waste reduction strategy for the industry is the recovery of marketable by-products from fish wastes. The two most important marine biopolymers collagen as well as the polysaccharide polymer, chitin, and their derivatives gelatin and chitosan, respectively, are a promising entity in this regard.

#### 7.1.1 Collagen and Gelatin

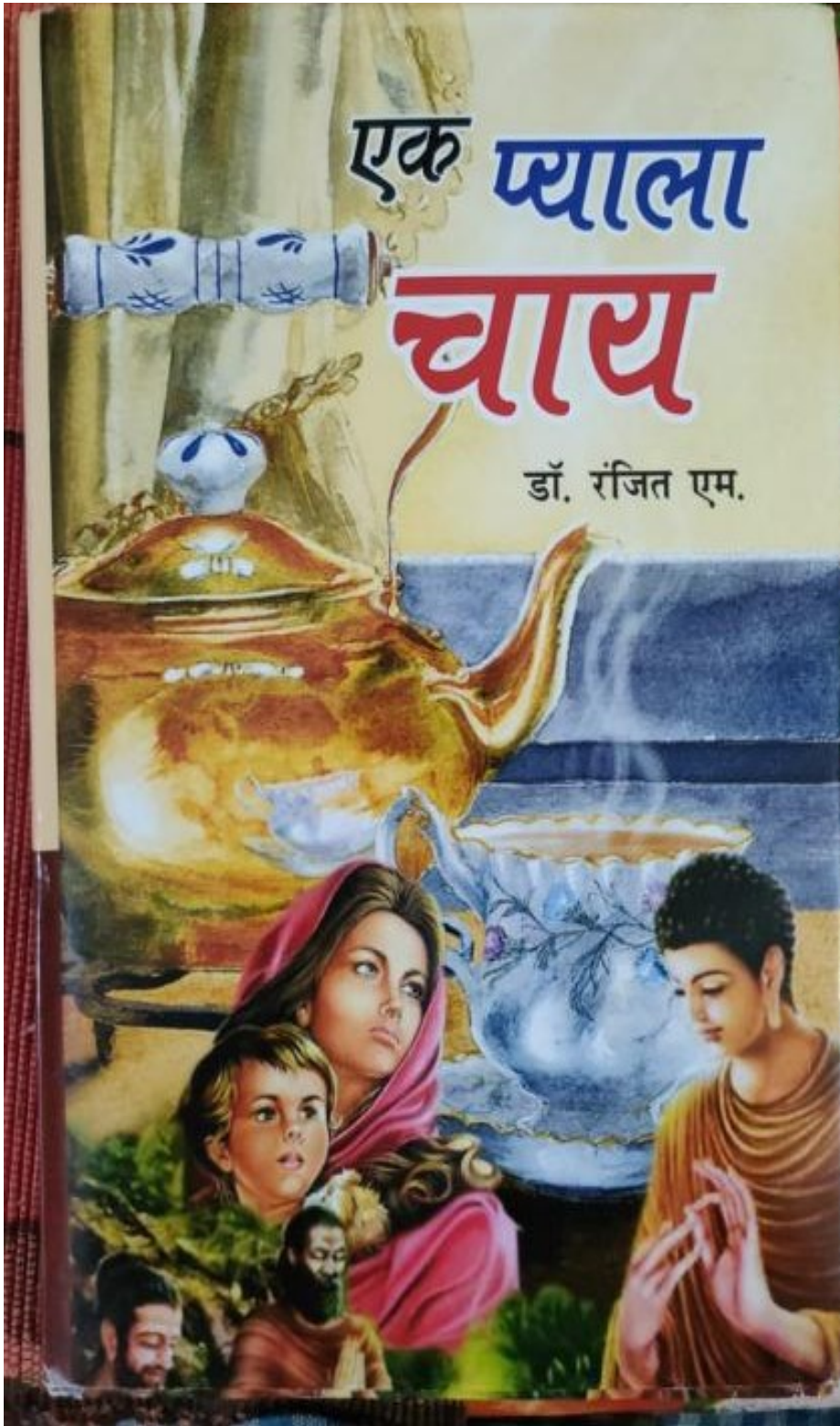
Collagen is the most abundant and ubiquitous protein in the body of almost all metazoan organisms, as a major component of extracellular matrix (Balian and Bowes 1977) and renowned as the most abundant protein in mammals, making up from 25% to 35% of the whole-body protein. Collagen in the form of elongated

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एक प्याला

चाय

डॉ. रंजित एम.



# एक प्याला चाय

अनुवाद व संकलन  
डॉ. रंजित एम.

जवाहर पुस्तकालय  
हिन्दी पुस्तक प्रकाशक एवं वितरक  
मथुरा (उ. प्र.) 281001



ISBN : 978-81-8111-116-7

© : सर्वाधिकार सुरक्षित

प्रकाशक : गोविन्द पचीरी

जवाहर पुस्तकालय

हिन्दी पुस्तक प्रकाशक एण्ड वितरक

सदर बाजार, मथुरा-281001 (उ. प्र.)

दूरभाष : 09897000951

ई-मेल : jawahar.pustakalaya@gmail.com

मूल्य : ₹ 150.00

प्रथम संस्करण : 2019

आवरण : गोविन्द पचीरी

शब्द-संयोजन : आलू कम्प्यूटर्स, शाहदरा, दिल्ली-110032

फोन नं. 09313588569

मुद्रक : जय भारत प्रेस, नवीन शाहदरा, दिल्ली-110032



**डॉ. रंजित एम.**

- जन्म** : तलशशेरी, कण्णूर (जिला), केरल
- पिता** : सी.एम. माधवन
- माता** : के.के. पद्मजा
- पत्नी** : डॉ. सूर्या बोस
- शिक्षा** : एम.ए. (हिन्दी), एम.फिल (हिन्दी)  
(कालिकट वि.वि.); बी.एड (कण्णूर  
वि.वि.); पी.जी. डिप्लोमा इन ट्रांसलेशन  
(कालिकट वि.वि.); डिप्लोमा इन हिन्दी  
(केन्द्रीय हिन्दी निदेशालय, नई दिल्ली);  
पी-एच.डी. (कालिकट वि.वि.)
- प्रकाशन** : 1. अज्ञेय के तारसप्तक  
2. हिन्दी कथा साहित्य में नारी  
3. हिन्दी सूफी काव्यों में प्रकृति-चित्रण  
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अस्माबी कॉलेज, कोडुङ्गल्लूर, त्रिशूर  
(जिला), केरल
- संपर्क** : ठषस (घर) तृक्करिप्पूर पी.ओ.,  
कासरगोड जिला-671310 (केरल)  
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ISBN 978-81-944847-6-9



9 788194 484769

Price : 68/-

Calicut - Malappuram - Thrissure - Kannur - Manjeri - Perinthalmanna - Thalappara - Tirurangadi - Thodayad



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first edition: June 2020

printed & published by

**ashrafi book centre &**

**tirurangadi printers**

tirurangadi, Tel: 0494 2460395

distributed by:

**edumart**

calicut, malappuram

trivandrum, thrissur

thalappara, manjeri

**tirurangadi book stall**

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BA/BSc Third Semester  
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### 1. From Quran

Qarun was one of the people of Moses. He believed in Moses, read the Torah and improved it. God gave him a lot of money to test him. But he was a hypocrite and refused to pay zakat. He did not end with this, but rather incited the Children of Israel to disbelief and disobedience and accused Moses of adultery. He called a prostitute and gave her a lot of money to slander Moses. But it was announced that she had come on the orders of Qarun, and Moses had not committed adultery with her. Moses became angry and called upon God, his Lord, to punish him, so God caused the earth to swallow him and his money

### 2. Hadiths

1. An action is not valid except with intention, and a person receives benefits and harm from his action according to his intention

2. Ihsan is for the servant to obey his Lord sincerely, submissively, and humbly as if he were seeing Him. Because God is aware of his secret and his revelation

### 3. The sweetness of honey

It is said that a man was walking in the jungles of Africa, where the nature is picturesque and where tall trees grow, due to its location on the equator. He enjoyed the view of the trees blocking the sun's rays due to their density, enjoyed the singing of birds, and inhaled the fragrance of the flowers that produced pleasant scents.....

### 4. Abu wada's marriage

Abu Wada'ah said: I used to frequent the mosque of the Messenger of God in pursuit of knowledge. I used to go to Saeed bin Al-Musayyab's group, and people would crowd there with horseshoes... Then I was absent from the Sheikh's group for days, so he checked on me and thought that I was sick, or had a symptom... So he asked those around him about me, but he did not find any news from any of them.

### 5. Macbeth- William Shakespeare

First scene

### 6. Motherland

But it is time to forget people's hatred. He builds a structure on the basis of brotherhood. But it is time for the disappointment to be cast aside. You gain honor by supporting nations....

### 7. Why did you complain?

How often do you complain and say: You are destitute? The earth is yours, the sky and the stars are yours, and the fields, their flowers, and their fragrance are yours.

### 8. The art of speech

Man, as they say, is a talking animal. Speech is not to come out and describe speech, but rather to know how to speak, and perhaps a word enters Paradise, and a word enters Hell, and a word is saved from killing, and a word pushes its owner to killing.....

### 9. Happiness makers

Chinese legend tells us that an old man wanted to know the difference between happy people and unhappy people, so he went and asked one of the wise men, saying: Will you tell me what is the difference between happy people and unhappy people? She led the sage to a large palace. As soon as he went down to the hall, he saw many people with tables full of delicious food spread out in front of them. Their bodies were thin, and signs of hunger appeared on their features. Each of them was holding a huge spoon, four meters long, but they could not eat. So the sheikh said to the sage. : I knew these people: they are the unfortunate ones

### 10. The art of diction

Delivering is the art of addressing the audience and influencing them, and we have expressed it with the word art because it can be developed with effort, and actual practice becomes a skill. Addressing the audience is with spoken words and influencing them is with sincere emotions, feelings, and feelings. Art in this is accompanied by expressive looks, clear movements, influential suggestions, and auxiliary means

# **BIODIVERSITY FOR CLIMATE RESILIENCE**

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# **Biodiversity for Climate Resilience**

[This book is a compilation of the papers presented as part of the 1<sup>st</sup> Kerala State Biodiversity Congress held during 2018]



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## **Published By**

Member Secretary  
Kerala State Biodiversity Board

**ISBN: 978-81-934231-2-7**

Citation:

Joshi, S.C., Balakrishnan, V. and Preetha, N. (Eds.), Biodiversity for Climate Resilience. Kerala State Biodiversity Board, Thiruvananthapuram.

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# **ECORESTORATION AND BIODIVERSITY CONSERVATION OF RIPARIAN FORESTS ALONG THE CHALAKKUDY RIVER, SOUTHERN WESTERN GHATS**

**Amitha Bachan K.H<sup>1</sup> and Pooja Suresh<sup>2</sup>**

<sup>1</sup> Assi. Prof & Research Guide, Research Department of Botany MES Asmabi College & Founder member Western Ghats Hornbill Foundation

<sup>2</sup> PhD Fellow, Research Department of Botany MES Asmabi College

## **ABSTRACT**

This article elucidates the studies and conservation intervention on the Riparian Forests and vegetation along the Chalakkudy River in the Anamalai part of Southern Western Ghats as a pioneering work in India. A methodology developed through the process has been used for understanding heterogenic community composition along bioclimatic gradient useful for classification and ecorestoration. The methodology has application in other forest and wetland ecosystems and is being applied in collaboration with various state agencies including Kerala State Landuse Board, Kerala Forest Department and Kerala State Biodiversity Board. The ecorestoration protocol prepared in detail for Chalakkudy River has been added to the working plan of the Forest Department in the Vazhachal Forest Division.

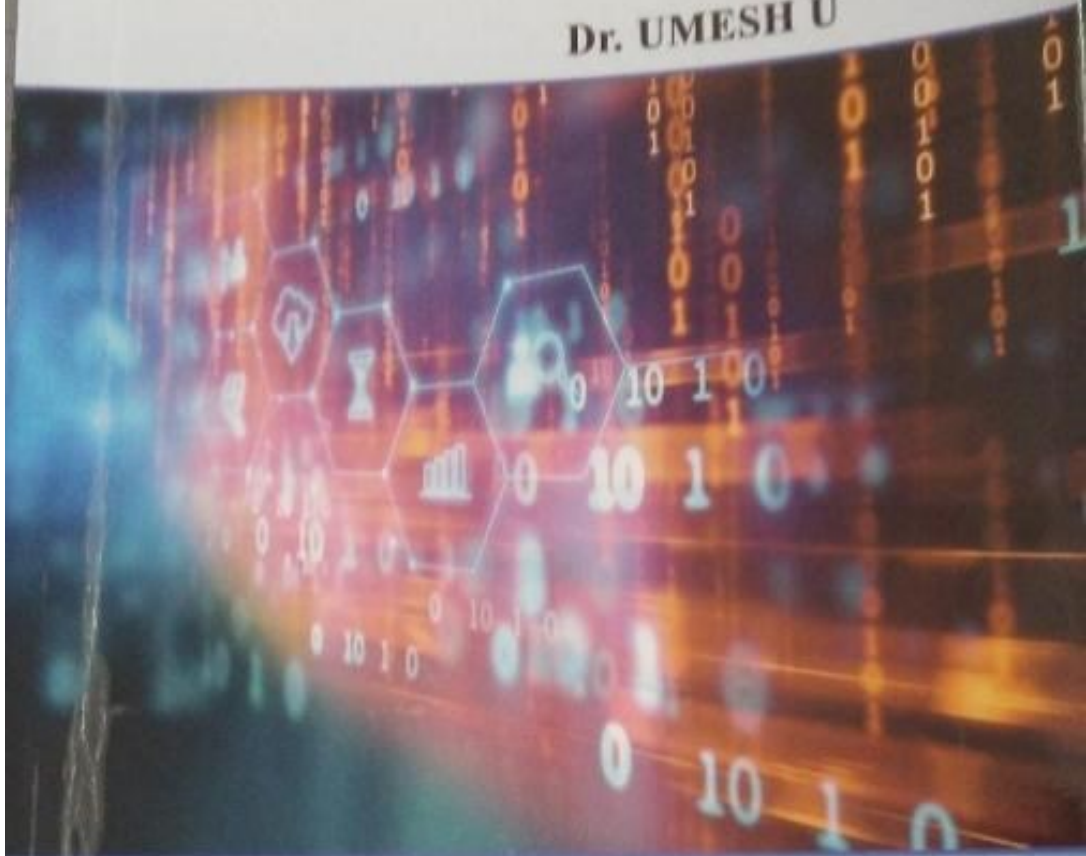
## **INTRODUCTION**

Chalakkudy River is the fifth longest and most fish diverse river in Kerala (NBFGR, 2000). The river is originating from the Anamalai landscape unit of southern Western Ghats covering Nelliampathy, Parambikulam valley, Valparai- Malkkaraipalattu, Sholayar valley and Vazhachal- Athirappilly forests. The rich fish diversity in the river is a reflection of availability of different bioclimatic regimes (Dry Deciduous, Moist Deciduous, Wet Evergreen, Evergreen, Dry Evergreen, Semi evergreen, Low elevation evergreen) and availability of river stretches in 6-7 altitudinal planes with good amount of Riparian vegetation and riverine micro habitat (Bachan et al., 2014).

The catchment forests of Chalakkudy River within the Anamalais considered as one of the hottest hotspot (Nayar, 1996; Bawa et al., 2007) in terms of biodiversity with in the Western Ghats Sri Lanka biodiversity hotspot. The riparian forest along the river is very unique in its structure and floristic composition with good number of endemic and threatened flora and fauna (Bachan and Pradeep, 2015) the low elevation evergreen riparian forests in the Vazhachal - Athirappilly region (50-350m Elevation) has been recognised as unique ecosystem because of unavailability of similar vegetation across the Western Ghats (Bachan, 2010; Bachan and Pradeep, 2015). The presence of true evergreen flora, nesting of three Hornbills especially Great hornbills, Malabar Pied Hornbills and many endemic and endangered flora and fauna indicates its biological significance.

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**Book Name: EMERGING TRENDS IN COMMERCE & MANAGEMENT**

**Editor: Dr. UMESH U**

**ISBN: "978- 93- 89507- 39-3"**

**Edition: First**

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**CASHLESS ECONOMY IN RURAL KERALA:  
WITH SPECIAL REFERENCE TO KADUKUTTY (RURAL)  
GRAMA PANCHAYAT, CHALAKUDY**

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**ABSTRACT**

*India would like to be a cashless economy to reduce black money and fake currency. It is also useful to control tax avoidance. This paper is motivated by knowing the status of cashless economy rural area of India. The objective of the study is to know the public perception about the concept of cashless economy and try to understand the financial status, literacy in education, finance and technology of rural Kerala. Descriptive study has been done in rural Kerala by using percentage analysis and descriptive statistics like mean score. It also focuses on to know gender difference among Kerala rural people about the worriness of becoming cashless economy. Here 186 people are selected to make this study in a most effective way and suggests that what are the points to take into consideration to assure the wide spread of cashless economy in the rural areas of Kerala. It is also found out that there are no gender differences about the cashless economy by doing t-test.*

**Keywords:** *Cashless economy, Rural Kerala, India, financial literacy, financial inclusion, online banking, technology in banking.*

**1 INTRODUCTION**

Cash is like blood in our human body, a basic necessity without which survival is a problem. As a whole, about 85% payments are made in cash because of the flexibility of the notes and coins. The digital era always introduces new methods of payment system at the time. A report by Boston Consulting Group (BCG) and Google India revealed that last year around 75 per cent of transactions in India were cash-based, while in developed nations such as the US, Japan, France, Germany etc. it was around 20-25 per cent. Government of India pointed out the importance of cashless economy to overcome terrorism and other illegal activities. Cashless leads India to move



# CRIME AGAINST WOMEN

Editor

**Dr. Asha Elizabeth Thomas**



**ST. PAUL'S COLLEGE KALAMASSERY**

(NAAC RE-ACCREDITED WITH 'A' GRADE AND ISO CERTIFIED INSTITUTION)

MARCH 2020

WITH THE SUPPORT OF  
NATIONAL COMMISSION FOR WOMEN

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**NATIONAL COMMISSION FOR WOMEN**

Contemplations on 'Crime against Women'- Collection of Peer Reviewed Articles presented in the 'Two Day National Seminar on Crime against Women: Technology and Crime against Women' organized by St. Paul's College, Kalamassery with the support of National Commission for Women on January 13-14, 2020.

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First Published in March 2020

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Kochi-683503  
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*Printed in India at*

Indu Offset Printers,  
University Road, Alfiya Nagar, South Kalamassery,  
Kalamassery, Ernakulam, Kerala 680104

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Price: Rs. 500/-  
ISBN: 978-93-5407-091-4

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# **DOMESTIC VIOLENCE AGAINST WOMEN**

**Ms. Shiney C N**

**Ms. Hafla Ahammad Habeeb**

## **Introduction**

Violence against women, materialization of a historic unequal power relation between sexes is a form of discrimination and mistreatment of women which results in physical, psychological and socio-economic costs to women and society as well. Violence implies destruction, anger and pain while family suggested the qualities of caring, love and joy. Domestic violence occurs at all familial level-between couples, siblings, in parent-child relationship, and often times, dating relationships. Women and girls face violence at home, in school, on the street, at work, on public transportation and online. They experience violence in times of peace and times of conflict or war.

## **Objective of the Study**

- a) To assess the level of domestic violence suffered by the women in Kodungallur taluk.
- b) To analyze the major factors that causes domestic violence.
- c) To know the reason for compromise in domestic violence.

## **Statement of the Problem**

Of all the crimes against women, domestic violence is the most important. All the time women suffered from discrimination, oppression, exploitation, degradation, aggression and humiliations not only from their family members but also from the society. Only when the family and society are democratized, the status of women is strengthened. Women should be considered as equal to men not only at public places but also at their own home. They should have adequate control over their own resources.



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First Published in March 2020

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*Printed in India at*  
Indu Offset Printers,  
University Road, Alfiya Nagar, South Kalamassery,  
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# **AWARENESS AND PERCEPTION ON DIGITAL SAFETY AND SECURITY AMONG INTERNET USERS WITH REFERENCE TO GIRL STUDENTS**

**Ms. Deepa K A**

**Ms. Athira A A**

## **Introduction**

In recent years the usage of internet technologies has expanded and for most people the internet is a very present factor in everyday life. Internet has become a part of our children's daily activities at home and at school. The benefits of the Internet for children are huge and include education and entertainment. However, the same technologies also pose some risks that parents need to identify and guard against. A lack of awareness can cause children to encounter serious danger and become victims of Internet criminals.

As the internet usage by the children and teenagers increases, so do the concerns about their online safety. Providing a safe environment requires an in-depth understanding of the types and prevalence of online risks young internet users face, as well as of the solutions most effective in mitigating these risks. Despite the very significant amount of research that has been conducted regarding these risks, improving child/youth internet safety remains a challenge. The perception of online risks for young people is often attributed to adult predators, whereas studies show that cyberbullies are likely to be in the same age group as their victims (Whitaker and Bushman, 2009).

There are many concerns for the safety of young people accessing the internet for social networking purposes. While the internet offers many benefits and opportunities for adolescents, it is also the source of many potential threats, including exposure to



# साहित्य की आँखों से पर्यावरण की झलक



संपादक

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संपादक

डॉ. रंजित एम् • डॉ. सूर्या बोस

जवाहर पुस्तकालय

हिन्दी पुस्तक प्रकाशक एवं वितरक

मथुरा-281001(उ.प्र.)

ISBN : 978-81-946862-3-1

© : सर्वाधिकार सुरक्षित

प्रकाशक : गोविन्द पचौरी

जवाहर पुस्तकालय

हिन्दी पुस्तक प्रकाशक एवं वितरक

सदर बाजार, मथुरा-281001 (उ.प्र.)

दूरभाष : 09897000951

ई-मेल : [jawahar.pustakalaya@gmail.com](mailto:jawahar.pustakalaya@gmail.com)

मूल्य : 250.00 (दो सौ पचास रुपये मात्र)

प्रथम संस्करण : 2020

आवरण : विनीत शर्मा

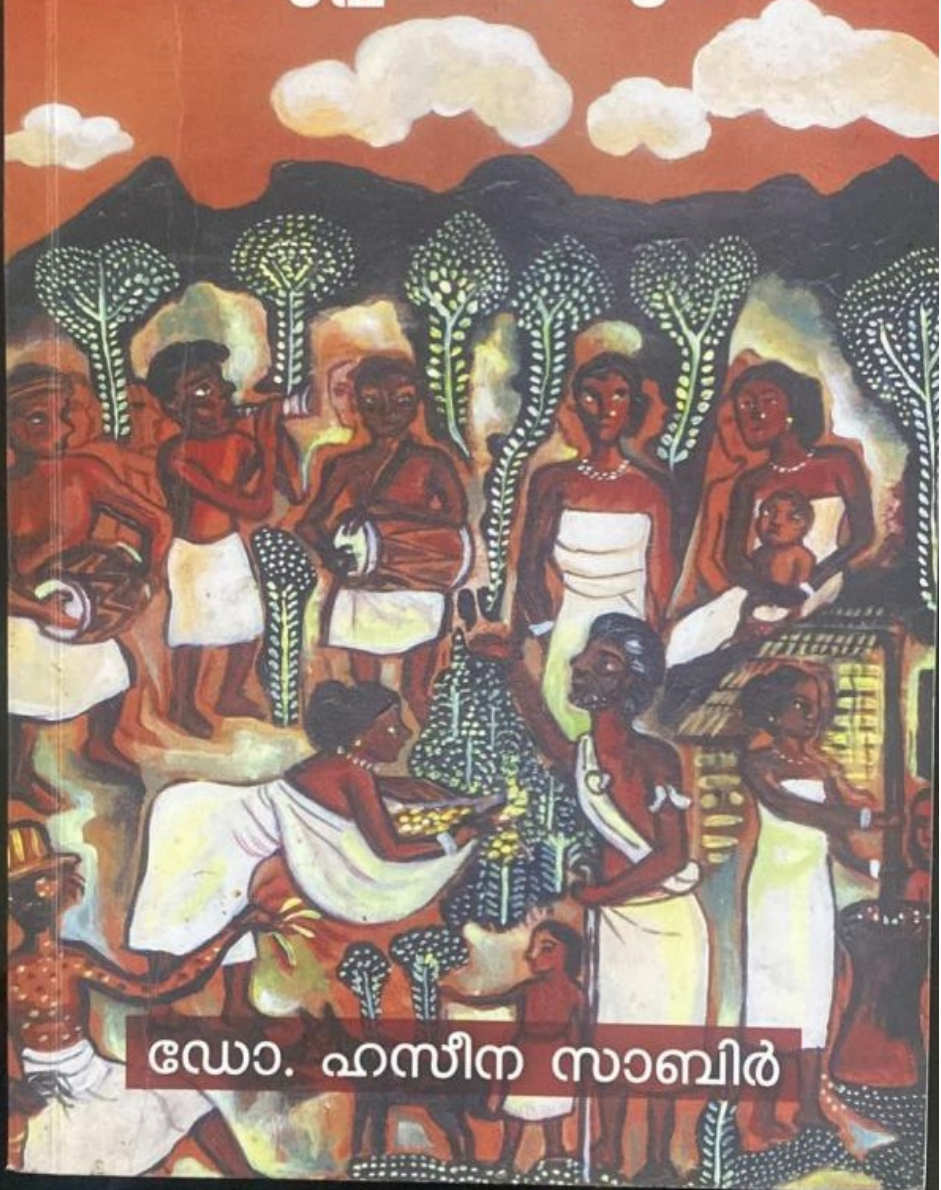
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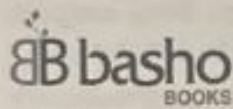


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Malayalam  
(Indian)

Aadhivasi Jeevitham Attappadiyiloode/Dr. Haseena Sabir  
(Study)

First Edition: **January 2020**  
ISBN: 978-81-942528-6-3

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Cover Painting: Sheeja Pallam  
Cover Design: Nishan  
Printing: Printoutvilla, Makkam, Calicut

Publishers: **Basho Books**  
1<sup>st</sup> Floor, Metro Building, Chinthavalappu, Ram Mohan Road  
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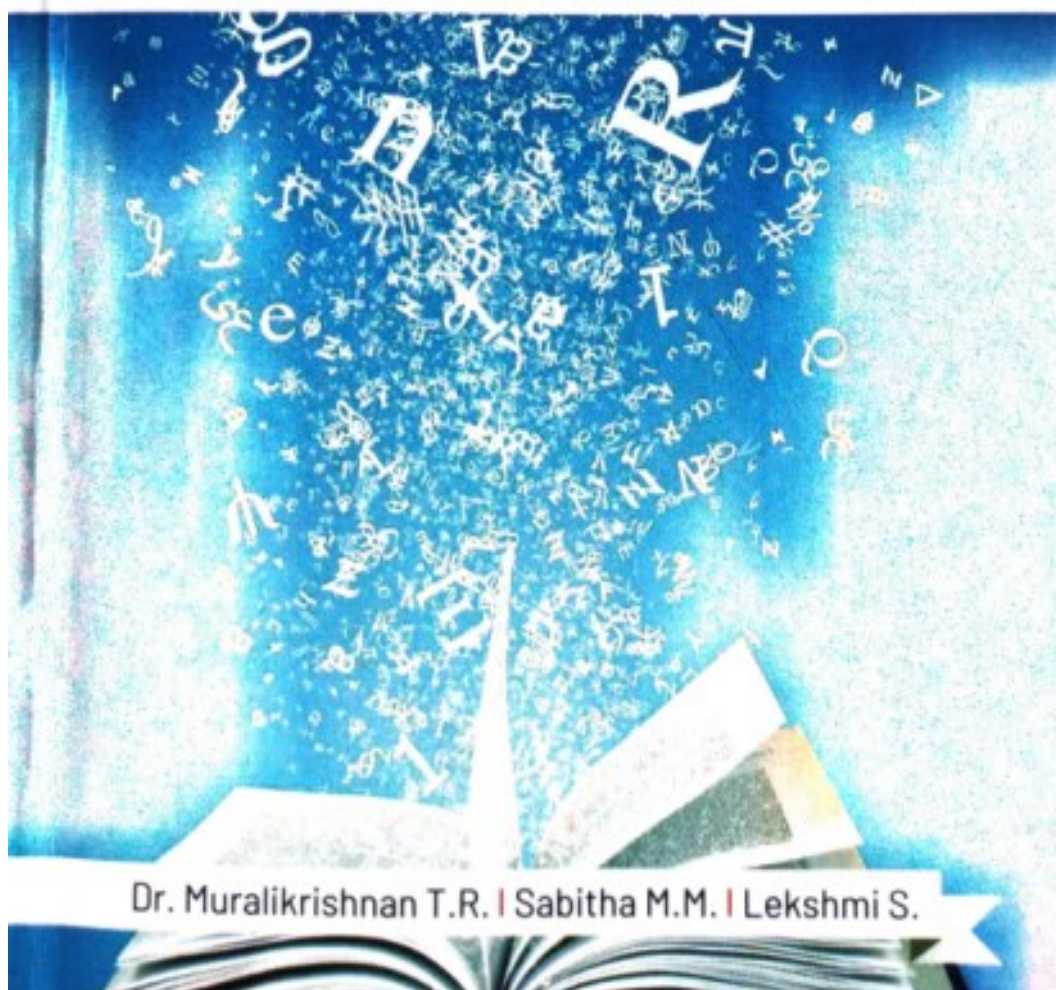
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Calicut University Edition  
Published in July 2022

Cover: Asuthosh V.  
Typesetting : Laly Francis K.

© UNIVERSITY OF CALICUT  
Printed at Calicut University Press

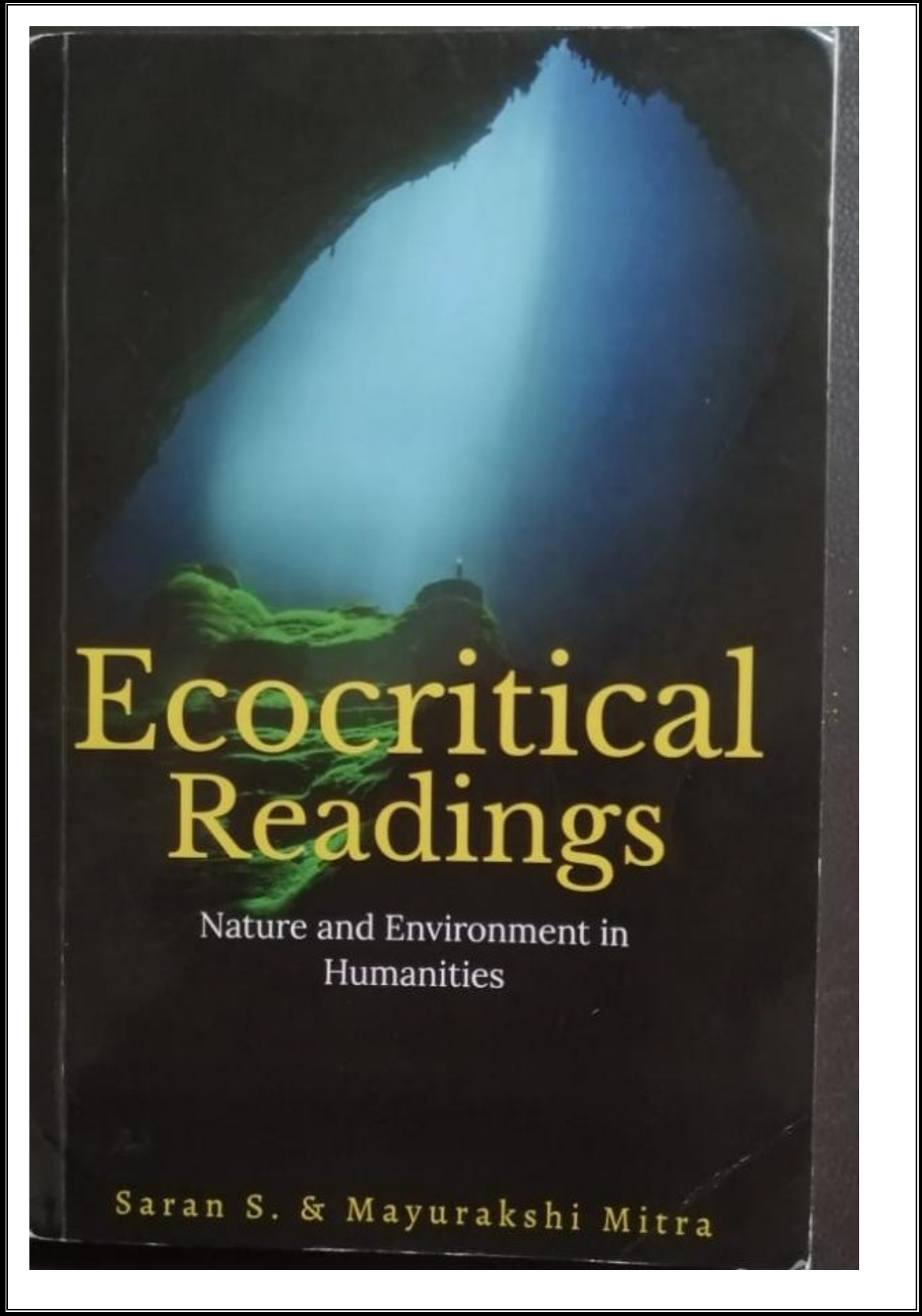
Price: Rs. 150/-

ISBN 978-81-953846-3-1

Published by Omprakash V., Publication Officer, University of Calicut.

CUP/3045/22/75000/PUB





# Ecocritical Readings

Nature and Environment in  
Humanities

Saran S. & Mayurakshi Mitra

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## CHAPTER IX

# Framing Realism and Magical Realism as Means to the Emergence of Women as Empowered Beings: A Study in Relation to Thappad and Bulbbul

Sinsy Siddiq

Assistant professor, Department of English  
M. E. S. Asmabi College, Trichur

### Abstract

Anubhav Sinha, director of the movie 'Thappad' is also a producer and writer well known for a handful of good movies. The movie underlies the fact that each woman has an identity of her own which cannot be intruded and banished. They have all freedom to fight for their rights in a country like India. Bollywood has brought about several strong characters out of women which include historical figures like 'Padmavat' to ordinary women like in 'Pink'. The director of 'Bulbbul' a lady herself is an Indian dialogue writer, lyricist, screenplay writer and story writer. Clearly portraying a woman's journey from innocence to strength and courage, she could get a good and effective output from the movie. These two movies embedded with the theories of realism and magical realism in this particular feature. To show how reality is different from magical world in which many women are still stuck and cannot find their way outside.

**Keywords:** realism, magical realism, women empowerment, sexual harassment.

• • •

Women, considered as one of the weak strata of the society has always been drawn towards the 'dim light'

Ecocriticism is an inclusionary term that is most commonly used to refer to environmentally oriented study of literature, art and other media. Life with the harmony of nature and environment is an integral part of human life. Many ancient cultures have advocated life in harmony with environment. Many of the rituals i.e. the worship of trees, animals, forests, rivers, and the sun, and considering the earth itself as Mother Goddess may seem meaningless in this modern era. But these rituals and culture have connected humans with environment from ancient ages. It tries to bring a balance between shallow ecology or anthropocentric approach that advocates conservation of nature and natural resources as against deep ecology that advocates preservation of nature. In the last few decades, this theory has grabbed the attention of scholars and has proved itself to be an interesting field of investigation in literature. It becomes essential to the human being, as the readers of literature, to know the theory and the various fields involved in it. Human life can neither be away from the environment nor from the literature. The theory 'ecocriticism' reflects on the relationship between environment and human life.

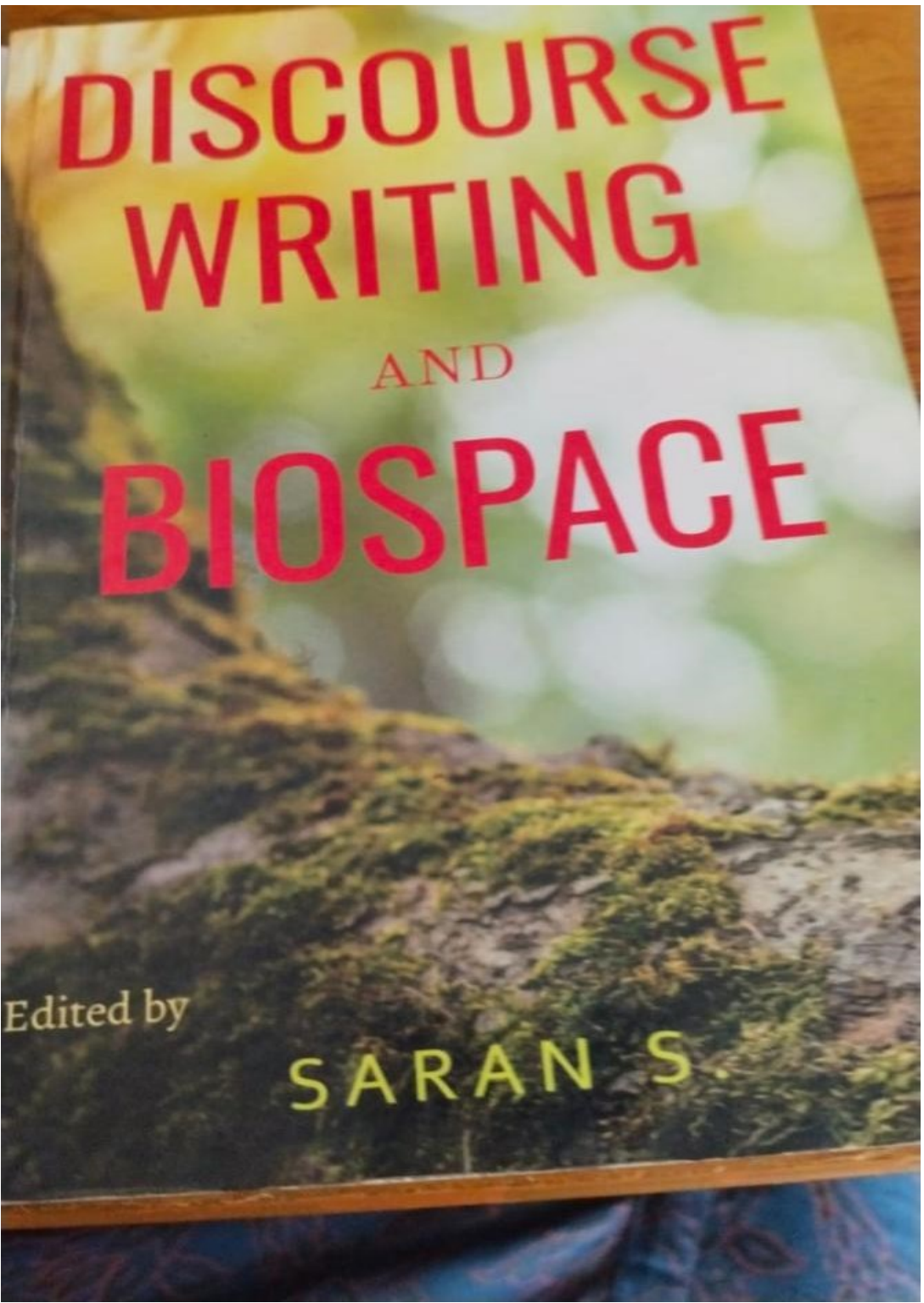
**Saran S.  
Mayurakshi Mitra**

**Edit Academic**  
May 2021

Price Rs 650.00  
ISBN 978-1-63904-406-1







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## Djinn as Elements of Horror and Fantasy in Films: Existential Crisis and Portrayal

Sinsy Siddiq  
Assistant Professor, Department of English  
M. E. S. Asmabi College, Trichur

### Abstract

In the Beginning, Three were Created...

Man made of Clay.

Angels made of Light.

And a Third ... made of Fire.

In modern age, the all powerful and mastering creation called MAN has altogether forgotten an existence on earth called the 'jinn'. They are constantly indulging with the concept of angels though. Made of smokeless fire, as believed in myths, the jinn continued to influence the species of man in a way; good or mean. Wild imaginations and fantasies regarding man and angels have immersed so much into our thoughts that the existence of the third creation has been nearly wiped off into oblivion. The fact should not be forgotten that they cross our paths quite in unusually usual ways, not making evident their presence. But do not be carried off by a slight shiver or goose bumps travelling through your body; the race exists but not without any intension on earth.

**Keywords:** Djinn, fantasy, magical realism, hallucination, horror.

• • •

Jinn (meaning spirit or demon, depending on source) are meant to be supernatural creatures in Islamic Mythology. Like humans, they are believed to be created by natural conception; neither born as believers nor as unbelievers, but their dispositions depends solely on either God's guidance or human influencers or black



The book "Discourse, Writing and Bio-Space" gives a meta-analysis of writing and writing pedagogy theory and research, distinguishing discourses in Media Literacy and Identity, Geospatial humanities, Digital Humanities, Media Ethics, Communication for Development, Governance and Policy Making, Post-Covid Digital Era, Feminism and New-Feminism, Film Theory, Eco-critical Studies, ICT and ELT and Cultural Studies. It introduces and describes a framework for analysing educational data regarding writing pedagogy in which linkages are formed between perspectives on language, perspectives on writing, perspectives on learning to write, perspectives on teaching writing, and perspectives on writing evaluation. A core notion that writing consists of applying knowledge of a set of linguistic patterns and rules for sound-symbol interactions and sentence formation underpins much of literacy education policy and practise. At its most extreme, this is the view that writing is a single, context-free activity in which all writing follows the same patterns and principles regardless of text type.

Edited by  
**Saran S.**

**Edit Academic**<sub>4</sub>  
July 2021

Price Rs 700.00  
ISBN 978-1-63940-739-2





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Compiled By

*Shivangi Jaiswal*

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## **Realizing the Basal: The Pandemic Impact**

Though she was a firm believer, her concept of God was not acceptable to the family. It was a traditional Hindu family that performed routine temple visits, holy rites, usual chanting and fasting. For her evening is the time she got to work hard for her studies and do her daily chores. She was used to abstain from the evening temple visits as it spoiled her whole day. Can the loud reciting bring sanctity to soul or peace to the mind? For her, the perfect homework for the next day enabled her to work for a better tomorrow. One needs to be loyal to the customary practices in the family, otherwise the family muse would not stand with her at the time of crisis. For the rhetorical question, can anyone stand with one's inner self at any crucial juncture, the answer is an emphatic 'no.'

Self-help and appreciation are the best things one can do for inner peace; on the other hand, this will lead to genuine humane feelings discarding the mundane performances. At that time the lockdown was declared as an impact of Covid 19. With the other shutting downs, places of worship were also closed. That which was lost by the family members by not going for these regular visits was the darkness that covered the mind, though occasional visits turn out to be good to eliminate the negativity as believed by her. Thus, she got perfect opportunity to go back to her real self, read and understand a lot along with the family. The period taught that worship of God need not be displayed, but can be done in mind, for such people work itself is worship. She counted these among the very few benefits of the pandemic period.



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# **Livelihood Status of the Tribal Women**

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1/9944, UG/Floor, Gali No. 3A,  
West Gorakh Park, Shahdara, Delhi - 110032  
Mob:- 9871454987  
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*First edition: 2021*

*ISBN No. 978-93-8911-747-9*

**PRINTED IN INDIA**

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**Priming mediated biotic stress tolerance in *Curcuma longa* L.**T.R. Athira<sup>1</sup> and K.C. Jisha<sup>2</sup>

*PG and Research Department of Botany, M.E.S Asmabi College, P. Vemballur, Kodungalhur, Kerala, India*

Seed priming is an effective method to enhance germination and growth under stressful conditions. The effects of different rhizome priming techniques namely Hydropriming, Halopriming and Chemical priming on the emergence, growth, and resistance in *Curcuma longa* L. were investigated in this study. In this study, the most effective reagents were used, together with pre-optimized concentrations based on early studies. Three different turmeric varieties, namely Prabha, Prathibha, and Pragati were primed and allowed to grow in grow bags along with the control rhizomes. Rhizomes were treated with 250Mm NaCl for 12 hours during halopriming. Rhizomes were hydro-primed for 12 hours using distilled water. Chemical priming involves treating the rhizome with different concentrations of potassium nitrate [50Mm, 100Mm, 150Mm, 200Mm, 250Mm, 300Mm]. Rhizome primed with 200Mm KNO<sub>3</sub> showed the highest growth rate. They also showed the highest chlorophyll content. Moreover, the overall growth of plants is enhanced due to the seed-priming treatments. Proline concentration was significantly higher in KNO<sub>3</sub> primed plants and MDA content was higher in the halo primed variety. Proline levels increase in the turmeric leaves in response to increased stress conditions and help in stress tolerance. Most halo and hydro-primed plants are disease-prone however, no disease has been found in the KNO<sub>3</sub> primed plants. As a result, chemical priming provides greater disease resistance than other primed plants. The present study suggested that chemical priming with potassium nitrate is an alternative and more effective method to increase tolerance in turmeric varieties when exposed to different biotic stress conditions.

**Keywords:** Turmeric; Hydropriming, Halopriming, Chemical priming, growth parameters, Disease resistance



**Proceedings of the International Conference on Plant Physiology & Biochemistry**

Edited and Compiled by  
Sinilal B., Dintu K.P. and Sofia S.

Cover design by Sinilal B.



Published by  
The Department of Botany Fatima  
Mata National College Kollam,  
Kerala, India - 691001

ISBN:978-81-950724-9-1

First Published in India 2022

This book reproduces the Proceedings of the International Seminar on Plant Physiology & Biochemistry conducted on January 19th and 20th of the year 2022. Abstracts of the presentations are given as per the schedule of the conference.

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Edition 1st Edition

First Published 2022

Imprint CRC Press

Pages 24

eBook ISBN 9781003043522

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Book Editor(s): Sanjeev Sharma, Pardeep Singh

First published: 24 September 2021 | <https://doi.org/10.1002/9781119692621.ch3>

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Summary

Wetlands are land areas that are completely filled with water, either throughout the year or in some seasons. Wetlands include swamps, marshes, bogs, and fens. Wetlands usually have a rich and distinct ecosystem because of the presence of water and a diverse group of land and aquatic flora. Wetlands serve as a home for many endangered plants and animals and hence these wetlands are very important to the world. Wetlands serve many essential functions like water purification, groundwater recharge, flood control, breeding ground, and shelter for many plants and animals, etc. Moreover, wetlands constitute a highly valuable ecosystem in the biosphere due to the richness of diverse flora and fauna. But, sadly, many of the world's wetlands are degrading due to anthropogenic activities. In this review, various ecological implications of wetlands are

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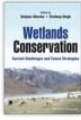
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Editor(s): Sanjeev Sharma, Pardeep Singh

First published: 5 October 2021

Print ISBN: 9781119692683 | Online ISBN: 9781119692621

| DOI: 10.1002/9781119692621

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## BIO-PRIMING: A REVOLUTIONARY THOUGHT AGAINST CHEMICALS-BASED CROP IMPROVEMENT

**Sumitha Thomas and Jisha K.C.\***

Research & Post Graduate Department of Botany, MES  
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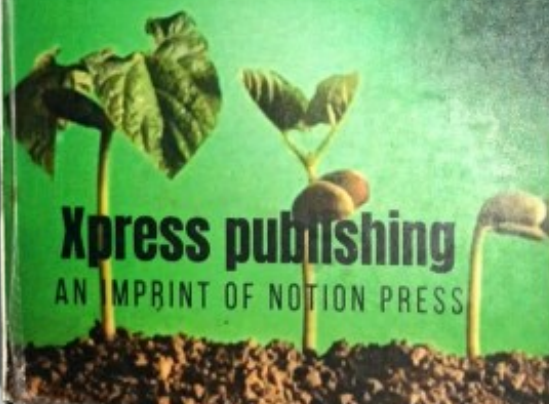
**Abstract-** The ideal methodology that can be used for rendering resistance to plants against various stressful situations is priming. In priming, physiological state of seeds can be changed by treating with various priming agents like water, chemical and biological organisms. Various microorganisms including plant growth promoting bacteria and fungi are successfully used for bio-priming in plants. Because of the eco-friendly nature of bio-priming, it becomes an apt method that can be practiced for the future for stress alleviation in crops. It imparts both abiotic and biotic stress tolerance in plants. Agriculture sector has been dramatically depending on the chemical pesticides and fungicides for eradicate pathogenic attacks. Bio-priming is a promising strategy for imparting various biotic/abiotic stresses thus paving way for the removal of chemicals from crop protection.

**Introduction -** The incipient object of an agricultural sector is the better establishment of crop in a cost-effective method. For many years researches have been investigating to improve the crop production for achieving sufficient food for the future generations (Singh et al. 2016.). Abiotic stress remains the greatest constrain to crop production worldwide. It has been projected that more than 50% of yield reduction is the direct result of abiotic stresses. Biotic stress is another

# FRONTIERS IN BIOLOGICAL SCIENCES



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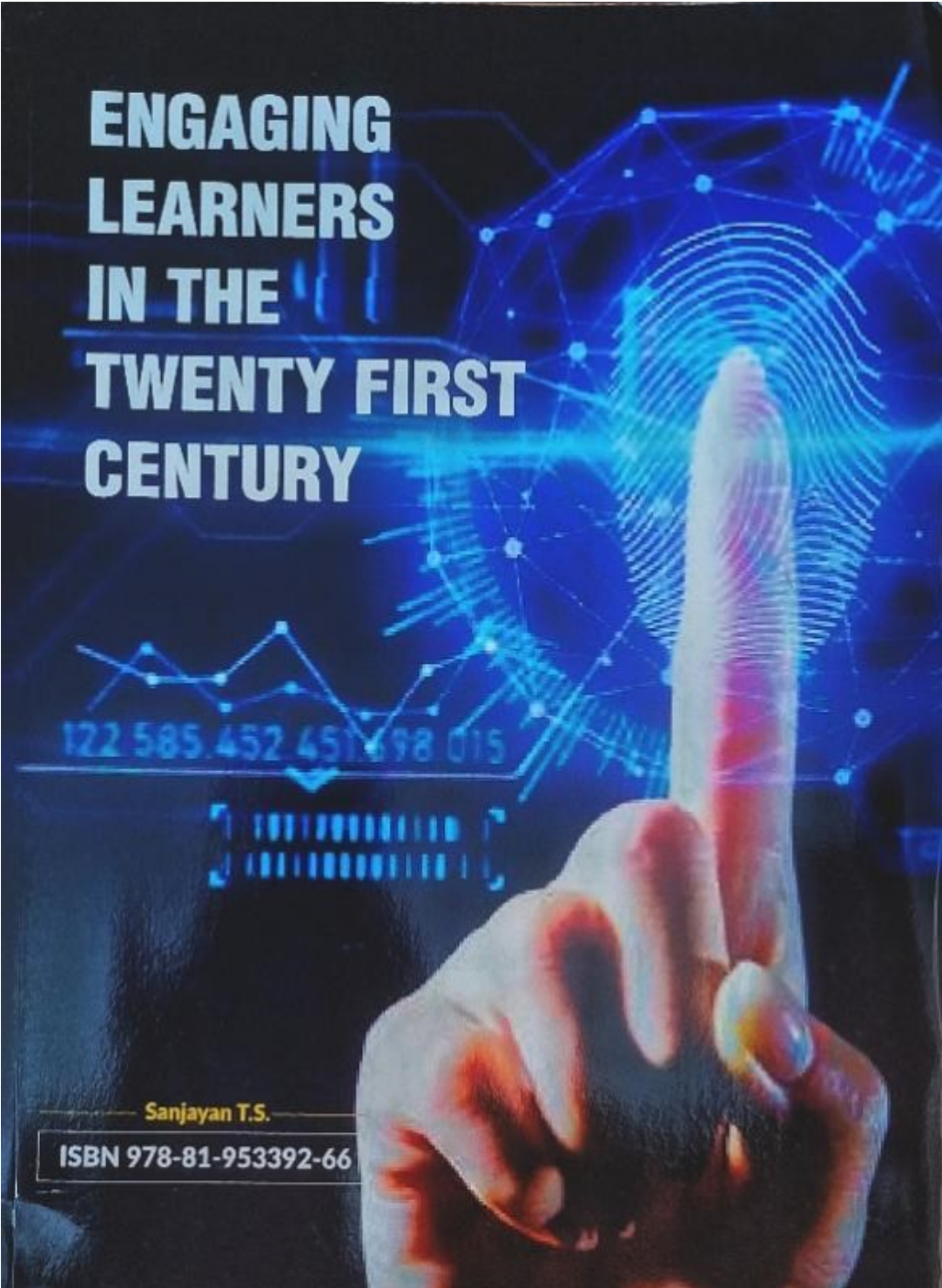
**Xpress publishing**  
AN IMPRINT OF NOTION PRESS

Price Rs 575.00  
ISBN 979-888629608-2



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# ENGAGING LEARNERS IN THE TWENTY FIRST CENTURY

Sanjayan T.S.

ISBN 978-81-953392-66



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## Upsurge Of Digital Education: Creating An Impact In Academic Sector

Dr. Reshmi S

Assistant Professor of English, MES Asnabi College, P. Vemballur  
Kodungallur, Kerala

### Introduction:

Digital age is engrossed with the rapid pace of technology development. Education has adopted and adapted technology over the years. The impact of technological intervention in education is a paradigm shift which brings forth a virtual classroom space with the support of Learning Management Systems. Online learning integrates different facets of media like text, graphics, audio, video, animation and simulations. Education must contextualize the need of the age and the gradual shift from classroom- oriented teaching to digitally- oriented platforms enabled technology- based learning.

The landscape of digital learning is evolving with a rapid increase in digital education programs around the world. Technology based education prepares students for work force and high-quality education. Despite the potential benefits of digital learning, many students lack access to technologies creating a digital divide. Effective digital learning is channelised through high-speed internet, technological devices, online classes and software for personalized learning. The report from the Asian Development Bank (2009) provides three rationales that support digital learning: the knowledge economy rationale, which emphasizes education's role in preparing students for the workforce; the pedagogical rationale which prioritizes the optimization of student achievement and educator effectiveness; and the equitable access rationale, which focuses on providing all children with a high-quality education.

### Integrating Technology in Teaching:

The credibility of new technology and communication platforms integrate online component into educational scenario. This digital panorama is supported by Information Communication Technologies (ICT), cheap telecommunications, the existence of open resources, digital libraries and the spread of access points. Digital education accommodates increasing number of enrolments, new audiences, diversification of student population and promotion of lifelong learning. The globalized access of digital technology increase "either the access to higher education of populations that would be otherwise excluded, or increasing the range of people who might be served by elite institutions" (Larreamendy-Joerns&Leinhardt, 2006, p. 568). Online paradigm also leads to the transformation of educational environment which is more inclusive and triggers professional development. In the digital era, faculties need to be competent to handle online teaching and employment of adequate technologies.

The miraculous leap of technology is visualized in almost all walks of life whether it be economy, health, science and education. The educational institutions have become instrumental in making huge investments in the field of technology to enhance learning. Powerpoint presentations, multiple projectors and screens, clickers for recording student responses, 'back-chat' channels on Twitter, enable students to comment on lectures. The transmission of information has been accelerated with the implementation of digital education and it also channelises knowledge management of the students through finding, analysing, evaluating, sharing and applying knowledge under the direction of a skilled subject expert. Digital tools increased the scope of project-based learning, collaborative learning and experiential learning.

Blended learning or hybrid learning ensures technology enhanced learning which allows students to learn online and to improve independent learning skills. This mode of learning demands catalyst for change and is in stark contrast to formal classroom model with students facing the instructor and writing board. The present-day learning environment is guided by three key elements like pedagogy, technology and space. The evolving and diversified teaching methods and learning preferences should be imbibed by the instructors who teach a generation of 'digital-natives'. Vertical surfaces to display content, multiple projection surfaces and whiteboards in various configurations are all important classroom considerations. The constructivist pedagogies in digital education replaces the role of instructor from that of a sage to a guide. Technologies and new modes of delivery open up innovative ways and methods in teaching. In the digital age, the instructors communicate with students through synchronous communication media- real time collaborative online teaching (voice phone calls, text and

ISBN No.: 978-93-83790-41-4

e-Book

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## Leaf Based Phenetic Analysis On The Selected Taxa From The Genus *Ficus* L (Moraceae) From Southern Western Ghats

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### ABSTRACT

The present work is a leaf based phenetic study on the selected members of the genus *Ficus* from Southern Western Ghats. Sixteen morphological characters of the leaf considering 102-character states were studied. The species were collected and careful morphological observations were made. The morphological characters were standardised into numerical format with the presence or absence of each character state represented with 1 and 0 respectively. The data was analysed using PAST Ver 2 Software and a dendrogram was obtained. The species were aligned based on the similarities on leaf morphology. The dendrogram obtained showed that the leaf morphology-based clustering is not exactly similar to the current accepted sub generic classification of *Ficus*. But the clustering was almost similar to a habit-based classification of *Ficus* into plants with cauliflorous inflorescence, stranglers, epiphytic & hemi epiphytic trees and independent trees. Thus, it implies that the leaf morphology-based clustering in *Ficus* is similar to its habit pattern.

**Key words:** *Ficus*, Leaf morphology, Phenetic study.

### INTRODUCTION

The genus *Ficus* L. (Moraceae) is one among the most abundant, complex and diverse angiosperms. The hypanthodium inflorescence, minute flowers and morphological complexity make the genera problematic. They are commonly called as 'Fig' plants. About 750 species of *Ficus* is distributed in the world, chiefly in the tropics and sub tropics (Corner, 1965; Berg & Corner, 2005). India has a diversity of 115 taxa of *Ficus*, majority of them distributed in the North Eastern regions (Chaudhary *et al.*, 2012). Around 40 species of *Ficus* have been reported from the Western Ghats region. According to the current classification, the genus is divided into six subgenera based on overall morphological and sexual features (Berg, 2003).

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वैधानिक चेतावनी

पुस्तक के किसी भी अंश के प्रकाशन, फोटोकॉपी, इलेक्ट्रॉनिक माध्यमों में उपयोग के लिए लेखक व प्रकाशक की लिखित अनुमति आवश्यक है। पुस्तक में प्रकाशित आलेख/आलेखों के सर्वाधिकार मूल रचनाकार/रचनाकारों के पास सुरक्षित हैं। पुस्तक में व्यक्त विचार पूर्णतया लेखक/लेखकों अथवा सम्पादक/सम्पादकों के हैं। यह जरूरी नहीं है कि प्रकाशक इन विचारों से पूर्ण या आंशिक रूप से सहमति रखे। किसी भी विवाद के लिए न्यायालय दिल्ली ही मान्य होगा।

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प्रथम संस्करण : 2021

ISBN 978-93-89341-70-6

प्रकाशक

अनुज्ञा बुक्स

1/10206, लेन नं. 1E, वेस्ट गोरख पार्क, शाहदरा, दिल्ली-110 032

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## पोस्ट बॉक्स नं. 203 नाला सोपारा में ट्रांसजेण्डर विमर्श

संजीव कुमार के.

“डर, हिंकारत, अछूता  
हीन, उपेक्षित....  
देखकर हमें कुछ यूँ,  
है जहाँ सारा, नजरें फेर लेता....  
क्या खूब सूझी, तुझे भी ऐ खुदा,  
इक कहर है तेरा यह भी, 'अधूरी देह' देना....  
-गीतिका वेदिका की कृति 'अधूरी देह' से

इक्कीसवीं सदी विमर्शों की सदी है। चाहे वह नारी विमर्श हो, दलित विमर्श हो, या आदिवासी विमर्श हो। इन विमर्शों के समान्तर एक नया विमर्श अपनी उपस्थिति दर्जा कर रहा है— वह है जेण्डर विमर्श। विश्व में दो लिंग के अलावा एक अन्य प्रजाति के लोग रहते हैं, जो न ही पुरुष के श्रेणी में आते हैं और न ही स्त्री श्रेणी के अन्तर्गत। जिन्हें हम हिजड़ा, जेण्डर, नपुंसक, खोजा आदि उपनामों से सम्बोधित करते हैं।

चित्रा मुद्गल द्वारा लिखित 'पोस्ट बॉक्स नं.203 नाला सोपारा' (2016) उपन्यास में एक तृतीय लिंगी बालक की वेदना और संवेदना को बताया गया है। यह उपन्यास पत्रकारिता शैली में लिखा गया है। पूरा उपन्यास माँ-बेटे के बीच के संवाद पत्र के माध्यम से है। विनोद उर्फ बिन्नी उर्फ विमली जन्म से नपुंसकलिंग है, उनके घरवाले समाज के भय के कारण उसे हिजड़ों के हाथ में सौंप देता है। माँ घरवालों से छुपकर पोस्ट बॉक्स द्वारा आये पत्र के माध्यम से अपने बच्चे के साथ बात करती है। बिन्नी कई शिकायत अपनी माँ से करती है।— “तूने, मेरी बा, तूने और पप्पा ने मिलकर मुझे कसाइयों के हाथ मासूम बकरी सा सौंप दिया। मेरी सुरक्षा के लिए कोई कानूनी कार्रवाई क्यों नहीं की? मनसुख भाई जैसे पुलिस अधीक्षक पप्पा के गहरे दोस्त के रहते हुए? वो अपने आप मुझे बचाने के लिए तो आ नहीं सकते थे। मेरे आंगिक दोष की बात पप्पा ने उनसे बाँटी जो नहीं होगी। वरना वह मुझे बचाना जरूर आ जाते”। विनोद के मन में दुनिया को लेकर ही नहीं बल्कि खुद के बारे में भी बहुत अधिक सवाल हैं। वह अपने माँ से पूछता है—“मंजुल के गोद में सम्भालते हुए मैंने तुझसे प्रश्न किया था, 'मेरे नुनू क्यों नहीं है, बा?' तो तूने मुझे बहलाया था। 'बच्चे के जन्मते ही आटे का नुनू बनाकर लगाना पड़ता है। नर्स भूल गयी तूझे लगाना। लगवा देंगे तुझे भी”<sup>2</sup>। विनोद की ओर से लिखी चिट्ठियों के माध्यम से हिजड़े जीवन की अनगिनत त्रासदियों को प्रस्तुत कर गम्भीर संवेदनशीलता का परिचय देती है चित्रा जी।

बिन्नी के माँ-बाप ने उसे कई डॉक्टरों को दिखाया था। लेकिन किसीसे कोई लाभ नहीं



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**ALAGAPPA GOVERNMENT ARTS COLLEGE**

**KARAIKUDI, TAMIL NADU, INDIA.**

***TRENDS IN ENGLISH LITERATURE***

**TEL-2022**

***In commemoration of Platinum Jubilee Celebrations 1947- 2022***

**8<sup>th</sup> April 2022**

**Edited By**

**Dr. T.K. Vedharaja**



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*Alagappa Government Arts College celebrates 75th anniversary. In this platinum Jubilee year, in memory of the founder of the college, Alagappa Chettiyar, who is a voracious reader himself, it is decided to conduct a National level conference on a title that could bring in various areas of knowledge. Hence, the title Trends in English Literature became the title of the conference in commemoration of the Platinum Jubilee Celebration (1947- 2022) of the college. The purpose of this conference is to decipher modern developments in English literature to trace the antecedents and the present state of literature to refresh about the recent literary themes, theories and approaches.*

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## TITLE VERSO

<b>Title</b>	:	<b>TRENDS IN ENGLISH LITERATURE</b>
<b>Editor-in-Chief</b>	:	<b>Dr. T.K. Vedharaja</b>
<b>Event</b>	:	National Conference
<b>Month</b>	:	8 <sup>th</sup> April
<b>Year</b>	:	2022
<b>Pages</b>	:	250
<b>Price</b>	:	350
<b>Book Type</b>	:	A5, Paperback
<b>ISBN Provider</b>	:	Pandian Educational Trust
<b>ISBN</b>	:	978-93-91115-79-1

**Printer** : **Jayalakshmi Publications,**  
140, VPM Towers,  
TPK Main Road, Palanganatham,  
Madurai – 3

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## Flash Fictions: Creative and Innovative Trends in New Literature

Sabitha M.M, Assistant Professor, PG Dept of English,  
Mes Asnabi College, P. Vembalur, Kodungallur, Thrissur- 680671

### Abstract

*In this modern world as people are busy with their day to day work-life endeavours, it will be quite difficult for them to find time to sit and read a lengthy novel or novella within a stipulated time limit. They may discard their reading habit in their hazardous work schedule. Modern citizens would like everything to be handy and portable and use every bit of time in their own comfortable way. This might be the reason that these tech savvy beings, especially those who don't want to give up their reading habit, prefer short fictions or micro fictions rather than lengthy novels or books. They can read these short fictions within a short period of time and can enjoy every nuances of storytelling. Flash fictions were in vogue in the early 19<sup>th</sup> century, but they came to be prominent recently in the 21<sup>st</sup> century due to the advancement and development of social media culture. This paper intends to elucidate the innovation and expansion of the genres of flash fictions and micro fictions and to analyse the narrative techniques by exploring some of the popular flash fictions.*

**Keywords:** FlashFiction, Microfiction, Sixword fiction, Characteristics, Narrative techniques.

### Introduction

Flash fiction is a type of prose narrative, which takes itself the form of a brief, self-contained story. Its word count ranges from 5 to 1000 words on average and can go up to the maximum of 1500 words. It's also known as short shorts, nano-tale or micro story, and the form of the story is unique as it focuses on movement rather than focusing on plot or character development. Each sentence or each word peels back a layer and progresses the story. Look at these six words: *For sale: baby shoes, never worn.* This is a premier example of the fiction's shortest form. In flash fiction, where twist endings and enigmatic last lines are standard practice, just six words can allude to the tragic death of a child. This six words fiction can be attributed to Earnest Hemingway. He was a prolific practitioner of the form. Lets look at an example of his work to see what makes short shorts so engaging.

They shot the six cabinet ministers at half past six in the morning against the wall of a hospital. There were pools of water in the courtyard. There were wet dead leaves on the paving of the courtyard. It rained hard. All the shutters of the hospital were nailed shut. One of the ministers was sick with typhoid. Two soldiers carried him downstairs and out into the rain. They tried to hold him up against the wall but he sat down in a puddle of water. The other five stood very quietly against the wall. Finally the officer told the soldiers it was no good trying to make him stand up. When they fired the first volley he was sitting down in the water with his head on his knees.

"Chapter V", a vignette from Hemingway's collection *In Our Time*, follows the form of great flash fiction. With a straightforward beginning and violent clasp that summarizes the

साहित्य के

# पर्यावरण विमर्श



डॉ. रंजित एम. • डॉ. सूर्या बोस





### डॉ. रंजित एम.

**जन्म** : तलशशेरी, कण्णूर (जिला), केरल  
**पिता** : सी.एम. माधवन  
**माता** : के.के. पद्मजा  
**पत्नी** : डॉ. सूर्या बोस  
**शिक्षा** : एम.ए. (हिन्दी), एम.फिल (हिन्दी)  
(कालिकट वि.वि.); बी.एड (कण्णूर  
वि.वि.); पी.जी. डिप्लोमा इन ट्रांसलेशन  
(कालिकट वि.वि.); डिप्लोमा इन हिन्दी  
(केन्द्रीय हिन्दी निदेशालय, नई दिल्ली);  
पी-एच.डी. (कालिकट वि.वि.)

**प्रकाशन** : 1. अज्ञेय के तारसप्तक  
2. हिन्दी कथा साहित्य में नारी  
3. हिन्दी सूफी काव्यों में प्रकृति-चित्रण  
4. प्रतिष्ठित पत्र-पत्रिकाओं में कविता,  
कहानी, लेख, यात्रावृत्त।

**सम्प्रति** : अध्यक्ष, हिन्दी विभाग, एम.ई.एस. अस्माबी  
कॉलेज, कोडुङ्गल्लूर, त्रिशूर (जिला),  
केरल

**संपर्क** : उषस (घर) तुक्करिप्पूर पी.ओ., कासरगोड  
जिला-671310 (केरल)  
मोबाईल : 09387441300

**प्रकाशक**

**जवाहर पुस्तकालय**

सदर बाजार, मधुर-281001 (उ.प्र.)

ई-मेल : jawahar.pustakalaya@gmail.com

ISBN : 978-81-950289-7-9



9 788195 028979

ISBN : 978-81-946862-3-1

© : सर्वाधिकार सुरक्षित

प्रकाशक : गोविन्द पचौरी

जवाहर पुस्तकालय

हिन्दी पुस्तक प्रकाशक एवं वितरक

सदर बाजार, मथुरा-281001 (उ.प्र.)

दूरभाष : 09897000951

ई-मेल : jawahar.pustakalaya@gmail.com

मूल्य : 250.00 (दो सौ पचास रुपये मात्र)

प्रथम संस्करण : 2020

आवरण : विनीत शर्मा

शब्द-संयोजन : गीता डिजाइनिंग ग्रुप, दिल्ली-110094

मो. : 09350345268

मुद्रक : जय भारत प्रेस, नवीन शाहदरा, दिल्ली-110032

# Reimagining Space and Literature

Edited by

SARAN S.

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3. "Discontinuity in Sentence Construction While Writing English Among High School Students"- \*Swarna Anna



## CHAPTER IV

# WHAT IS WRONG WITH OUR UPBRINGING? OBJECTIFYING WOMEN IN INDIAN CINEMA AND ITS IMPACT ON MARRIED LIFE: A SELF STUDY

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### Abstract

Traditionally, social norms have prescribed certain genders for men and women. Men are generally considered to be dominant, masculine, and independent, while women are portrayed as weak, sensitive, and dependent. In contemporary society, women are free to adopt more active sex, from what is considered "masculine," to what is considered more "androgynous," to the more stereotypical female roles. Some women, however, continue to adopt traditional gender roles where self-objectivity exists. This paper will analyze major things wrong with our upbringing and the influences of Indian cinema on objectifying women in married life.

**Keywords:** Objectification, feminism, marriage, and self-love.

• • •

The book 'Reimagining Space and Literature' seeks to provide an overview of the key theoretical approaches to spatial studies, as well as their most important inquiries and methodological implications. Our fundamental goal is to present a comprehensive analysis that includes classical geo-critical perspectives as well as contemporary transnational, quantitative, or digital studies that have impacted our understanding of space and its literary functions. This colloquium aims to bring together the fields of classical (Greco-Roman) and modern literature by focusing on space in literary works. We hope that this meeting will cross-fertilize (the study of space in) both domains by sparking discussion on similarities, continuities, and differences in the function of literary space. To this end, we focus in particular on four themes like Surveillance studies, Environmental Post-Humanism cartoons, and graphic studies. When speaking of space in narratology and other fields, a distinction should be made between literal and metaphorical uses of the concept. As an a-priori form of intuition, space is particularly difficult to capture in its literal sense.

Edited by  
**Saran S.**

**Edit Academic**  
July 2021

Price Rs 700.00  
ISBN 978-1-63974-569-2



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IMPACT ON THENMALA TOURISM



Dr. Haseena.V.A

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Publications



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**Published by:**

Mantech Publications Pvt. Ltd.

**Registered Office:** 203, Plot No-45, Gyan khand-2, Indrapuram, Ghaziabad,  
U.P.-201014, Delhi/NCR

**Contact No:** 7838047803, 8506003804

**Corporate Office:** 402, Plot No.-127, Gyan khand-1, Indrapuram, Ghaziabad,  
U.P.-201014, Delhi/NCR

**Contact No:** 7838047803, 8506003804

**Email:** [info@mantechpublications.com](mailto:info@mantechpublications.com), [mantechpublications@gmail.com](mailto:mantechpublications@gmail.com)

**Website:** [www.mantechpublications.com](http://www.mantechpublications.com)

**First Edition:** 2021

**ISBN:** 978-81-948050-6-9

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**Price: Rs. 390/-**

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**Printed at:**

LaxmanPrinto Graphics,  
Sector-10, Noida, U.P.

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# **Eco-Tourism in Kerala**

## **A General Focus on Covid-19 and its Impact on Thenmala Tourism**

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**MANTECH**  
Publications

**ManTech Publications Pvt. Ltd.**

**Glaziabad, Delhi/NCR**

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**Evolving Poetic Utterance:  
New Frontiers and Visual Signatures**



**P.G. DEPARTMENT OF ENGLISH  
NAIPUNYA INSTITUTE OF MANAGEMENT AND  
INFORMATION TECHNOLOGY  
PONGAM, KORATTY**

Language: English

**Evolving Poetic Utterance: New Frontiers and Visual Signatures**

Collection of essays edited by: Grace K. Benny, Greena Joseph and Dr. Purnima Kumar

© Authors

Publication year: 2022

Cover design: SM Press

Layout: SM Press

Printing: SM Press

**Publishing**

Association for Cultural and Scientific Research

Thrissur- 680689

**Circulation**

P.G. Department of English

Naipunnya Institute of Management and Information Technology,

Pongan, Koratty

Thrissur, Kerala, India, Pin 680308

ISBN: 978-81-952711-2-2

**Presenting Man and Nature in the Light of Ecocriticism in the  
Malayalam movie, *Melepparambil Ann Veedu***

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Assistant Professor on Contract,  
Department of English,  
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P. Vemballur, Kodungallur.

**Abstract**

*Man's life is intensely entwined with Nature. An existence without it is just a matter of nonexistence. His dependence on Nature can be traced from the very beginning of humanity itself as presented in Vedas, Puranas, Upanishads, Epics and classical literatures. Nature is indispensable part of human life.*

*Man's life is essentially one with his ecosystem. Parting his soul from it is really hard. This interdependence and connection is successfully presented on screen in the Malayalam movie "Melepparambil Ann Veedu" (1993), directed by Rajaseenan. The locale is a lush green rural area in the District of Palaghat in Kerala. All the male members of the family are farmers except the educated younger one. The rich paddy fields, untarred roads, thatched or tiled roof homes, the village ponds all these idyllic scenes are relived on the silver screen through the film. My paper attempts to examine the interconnection between Man and Nature and to create an awareness about the importance of preservice of Nature in an era of Global warming and the consequent natural calamities.*

**Key Words: Ecocriticism, Pastoral, Taoism, Locus amoenus.**

**Introduction**

"Simply defined ecocriticism is the study of relationship between literature and physical environment": Cheryl Glotfelty. (Barry 248)

Ecocriticism is the study of literature and environment from an interdisciplinary point of view, where literature scholars analyse texts that illustrate environmental concerns and examine various ways literature treats the subject of Nature.

Signpost | 1

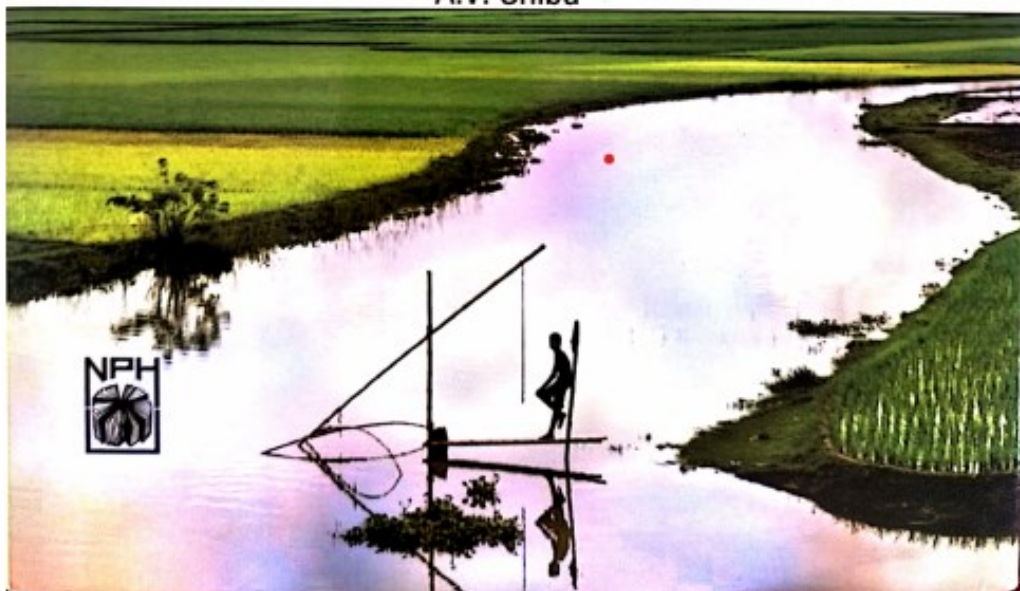


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# IMPACT OF CLIMATE CHANGE ON HYDROLOGICAL CYCLE, ECOSYSTEM, FISHERIES AND FOOD SECURITY

B. Madhusoodana Kurup  
M.R. Boopendranath  
M. Harikrishnan  
A.V. Shibu



**Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food Security.**

Edited by: *B. Madhusoodana Kurup, M.R. Boopendranath, M. Harikrishnan and A.V. Shibu*

Papers presented at ClimFishCon2020: International Conference on Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food Security, 11-14 February 2020, Cochin, India.

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**Citation:** Swadhin Behera, 2021. The Climate Variability in the Indo-Pacific Sector. In: Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food Security (Madhusoodana Kurup, B., Boopendranath, M.R., Harikrishnan, M. and Shibu, A.V., Eds.), pp. 3-12, Narendra Publishing House, Delhi, India.

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**First Published in 2021**

**ISBN: 978-93-90309-11-5**

*Published by :*

**NARENDRA PUBLISHING HOUSE**

**Publisher and Distributor**

C-21, Varan Apartment, Sector -9, Rohini

NEW DELHI - 110085

Phones: 91-011-45025794, +919717874875

E-mail: [info@nphindia.com](mailto:info@nphindia.com), [nphindia@gmail.com](mailto:nphindia@gmail.com)

Website: [www.nphindia.com](http://www.nphindia.com)

Printed in India

Laser Typeset by Amrit Graphics, Shahdara, Delhi-110032

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## Consumer Preference for Value added Fish Products in Kochi (Kerala)

Mary Saniya Stephen<sup>1\*</sup> and Dhanya Pulikkottil Rajan<sup>2</sup>

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Fisheries sector has witnessed an impressive growth from a subsistence traditional activity to a well-developed commercial and diversified enterprise. It has been playing a pivotal role in the economic development by virtue of its potential contribution to employment generation, income augmentation, addressing food and nutritional security concerns and foreign exchange earnings. World fish production has increased immensely and the capture fishery has arrived at a state of over exploitation. An alarming increase in human population is resulting in widening the supply-demand gap, with the consequences of reduced availability, rising price and search for alternative resources to meet the gap (Clark, 1990).

Low priced fishes are either converted to fish meal or sold for curing. In general, deep-sea fishes may not be immediately acceptable to the consumers due to unfamiliarity in shape, size and colour of the new varieties. These low priced fishes are nutritionally and chemically in no way inferior to that of fishes of commercial importance. Therefore, collecting and processing meat of these fishes into diversified value-added products suiting to human consumption would result in effective utilization of the resource. Moreover, purchasing capacity of people is going to enhance in years to come and market prices are going to be high for fish (Salim, 2008).

Marketing of value-added fish products is completely different from traditional seafood trade. Market surveys, packaging and advertising are a few of the very important areas, which ultimately determine successful movement of new products. Most market channels currently used may not be suitable to trade value added fish products. A new appropriate

# Proceedings of the National Seminar Species The Passion 7



St. Thomas College (Autonomous), Thrissur

<i>Title</i>	<b>“SPECIES THE PASSION 7”</b> (Proceedings of the National Seminar “Species The Passion 7”, 9 March 2022)
<i>Editor-in-Chief</i>	Dr. Anto P.V. Asst. Professor, Convenor – “Species The Passion 7”
<i>Editors</i>	Ms. Afsana Khan, Ms. Keerthana Nandakumar, Ms. Nimmi C Dominigose, Ms. Reshma Ashok
<i>Language</i>	English
<i>Published by</i>	Publication Division, St. Thomas College (Autonomous), Thrissur
<i>Disclaimer</i>	The Publishers assume no responsibility for the views, statements and opinions expressed by the authors
©	2022 St. Thomas College (Autonomous), Thrissur
<i>ISBN</i>	978-93-91691-01-1
<i>Price</i>	Rs. 150/-
<i>Printed at</i>	Educare, Thrissur

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**Taxonomy and Diversity of the Lesser-Known Varieties of *Ficus virens*  
(Moraceae) from The Western Ghats**

Sreehari S. Nair<sup>1</sup> and K.H. Amitha Bachan<sup>2</sup>

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2. Assistant Professor, Research and P G Department of Botany, MES Asmabi College, P. Vemballur, Thrissur

**Abstract**

The genus *Ficus* (Moraceae) which comprises around 115 taxa distributed in India is a dominant genus among the angiosperms. A comprehensive revision of the genus *Ficus* L., from the Western Ghats, recorded 36 taxa of *Ficus*. Encountered two interesting specimens were identified as varieties of *Ficus virens*. *Ficus virens* Aiton is one of the most common and widely distributed species of *Ficus* in the world. Which shows great complexity in the morphological characters and hence more complex in the taxa. Whereas the *Ficus virens* var *matthewii*, is a new record for Kerala and *Ficus virens* var *dispersa*, a new report to India. These two varieties of *Ficus virens* showed significant differences from the common variety *Ficus virens* var *virens*. A detailed taxonomic description of all the three varieties along with an identification key and images are provided here.

**Keywords:** Distributional record, *Ficus virens*, *Urostigma*, Western Ghats.

**Introduction**

The genus *Ficus* L., (Moraceae) is a highly diversified genera with respect to the habit pattern and life forms. The genus is mainly distributed in the tropical and sub-tropical regions of the world (Chaudhary *et al.*, 2012; Mohapatra *et al.*, 2020). The presence of the specialised inflorescence - hypanthodium, minute flowers and morphological complexities make the genera problematic. The global revision of the genus by E. J. H. Corner since 1930, reduced the number of species to ca. 750. The first detailed work on the genus from India was carried out by G. King (1887) and recorded 113 species and 47 infraspecific taxa of *Ficus*. The genus remained unnoticed except few regional works. BSI initiated a revisionary work on the genera and reported 115

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<i>Editors</i>	Ms. Afsana Khan, Ms. Keerthana Nandakumar, Ms. Nimmi C Dominigose, Ms. Reshma Ashok
<i>Language</i>	English
<i>Published by</i>	Publication Division, St. Thomas College (Autonomous), Thrissur
<i>Disclaimer</i>	The Publishers assume no responsibility for the views, statements and opinions expressed by the authors
©	2022 St. Thomas College (Autonomous), Thrissur
<i>ISBN</i>	978-93-91691-01-1
<i>Price</i>	Rs. 150/-
<i>Printed at</i>	Educare, Thrissur

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**Addressing the Limitations of Niche Modelling for Species Distribution  
Prediction with Reference to the Western Ghats**

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**Abstract**

Ecological Niche modelling has a prime importance in prediction of niche suitability of a species. The study addresses the limitations of Species Distribution Modelling (SDM) using a modified methodology (MSDM) and experimented here with four threatened species of the Western Ghats. The authentic distribution records and bioclimatic variable gives an accurate Maxent-based prediction to the potential habitat of the species. SDM is facing a greater challenge hence it not considering the factors of the Eltonian niche. The incorporation of species associates, altitude and terrain features helps to consider the factors of the Eltonian niche which probably lack in the Species Distribution Modelling (SDM). The study with the support of detailed works affirms here the MSDM is more efficient and suitable for prediction of potential locations for species in the Western Ghats compared to the normal SDM. The coalescence of habitat degradation factors based on vegetation and land use spatial information imparts more precision into the suitability of projected areas. Here, we tested this with the habitat prediction of four threatened species *Cryptocarya anomalayana* Gamble, *Diospyros crumenata* Thwaites, *Prioria pinnata* (Roxb. ex DC.) Breteler, *Orophea erythrocarpa* Bedd. which occupies a unique and narrow niche in the forest of the Western Ghats. This approach can be used for the prediction of potential habitat of threatened species for conservation and ecorestoration.

# Cultural Congruence: Contemporaneity and Confluence

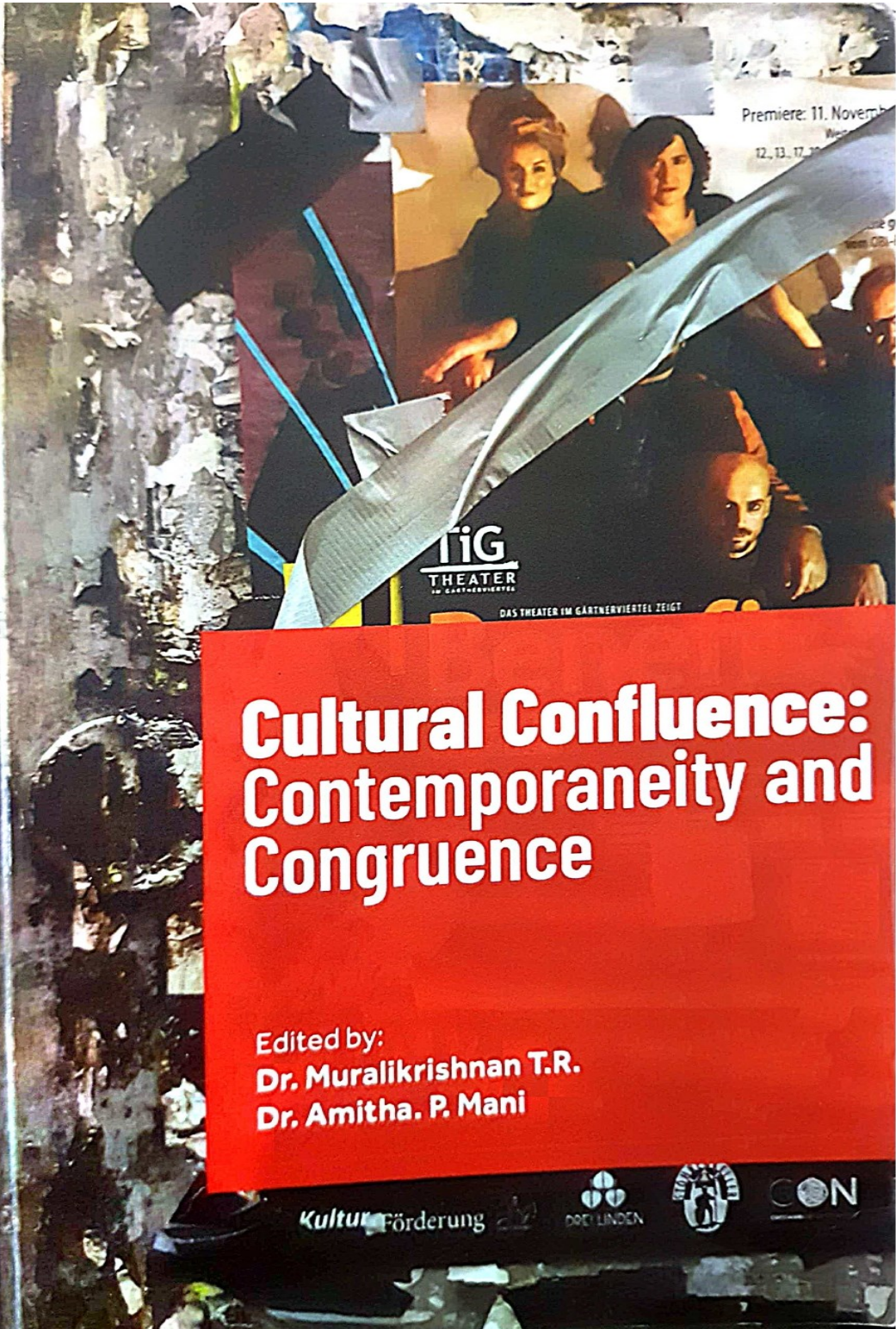
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Co-text Publishers, Kottayam



# Cultural Confluence: Contemporaneity and Congruence

Edited by:  
**Dr. Muralikrishnan T.R.**  
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Kultur Förderung



CON



English Language

*Cultural Congruence: Contemporaneity and Confluence*

Collection of essays edited by: Dr. Muralikrishnan T.R. and

Dr. Amitha P Mani

© Authors

Publication year: 2022

Cover Design: Silju C Lulu

Layout: Vishnu N

Printing: Co-Text, Kottayam.

***Publishing***

Co-text Publishers

NSS Building, State Bank Junction

Kallara South (PO)

Kottayam, Kerala, India pin: 686611

Ph: 8547918535

***Distribution***

Co-text Publishers

NSS Building State Bank Junction

Kallara South (PO)

Kottayam, Kerala, India pin: 686611

Ph: 8547918535

ISBN: 978-81-952253-7-8

Price: Rs. 499/-



# Cultural Congruence: Contemporaneity and Confluence

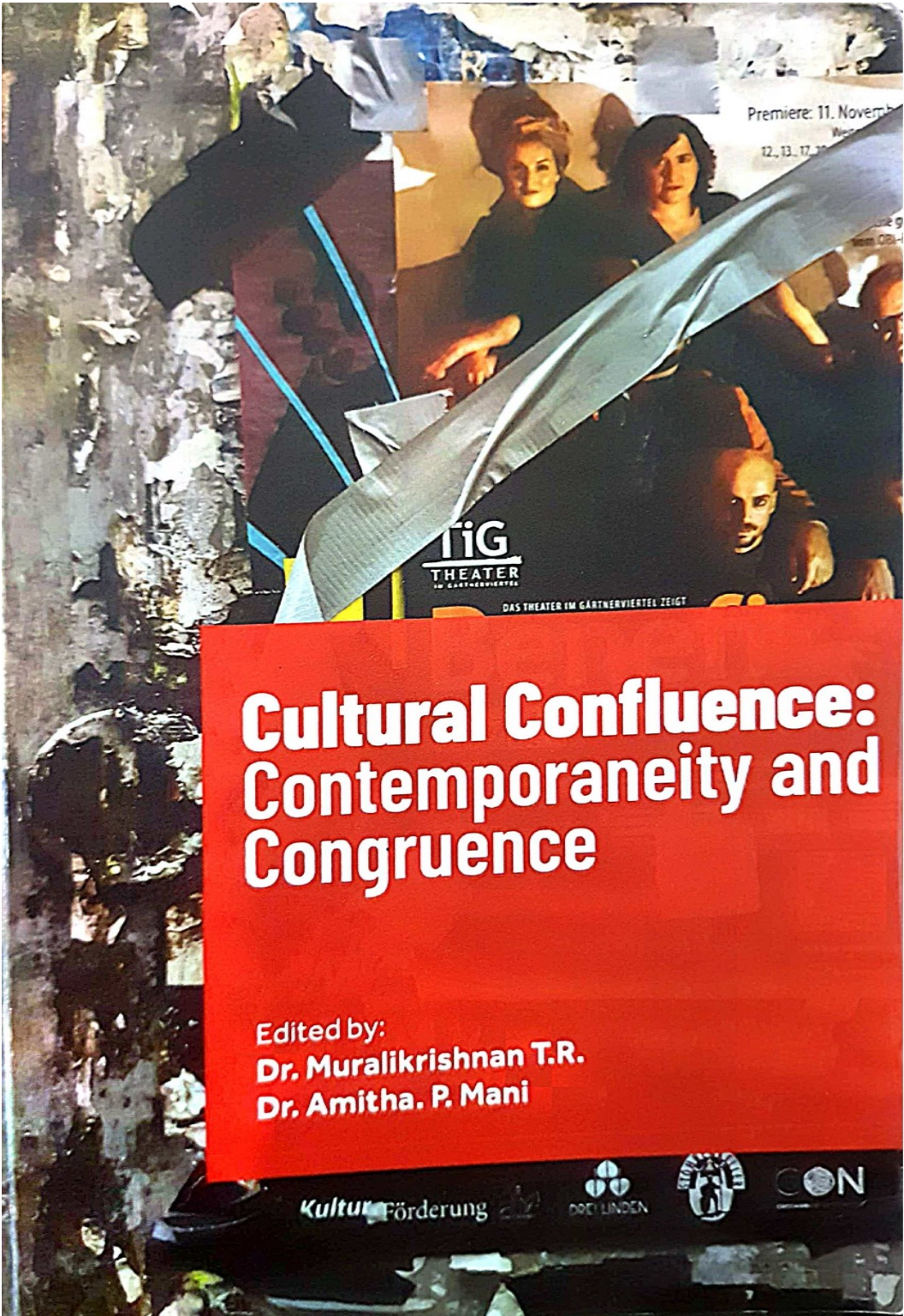
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Ph: 8547918535

ISBN: 978-81-952253-7-8

Price: Rs. 499/-





MULTIDISCIPLINARY  
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VOL-II

EDITOR  
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# MULTIDISCIPLINARY RESEARCH IN EDUCATION



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She has received Pillars of India award 2021. She has achieved Best Teacher Award in 2021 (Education Excellence Award). She has edited three anthologies entitled "The Lap of Nature", "Euphoria" and "Elixia". She has published more than hundred poems. Her short stories titled "My Sobbing days", "My Identity" and "Red Masks" have also published. She has contributed an article in Green Street Magazine. She has participated in UNESCO International Mentoring Programme titled "Empowering Teachers for Developing Culturally Responsive Classroom."



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First Edition: 2022, VOLUME II

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ISBN : 978-93-95196-45-1

**Published By:**

ESN PUBLICATIONS,  
3/151-A, Muthuramalingapuram,  
Kalloorani Post,  
Aruppukottai Taluk,  
Virudhunagar District,  
Tamilnadu,  
India, Pincode-626105

# Nonsense Literature: An analysis of *The Walrus and the Carpenter* written by Lewis Carroll

Reshma T.M

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## Abstract

'Meaninglessness' is the least considering word in the life's dictionary of every individual. It is considered as something negative. But sometimes man may felt this meaninglessness in his walks of life. This meaninglessness is the essence of nonsense literature. Literary nonsense is much more than mere nonsense. They use such words to create humorous situations in the work of literature. 'The walrus and the carpenter' by Lewis Carroll is a fine example of nonsense literature. This article analyse the poem as a nonsense poetry.

Key words: Nonsense literature, Lewis Carroll, death and betrayal,

"I love to talk about nothing. It is the only thing I know anything about"

-Oscar Wilde

Man do everything for a purpose. He speaks reasonably. In fact man is considered as the most reasonable creature on earth. It is his rationality that differentiate him from other being on earth and giving him a superior position.

But he may not be reasonable all the time. There are times he speaks irrationally or insensibly. This may not be on purpose all the time. Though we may felt it absurd sometimes it



# Functional Grammar and Communication in English

A prescribed text for first semester (Course ENG  
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**Sabitha M.M.**

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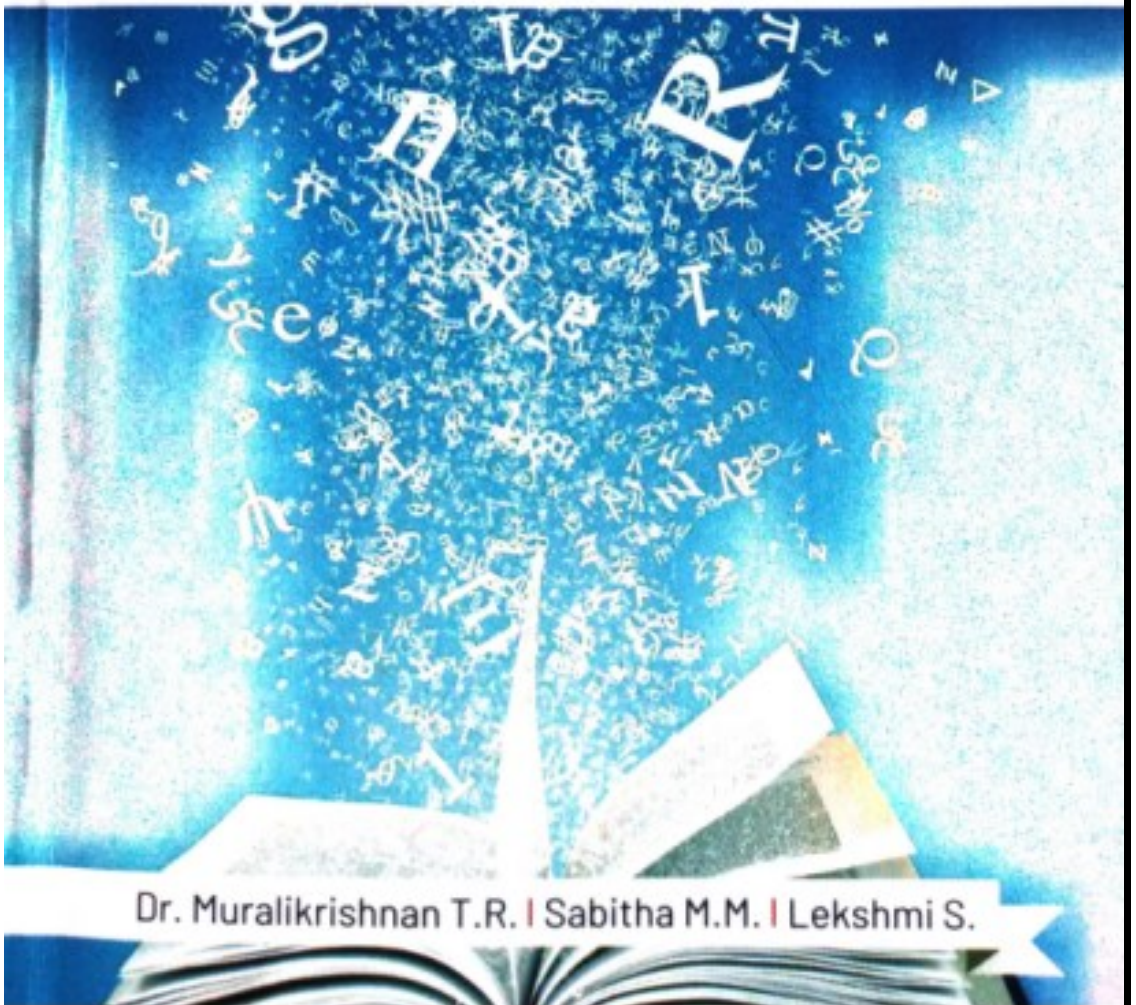


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**Functional Grammar and  
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Dr. Muralikrishnan T.R.  
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Lekshmi S.

Calicut University Edition  
Published in July 2022

Cover: Asuthosh V.  
Typesetting : Laly Francis K.

© UNIVERSITY OF CALICUT  
Printed at Calicut University Press

Price: Rs. 150/-

ISBN 978-81-953846-3-1

Published by Omprakash V., Publication Officer, University of Calicut.

CUP/3045/22/75000/PUB



## Nanotechnology in the Automotive Industry

Micro and Nano Technologies

2022, Pages 317-343

## Chapter 16 - Magnetic nanoparticles-based coatings

P. Poornima Vijayan<sup>a</sup>, Archana Somadas Radhamany<sup>a</sup>, Ansar Freath Beeran<sup>b</sup>, Maryam Jouyandeh<sup>c</sup>,  
Mohammad Reza Saeb<sup>d</sup>

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## Abstract

This chapter provides a detailed description of the promising role of magnetic hybrid nanoparticles in coating technology adopted in marine industry, automobiles, aviation, medical implants, defence, electronics, and eventually industrial structure in oil and gas, fertilizer, metallurgical, and other industries. It was also attempted to give an image of the microstructure-properties relationship of coatings in terms of cure behavior and kinetics of hybrid coatings containing MNP. By the use of MNPs, it is possible to tailor various properties of coatings like anticorrosion, superhydrophobicity, self-healing, antifouling, and microwave absorption over a wide range of substrates including metals and fabrics. Latest trends practised in such coatings were concisely discussed. The mechanism of action of MNPs in facilitating special features to these coating was clearly depicted. We also aim to give a concise summary of the potential of MNPs in developing future protective coatings.

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## Keywords

Magnetic hybrid nanoparticles; Hybrid coatings; Corrosion inhibitor; Antifouling; Electromagnetic wave interference

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1/2

## Details

## ISBN

978-0-323-90524-4

## Language

English

## Published

2022

## Copyright

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## Imprint

Elsevier

## DOI

<https://doi.org/10.1016/C2020-0-03545-0>



**SIGNPOST**  
**Evolving Poetic Utterance:**  
**New Frontiers and Visual Signatures**



P.G. DEPARTMENT OF ENGLISH  
NAIPUNNYA INSTITUTE OF MANAGEMENT AND  
INFORMATION TECHNOLOGY  
PONGAM, KORATTY

Language: English

**Evolving Poetic Utterance: New Frontiers and Visual Signatures**

Collection of essays edited by: Grace K. Benny, Greena Joseph and De P.  
Kumar

© Authors

Publication year: 2022

Cover design: SM Press

Layout: SM Press

Printing: SM Press

**Publishing**

Association for Cultural and Scientific Research

Thrissur- 680689

**Circulation**

P.G. Department of English

Naipunnya Institute of Management and Information Technology,

Pongan, Koratty

Thrissur, Kerala, India, Pin 680308

ISBN: 978-81-952711-2-2

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## **Peregrination into the Human Psyche through Underlying Spiritual Philosophy in the movie *Manassinakkare***

Jameelathu.K.A  
Assistant Professor  
Research Department of English  
Mes Asmabi College.P.Vemballur

### **Abstract**

*Movies act as a reformative medium from the time it has been initiated as an art form. A spiritualistic change that occurs when purified by "arousing pity and fear" as Aristotle said can really modify men by making them think reflectively on life and meaning of life. Religion, wealth and power are the tools with which we measure our happiness normally. But watching an apt movie makes us think philosophically about life, shifting our mental texture from material leaning to the spiritual leaning and thus we start thinking about an egalitarian society. Some movies pierce into our mind, making a trepidation within and topsyturvyving our concept of life altogether. Malayalam movie "Manassinakkare", thus affects our conscience suggesting a lot many possibilities of burden free life showing the mysterious paths of Sisyphian life. The recurrence of life's frivolous, sometimes cruel mockery makes the movie more like a purgatory. It moves in like a well written poem to our heart and tickles our ego to shed itself as a snake's moult. The rustic greenery throughout the movie signifies the eco-related peacefulness and solemnity. The songs echo the strong relation of man and nature. The ideal and the real are placed side by side in the movie. A middle generation moving towards thorough materialism and the old and the new turning towards the ideal rustic notion brings a poetic charm to the whole movie. An Eco-Culture evolving out of the Taoist philosophy is latent here and sometimes reflects through some of the characters.*

**Keywords:** Purgatory, Taoism, Sisyphian, Eco-culture

### **Introduction**

The rhythm of the universe lies in the balanced life of humans and animals. Man should understand the value of and start practicing, aligning oneself to the natural way of cosmos, simple life. In that process, he gains the wisdom to

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***Redefining Theories of Communication***  
***21st Century Perspectives in Language and Literature***

***Conference Proceedings***

First Published: March 2023

Department of English and Other Foreign Languages  
College of Science and Humanities, SRM IST, Ramapuram

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E- ISBN: 9798215540473

**E-Book Distribution**  
Smashwords, USA

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**Publishing Assistance & Supervision**

Prof. Manu Mangattu  
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**Cover Design & Layout**

*Dreams Design Hyderabad*  
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## Man as the Oppressor and the Oppressed: A Postcolonial and Psychological Perspective on the Malayalam movie *Guru*

Jameelathu KA

Assistant Professor, Research Department of English, MES Asnabi College P. Vemballur

### **Abstract**

*Movie as a mode of literary expressions and as a reformative medium functions with full effects ever since it has been normalized as a genre of literature. As a visual medium it has a special privilege to mingle with the soft emotions of human beings. It makes man think or reflect on his actions and the acts of society. Writers and directors with humanitarian sentiments have tried incessantly to bring about these reflections that may keep humanity away from the many social and environmental evils. Socially and environmentally important topics have been used by these writers to open the otherwise blind eyes of human beings. The director Rajiv Anchal and the writer C G Rajendra Babu had tried to bring about these reflections in human mind through their thought provoking 1997 Indian Malayalam Language fantasy drama film *Guru*. It ranges from all levels, i.e. psychological, spiritual, environmental and more clearly on postcolonial elements. Man as a victim of circumstances becomes the oppressor and the oppressed. In most of the cases he himself is the cause of his troubles and turmoil. When this primordial cause is identified, he will be isolated from the ignorant multitudes, the hero of the movie experiences this isolation and alienation due to his newly earned wisdom. This paper tries to analyse the underlying truth and its negligence as the root cause of human misery.*

**Keywords:** *reformative medium, fantasy drama, primordial cause, ignorant multitudes*

### **Introduction**

Man has been shown as the most complicated of all the species as he is the one who creates changes in the created world and he is the only one who uses an acquired language rather than the innate one which all the other species use. He makes everything complicated, his life and the lives of all the other creatures. He calls it development and boasts of his talents and achievements, mastering all the other beings enslaving them. The theories on which most of the researches are done analyses these complexities on which human world is built. Whether it is post colonialism, existentialism, psychoanalysis, gender theory, archetypal or any of this sort, it delves deep in to the maze-like human world in which man himself is the oppressor and the oppressed as it happened from the time immemorial since his origin. Man's conscientious wisdom regarding his own frivolities might have caused him create stories regarding his own origin based on his own insolence and irrationality. The scriptures of all the religions in the world reflects on this frivolities and complications in his behavior.

Post Colonialism states that a study of human society in the modern world should have a base on European imperialism and its effect upon the human society. This theory emerged in the 80s and many other theories came side heading it. The concept of the colonizer and the colonized, the oppressor and the oppressed is basic to it and these terms are relative to various circumstances. The Palastinian American critic Edward Said in his work *Orientalism* discusses this as a theory first and it is taken over by Homi.K Baba, Gayathri Spivak etc. Post Colonialism is a theory which is used to analyse the selected movie, i.e Malayalam language drama fantasy movie *Guru* in this paper. Another theory which is also used to analyse this movie in connection with Post Colonial theory is Psycho Analytical theory first laid out by Sigmund Freud in the late 19<sup>th</sup> Century. The first realm of human psyche 'Id' that is the repository of all animosity in human psyche and superego which is the purveyor of all moralities are more focused in this paper than ego or the normal state. Movies sometimes act as the voice of human conscience and to fulfill its directions man is inefficient at times. Various characters in the movie proves that individual human being is responsible for individual suffering and the specialty of the unconscious mind make man the oppressor and the oppressed



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**RECENT TRENDS IN MULTIDISCIPLINARY SUBJECTS, VOLUME-1**

*Edited by: Prof. (Dr.) Namita Rajput, Aishwarya Katyay, Dr. Mohd. Shaikhul Ashraf, Dr. Reshmi S, Jisna Johnson, Rashika Durgvanshi, Dr. Venkata Narasimha Rao Inukollu, Anushka Katyay, Dr. Darshini Madanagopal*

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**RED'SHINE PUBLICATION PVT. LTD.**

Headquarters (India): 88-90 REDMAC, Navamuvada,

Lunawada, India-389 230

Contact: +91 76988 26988

Registration no. GJ31D0000034

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India | Sweden | UK

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■  
**ISBN:** 978-93-94727-43-4

**ISBN-10:** 93-94727-43-4

**DIP:** 18.10.9394727434

**DOI:** 10.25215/9394727434

**Price:** ₹ 1000

June, 2022 (First Edition)

■  
The views expressed by the authors in their articles, reviews etc. in this book are their own. The Editor, Publisher and owner are not responsible for them. All disputes concerning the publication shall be settled in the court at Lunawada.

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**Website:** [www.redshine.co.in](http://www.redshine.co.in) | **Email:** [info@redshine.in](mailto:info@redshine.in)

Printed in India | Title ID: 9394727434



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PUBLICATION  
INDIA

RED'SHINE PUBLICATION PVT. LTD.  
88-90 REDMAC, Navamuvada,  
Lunawada, Gujarat-389230  
Website: [www.redshine.co.in](http://www.redshine.co.in)  
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ISBN: 978-93-93996-28-2



9 789393 996282

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**BASIC OF ENTREPRENEURSHIP AND MANAGEMENT**

(As per V th Semester BA, BSC, AND BBA open course syllabus, Calicut University 2023-2024 )

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First Edition: May 2023

ISBN: 978-93-5813-509-1

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Published by:

MES Asmabi College, P. Vemballur, Kodungallur, Kerala, India.

PIN: 680671

Price: ₹300/-

Date of publication: 25 May 2023

Design & layout: Aneesh C. S., Maker Design Studio, Mathilakam, Kerala, India.

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## Price Spread of Fishes in Thrissur District

Alisha Ashik\*, Shijin C. V., Adhilshan, Fathimath suhara P. A., Hyfa P. & Dhanya Pulikkottil Rajan

Dept. of Aquaculture, MES Asmabi College, P. Vemballur, Kodungallur, Kerala.

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Marketing is an important activity in the marine fisheries sector of our country. Efficiency at marine marketing system could be assessed by analysing the price behaviour of retail markets and landing centres. The paper analysis the price spread of marine fish marketing system in Thrissur district. It was found that there is price difference in different marketing channels. The price spreading occurs mainly through marketing margins, percentage share of fisherman and auctioneer, ice charge, electricity, labour charge, transportation charge, fuel charge, wholesaler charge, retailer charge and vendor charge. The main harvested and marketed fishes are mackerel, sardine, squid, prawn, pink perch and tuna. Tuna has the highest cost among these. The result particularly highlight the need for formulating a uniform market policy for fishes for easy operation and regulation of countries fish production.

**KEYWORDS:** Fish Consumption, Monthly Expenses, Mackerel, Cheap Source.

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Re-accredited by NAAC with B++ grade

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Ph : 0480-2850596

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MRP : ₹300/-

ISBN: 978-93-5813-509-1





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First Edition: May 2023

ISBN: 978-93-5813-509-1

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Price: ₹300/-

Date of publication: 25 May 2023

Design & layout: Aneesh C. S., Maker Design Studio, Mathilakam, Kerala, India.

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## **Fish Consumption Pattern in Thrissur District**

Neely T. G.\* , Sandra S Nair, Anusree M. P., Gopika K. S., Ruksana,  
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Kerala is one of the important marine fish producing and consuming state in India. Fishes are generally considered as cheap sources of protein and good quality nutrition for human consumption. The paper presents a brief account of abundance of fish consumption among different people. The result particularly highlights the monthly expense spent for fish consumption by people in Thrissur District. It is observed that sardine, mackerel and prawn are mostly consumed fishes. It is noted that mackerel (*Rastrelliger kanagurta*) is the most favoured fish by the population in Thrissur District. Per head consumption pattern of fish was greater for the lower class followed by the middle and upper class.

**KEYWORDS:** Fish, Consumption, Monthly Expense, Mackerel, Cheap Source.

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ISBN: 978-93-5813-509-1





# NCIATRI<sup>23</sup> ABSTRACTS<sup>20</sup>

Editors

**Ansar E. B., Dhanya P. R., Jisha K. C., Kesavan K.  
Lathif Penath, Mohammed Areej E. M. & Sheena P. A.**

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First Edition: May 2023

ISBN: 978-93-5813-509-1

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Published by:

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## **Post Monsoon Induced breeding of Ikan koi Kabuto slayer carp, *Cyprinus carpio* (Cyprinidae) using WOVA FH**

Alistar C. S.\* , Ahammed Rashid C. R., Riswana V. N., Hafidha, Muhammed Adhil C. S.,  
Vinitha Vijayan & Kesavan K.

Dept. of Aquaculture, MES Asmabi College, P. Vemballur, Kodungallur, Kerala.

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The aim of the present study was to perform induced breeding and to observe the larval development of Ikan Koi Kabuto slayer carp (*Cyprinus carpio*) using WOVA FH. The experiment was carried out in aquaculture facilities set in the department of Aquaculture M E S Asmabi College. Fishes were brought to the laboratory in the third week of January 2023, conditioned for one week in freshwater of appropriate quality. After sexing of mature specimens intramuscular injections of WOVA-FH were administered. The dosage of WOVA-FH applied was 0.5 ml/Kg weight. Spawning occurred after 6-8 Hrs of injection. Ordinary tiles in inverted position were set as egg collectors. Egg count, and fertilisation rate were calculated. Eggs were treated with methylene blue to prevent possible infection. Eggs hatched after 48 hrs. post spawning. Larvae are fed with food developed from a packed starter feed 'colostrum'. The larval growth is observed and recorded.

**KEYWORDS:** *Cyprinus carpio*, Induced Breeding, WOVA- FH, Larval Development.

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## Study on Gut Content of Lunar Tailed Big Eye (*Priacanthus hamrur*)

Shameem Ayyappankandathil<sup>1\*</sup>, Amrutha Sivas & Kesavan K.<sup>2</sup>

<sup>1</sup>PG & Research Dept. of Aquaculture and Fishery Microbiology, MES Ponnani College, Ponnani, Malappuram, Kerala.

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Fish gut content analysis provides a general information about the feeding patterns of a fish. Quantitative assessment of feeding habits is important in management of fisheries. Through the analysis of gut content a better idea about the fish diet is also identified. Fish diet is an integration of many components which are ecological important which includes behavior, condition, habitat use, energy intake and different inter-intra specific interactions etc. Valid information about fish diets and feeding habits gives an idea. To analyze the gut content of the selected species using different methods and critically assess the gut content in relation to feeding habits of the fish. The samples were collected from Munambam harbour, Thrissur district. There are a total of 4 samples collected on different dates of one week interval starting from 09/02/2022 and all these were females, three of them were immature ones and the other one was a specimen with mature ovary. The specimens were transported immediately obtaining them from the harbor by packing in polythene covers containing crushed ice. *Priacanthus hamrur* is exclusively carnivorous. Crustaceans are the most preferred food item of the fish. Though other food items are also seen in the gut the fish seems to show selectivity towards crustaceans. The food items like amphipods (component of benthic fauna) in the gut are an indicator of the fish as a demersal fish. But frequent appearance of planktonic organisms like calanoid copepods and sergestids gives the impression that the fish finds its prey in water column as well.

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**KEYWORDS:** *Priacanthus hamrur*.

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## **Comparative Study on Biofloc & Cage Culture System in the Production of Tilapia**

Anjaly Ratheesh<sup>\*</sup>, Aishwarya K. V., Thanhath T. S., Devapranav, Dilsemariyam & Shibu A. Nair

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Tilapia culture presents high potential for income generation and hunger alleviation in developing countries. Suitable culture technology can help to achieve such goals sustainably. This work aimed to comparatively evaluate the influence of cage culture and Biofloc. The result indicated that output can be improved with production system. From the comparative reports cage culture is the most profitable, environment friendly and less man power culture system.

**KEYWORDS:** Biofloc, Production System, Profitable, Income Generation.

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Fida Rasheed\*, Shahul Hameed P. H. , Anjana Vinod, Laya T. P. , Njanalakshmi P. S. & Shibu A. Nair  
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Aquaculture contributes to poverty alleviation as it provides employment to millions of people. The major systems of culture practiced are Aquaponics, Biofloc, Recirculating Aquaculture System and Tarpaulin pond. This study attempts to present the involvement of central and state governments in promotion and development of aquaculture through local bodies. The study is conducted in Edavilangu Grama Panchayat. The study reveals women empowerment and social upliftment. The financial assistance was made by PMMSY of central government and Government of Kerala. PMMSY contributed 60% of fund for women, SC and ST entrepreneurs. 40% of fund was contributed by Government of Kerala. Due to such financial assistance from central and state governments, potential use of water bodies, women empowerment and overall social development was realised.

**KEYWORDS:** Development, Women Empowerment, PMMSY.

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## **Comparative Analysis of the Common Marine Fish Species in Tanzania and India**

Joyce M. R. \*, Hassan K. S., Akmal S., Iffath A., Musbiha K. F. & Shibu A. N.

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Fisheries resource refer to the products or output that arises from capture fishery and Aquaculture, more than 120 million people throughout the World are estimated to depend on fish their income hence ensuring food security and raising the protein level of nation's populace and improving their welfare. The paper presents a brief comparative analysis of the most common marine fish species in Tanzania and India. The result particularly highlights that India has wide range of water bodies and varieties of fishes. It has observed that most of states in India are access to ocean and sea making them available in the market.

Tanzania having almost similar varieties of fish but having inland water bodies that have unfamiliar fish species. Species such as Peacock grouper, India mackerel, Indian squids, Sword fish, Giant tiger prawn and King fish are observed to be most dominated in Tanzania and India. The price of almost all species differ slightly depend on the availability of the species and market demand in Tanzania and India.

**KEYWORDS:** Fish, Marine, Common Species, Price Variation.

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MRP : ₹300/-

ISBN: 978-93-5813-509-1





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First Edition: May 2023

ISBN: 978-93-5813-509-1

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Published by:

MES Asmabi College, P. Vemballur, Kodungallur, Kerala, India.

PIN: 680671

Price: ₹300/-

Date of publication: 25 May 2023

Design & layout: Aneesh C. S., Maker Design Studio, Mathilakam, Kerala, India.

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## Impact of Malathion on the Biochemical Composition of the Freshwater Fish, *Oreochromis Mossambicus*

Chitra K. C.<sup>1</sup> & Sunniya Abdu<sup>2\*</sup>

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The aim of the present study was to evaluate the effect of malathion on the antioxidant status in the liver of adult freshwater fish, *Oreochromis mossambicus*. Malathion at sublethal concentration (0.125 mg/L) was used as the test dose and the treatment was given for 24, 48 and 96 h to ten animals in each group maintaining a control group. Malathion generates reactive oxygen species in the liver of the fishes which is evident by the time-dependent reduction in the antioxidant enzymes and concomitant increase in the lipid peroxidation. However, there were no significant changes in the antioxidant parameters in brain of malathion-treated fishes. Thus the present study reveals that the antioxidant enzyme potential is very poor in liver when compared with that of brain. On the other hand, the present study also showed a significant decrease in the marker enzyme, alkaline phosphatase in the liver after 96 h of malathion treatment. Alkaline phosphatase, a hydrolyase enzyme are involved in the mediation of membrane transport and transphosphorylation.

A decreased alkaline phosphatase activity in liver of malathion-treated animal indicate the decreased state of inter and intracellular membrane transport and possibly this could be due to the toxicity of malathion. In the malathion-treated fishes, the hepatocytes have lost their normal architecture and large number of these cells appeared with pyknotic nuclei. The intrahepatic blood vessels were dilated and congested with blood, and inflammatory leucocytic infiltrations were also observed. Numerous hepatocytes showed marked cytoplasmic vacuolization. Thus malathion induces toxic stress to the exposed fishes, which is obvious by the histopathological changes in the liver. Thus the present study reveals that malathion induced oxidative stress in liver of *Oreochromis* by inducing reactive oxygen species generation.

**KEYWORDS:** Malathion, Liver, Antioxidant Enzymes, ROS, Alkaline Phosphatase, *Oreochromis*.

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First Edition: May 2023

ISBN: 978-93-5813-509-1

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## **Nutritional Enhancement of Edible Oils Using Crustacean Shell Waste**

Sayana K. A.\* & Sumayya K. S.

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Enormous increase in shrimp shell waste production has been accounted as a major problem faced by seafood industry globally. Even though growth in shrimp utilisation and export is a reason for global development, on other side the impacts are also growing abundantly. The primary way for discarding this waste is dumping into water resources including oceans which causes intense environmental pollution (Suresh 2012). Hence reutilisation of shrimp shell waste has emerged as new area of research since decades. Shrimp shell contains numerous bioactive components such as chitin, fatty acids, amino acids, minerals and pigments which has different industrial applications. The current article presents the simplest way to utilise shrimp shell waste to enhance nutritional quality of edible oil, sunflower oil. The only nutritional elements present in sunflower oils are fats and fat-soluble vitamins. Here presents a simplest method to incorporate active ingredients from shrimp shell to oil, boiling the oil with shell waste in it. Using the waste generated from one kg of shell waste used in one litre of oil and the results showed enhancement in minerals such as potassium, sodium, calcium and zinc and a fractional increment in protein is also reported.

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First Edition: May 2023

ISBN: 978-93-5813-509-1

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## **Influence of Chilled Storage on the Biochemical, Sensory and Microbial Quality of Frigate Tuna (*Auxis thazard*) Meat.**

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The biochemical , bacteriological and organoleptic changes in Frigate Tuna (*Auxis thazard* ) meat during chilled temperature storage have been studied. In this study tuna sample collected from Ponnani harbour in Malappuram district. There was a decrease in the proportion of soluble fractions of protein during storage. it was observed that the initial value of the TVBN in the meat was low,TVBN content increased on storage from an 0.75% to 1.85% ie, it does not increased acceptable limit. Moisture content of the white meat was 73.7% and moisture content of the red meat was 71.4%.The proportion of the crude protein in white meat 18.90% and red meat was 18.28%.the moisture content registered a steadily increase from 73.7% to 76.3% over 16 days. The initial bacterial load was  $1.23 \times 10^6$  cfu in iced condition the colony counts variation are obtained microbial parameters such as *V.cholerae* and *E.coli* was absent in storage condition.The overall organoleptic quality of the meat progressively deteriorated over the period of storageon the 16th day ,the meat had slightly fair in condition.However no bad odour was noticed during any stage of this study. Finally, storing tuna fish meat for up to 14 days exhibited no detrimental nutritional consequences and the safe for consumption.

**KEYWORDS:** Tuna, Frozen Storage, Soluble Proteins, Quality Changes.

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## **Chemical & Physical Food Safety Hazards in Aquaculture Farms: A Study in Kodungallur Area in Thrissur District**

Sreelakshmi T. P.

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The project report entitled to "Chemical & Physical food safety hazards in aquaculture farms: a study in Kodungallur area Thrissur district." The main objective of the study is to comparatively analyze farmers experience and expertise with the steps taken in avoiding chemical & physical hazards in farm. It is the process to list down the possible chemical & physical hazards based on the literature. To carry out the survey about possible chemical & physical food safety hazards in aquaculture farm in Kodungallur area. Primary data is collected through survey questionnaires, for this questionnaire will be framed. Altogether 22 farmers were interviewed from the Kodungallur area. Secondary data related to this study were collected from various sources such as government publications, National & International journals, and books from CUSAT library, published and unpublished thesis and related websites.

The various tools used for the study SPSS version 23 & Microsoft excel 2013. Tables and frequency distribution table were used for better understanding. Through the analysis of frequency distribution table, we get an idea about the chemical and physical hazards in the aquaculture farms.

The survey showed that the various responds about the chemical and physical food safety hazards in aquaculture farms in Kodungallur area. From the data in Kodungallur area most of the farmers aware about the chemical and physical food safety hazards. On the other hand, some of them have no idea about this. The study recommends to Use only non-persistent chemicals and set of guidelines for environmentally sound aquaculture practices which can help prevent the indiscriminate use of chemicals.

**KEYWORDS:** Chemical Hazards, Non-persistent Chemicals, Food Safety.

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Re-accredited by NAAC with B++ grade

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Ph : 0480-2850596

e-mail: principal.mesasmabi@gmail.com

website: www.mesasmabicollege.edu.in

MRP : ₹300/-

ISBN: 978-93-5813-509-1





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First Edition: May 2023

ISBN: 978-93-5813-509-1

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Published by:

MES Asmabi College, P. Vemballur, Kodungallur, Kerala, India.

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## **Growth Performance Study of *Anabas Testudineus* by Utilization of Prawn Shell Waste as a Potential Fish Feed Ingredient**

Ujjwala Navas

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Fish meal is habitually considered as the major protein source in fish feed for fish culture. Rising cost, deteriorating quality and unavailability of fishmeal caused huge difficulty in modern aquaculture, particularly for fish nutrition. Nearly all *Anabas testudineus* cultures faced loss, due to high feed costs, inappropriate feed formulation and management. So it was necessary to find a profitable replacement of fishmeal, which could provide better growth performance to *A. testudineus*. A feeding trial was conducted for 120 days in 200-L circular fibre tanks with proper aeration, to compare the influence of prawn shell waste, in the formulated diet and commercial feed for *A. testudineus*. *Anabas* fishes were collected from a local farm and are distributed into two fibre enforced tanks, 5 fishes were stocked in each tank for comparing fish growth rate and feed utilization. This study revealed that the prawn shell waste were tested and confirmed satisfactory results, having 33.4% protein.

**KEYWORDS:** Prawn Shell Waste, Formulated Feed, Growth Performance.

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First Edition: May 2023

ISBN: 978-93-5813-509-1

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## **Marketing Margin and Price Spread of Ornamental Fishes in Selected Districts in Kerala**

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The present study was under taken to know aquarium fish marketing system in the districts of Thrissur and Emakulam. A total number of 9 ornamental fish shops were randomly selected. A lot of studies related to ornamental fish marketing have been conducted during past decades. By analyzing marketing cost and price spread, the current status of ornamental fish business in the market, and also the profit percentage earned by the breeder, rearer, wholesaler, and retailer at different marketing channel can be understood. . The ornamental fish shops were found to be the primary source of livelihood for these people and maximum units were retail outlets. In ornamental fish trade, price is determined as "rate per piece" and this caused a high difference among producer's price, wholesaler's margin and retailer's margin of same species. Inappropriate quarantine of the stock, lack of good colouration, lack of good strain and unsteady demand also affected the wholesalers. Fishes were imported mostly from Kolkata, Chennai and Mumbai whereas sometimes they bought fishes from foreign countries as well. Gold fish (*Carrassius auratus*) was the most preferred groups in market. Improper health management practice, seasonal fluctuation in price, high wholesale rate and lack of finance was considered as the most significant problem inhibiting the growth of retail industry. The analysis revealed that the intermediaries were grabbing a significant share of the consumer's rupee.

**KEYWORDS:** Price Spread, Marketing Costs, Wholesale Price, Retail Price.

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First Edition: May 2023

ISBN: 978-93-5813-509-1

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## Priming Enhances tolerance to Waterlogging Stress in Turmeric Varieties (*Curcuma longa* L.)

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Waterlogging (S) is one of the major abiotic stresses limiting turmeric growth, yield and stability in areas with excessive rainfall. In this study, three different rhizome priming techniques—hydropriming (H), halopriming (N), and KNO<sub>3</sub> priming (K)—were used as an attempt to increase the water logging tolerance in two turmeric varieties, Prathibha (T) and Pragati (G). In contrast to the control, primed-waterlogged plants maintained their growth and yield on the fourth day following two days of waterlogging. The results showed that waterlogging treatment significantly raised levels of carbohydrates, protein, proline and H<sub>2</sub>O<sub>2</sub>, and decreased levels of MDA, demonstrating turmeric's high resistance to waterlogging stress. It also showed that waterlogging treatment did not reduce the amount of photosynthetic pigment. Hydro-primed Prathibha under stress (THS) and KNO<sub>3</sub>-primed Pragati under stress (GKS) had the highest photosynthetic pigment and protein content. Proline content was found to be higher in both primed waterlogged turmeric varieties, while Pragati had a higher concentration. Carbohydrate content was lower in the leaves of primed waterlogged plants but was found higher in roots. The yield was higher in primed turmeric varieties and waterlogging did not significantly reduced it. The highest yield was found in halo-primed Pragati (GN).When all applications were compared with the control, the primed Prathibha varieties were less affected by waterlogging and more tolerant than the others. The present study suggested that rhizome priming is an alternative and more effective method to increase tolerance in turmeric varieties when exposed to waterlogged conditions.

**KEYWORDS:** Priming, Tolerance, Turmeric, Waterlogging.

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## Crop Improvement of Ginger (*Zingiber officinale* Rosc.) Through Biopriming

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Ginger (*Zingiber officinale* Rosc.) is a crop which mainly cultivated for its underground spicy rhizomes. Currently various methods are adopting for crop improvement, among these techniques, priming is the best method for a agriculturist for the better establishment of crops. Various chemicals, UV rays, magnetic field, nanoparticles and biological organisms are used as priming agents. In this work, ginger (var. Karthika) is primed with various concentrations ( $10^5$ - $10^9$  cfu) of *Pseudomonas fluorescence*, a well-known bacterium that is widely used for crop improvement program. Surface sterilized ginger rhizome cuttings were incubated with solutions containing bacteria for different time duration (6,12,18 and 24 hrs). The entire process was maintained in the germ-free conditions with sterile soil and pots in the culture room. The primed ginger showed sprouting within six days, while the sprouting took more than 20 days for unprimed ones. All bacterial concentrations primed at 6 h and 12 h were rejected due to poor growth patterns. The selected concentration was  $10^6$  CFU for 24 hours, which showed the highest growth rate in terms of morphological attributes (shoot length 61 cm and leaf length 28 cm). Moreover, the plants also showed highest chlorophyll content in the leaves when compared to control and other priming treatments. In conclusion the bio-primed ( $10^6$  CFU for 24 hours) plants showed an enhancement in germination, growth and photosynthetic pigment, hence this priming concentration and duration was suitable for the biopriming and crop improvement of ginger plants.

**KEYWORDS:** Biopriming, Ginger, Growth, Improvement, *Pseudomonas*.

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ISBN: 978-93-5813-509-1







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First Edition: May 2023

ISBN: 978-93-5813-509-1

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Published by:

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PIN: 680671

Price: ₹300/-

Date of publication: 25 May 2023

Design & layout: Aneesh C. S., Maker Design Studio, Mathilakam, Kerala, India.

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## Phytochemical and GC-MS/MS Analysis of *Strophanthus wightianus* Wall. ex Wight

Sabin P. Q.\* & Girija T. P.

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\*Corresponding author: sabinasmabi@gmail.com

**Background:** *Strophanthus wightianus* Wall. ex Wight belongs to the family Apocynaceae and is well known for its medicinal properties. The present study was carried out to evaluate the Preliminary phytochemicals and possible bioactive components present in the methanolic extract of *Strophanthus wightianus* Wall. ex Wight stem and leaves.

**Results:** The phytochemical analysis of methanolic extract of *Strophanthus wightianus* Wall. ex Wight leaves revealed the presence of flavonoids, phenols, saponins, alkaloids, glycosides and terpenoids. The stem extract showed the presence of alkaloids, steroids, flavonoids, phenols, coumarins, glycosides, tannins and Terpenoids. The GC-MS/MS analysis carried out using methanolic leaf and stem extracts. It shows the presence of twenty-three bioactive compounds in leaf and twenty-nine compounds in stem. which include the main bioactive compounds like Paromomycin, Niacin, Methyleugenol, Iridomyrmecin, Apiol, phytol, Methyl nicotinate, Nicofuranose, 2,4'-Bipyridine, Desaspidinol and Methyl stearate.

**Conclusion:** The phytochemical and GC-MS/MS analysis of methanolic extract of *Strophanthus wightianus* Wall. ex Wight leaves and stem revealed the presence of bioactive compounds with important medicinal properties. Hence, the presence of these phytochemicals could be responsible for the therapeutic effects of the plant.

**KEYWORDS:** *Strophanthus wightianus* Wall. ex Wight, Phytochemicals, GC-MS/MS, Bioactive Compounds.



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Date of publication: 25 May 2023

Design & layout: Aneesh C. S., Maker Design Studio, Mathilakam, Kerala, India.

## Structural Properties and Antibacterial activity of Copper Oxide Nanoparticles

Chithra B.<sup>1</sup> & Sheeba N. H.<sup>2\*</sup>

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Copper oxide (CuO) NPs have been synthesised by simple Co-precipitation method at different annealing temperature for Optimization. Samples are characterized using X-ray diffraction (XRD), Energy Dispersive X-ray Analysis (EDAX), Fourier transform infrared spectroscopy (FTIR), Scanning Electron microscopy (SEM) and UV-visible absorption spectroscopy (UV). Anti-bacterial activity of the optimized sample has been assessed using disc diffusion method. It is proven by structural analyses that CuO exists as a monoclinic structure in all samples. Annealing effects on purity of the sample and the particle size of the prepared CuO nanoparticles studied successfully. Using X-ray broadening, crystallite sizes and lattice strain on the peak broadening of CuO- NPs have been investigated using Williamson-Hall (W-H) analysis and the precise lattice parameter values calculated using the Nelson-Riley function. Monoclinic CuO nanostructures have been confirmed by FTIR measurements of all the samples, also elastic properties are studied. Chemical compositions are identified by EDAX spectra. Optical studies indicate that energy bandgap of as-prepared samples varies as 2.67 – 3.17 eV and absorbance peak as 240 nm- 257 nm. The antibacterial activity of the CuO nanomaterial is determined by using disc diffusion method against Gram positive and Gram-negative bacteria. Gram-negative bacterial strains show more sensitivity than gram-positive because of their membrane structure. The results show a strong decline of bacterial strains after a short contact with nanoparticles.



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## **The Impact of Deposition Time on the Structural and Optical Properties of Flower-like PbS Thin Films**

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Polycrystalline PbS thin films are deposited onto Flint glass substrates by the method of chemical bath deposition (CBD) at different duration of deposition time. The structure and surface morphology of the films are characterized by X-ray diffraction (XRD) and field effect scanning electron microscopy (FE-SEM). XRD pattern exhibits polycrystalline structure with preferential orientation along (200) direction, parameters such as crystallite size, lattice constant, lattice-strain and dislocation density are calculated. The FE-SEM images show appearance of flower like structure on formation of PbS films which is indicative of suitability in gas sensing applications. Studies on optical properties carried out by UV-Vis spectroscopy measurements show bandgap in the range 1.65eV-1.41 eV. The photoluminescence spectra of the films exhibit two peaks centered at around 613 nm and 738 nm after excitation at 450 nm.

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## Anatase to Rutile Phase Transformation of TiO<sub>2</sub> Nanoparticles

Hasna N. J.<sup>1</sup>, Anna Rose<sup>2</sup> & Sheena P. A.<sup>1\*</sup>

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The anatase to rutile phase transformation of Titanium dioxide nanoparticles upon calcination is reported here. TiO<sub>2</sub> nanoparticles are synthesized by sol gel method using titanium (IV)-n - butoxide (Ti(OC<sub>4</sub>H<sub>9</sub>)<sub>4</sub> or Ti(OBu)<sub>4</sub>), isopropyl alcohol ((CH<sub>3</sub>)<sub>2</sub>CHOH) and conc. HNO<sub>3</sub>. The thermal stability and the decomposition of synthesized materials are studied using thermogravimetric (TG) analysis. The TGA studies show no weight loss for the sample after 400°C. Hence the as prepared samples are calcined at 400 and 800°C for three hours. The structural characterization of the nanoparticles is done using X-ray diffraction (XRD) technique. The XRD patterns indicate that the structure of TiO<sub>2</sub> is anatase at a calcination temperature of 400°C and rutile at 800°C. The X-ray diffraction studies show an increase in the intensity of diffraction peaks, decrease in FWHM and increase in crystallite size. The crystallite size values obtained are 11.3 and 58 nm for the anatase and rutile samples respectively. The optical absorption of these nanoparticles are investigated using UV-Visible and photoluminescence (PL) spectroscopic methods. The optical absorption spectra of TiO<sub>2</sub> sample exhibited strong absorption in the UV region. The band gap energy values obtained are 3.43 and 3.00 eV for the anatase and rutile samples respectively, in close agreement with the values obtained in other studies. The samples exhibit a strong and wide PL signal from 400 to 500 nm and a shoulder peak at 377 nm with an excited wavelength of 300 nm. Both the samples exhibit similar type of PL signal with no significant change in the curve shape. The emission intensity of anatase is higher than that of rutile sample.

This study reports the successful transformation from anatase to rutile phase of TiO<sub>2</sub> nanoparticles synthesized by sol gel method.

**KEYWORDS:** TiO<sub>2</sub> Nanoparticles, Anatase & Rutile Phase, Sol-gel Technique, Phase Transformation.

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Price: ₹300/-

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Design & layout: Aneesh C. S., Maker Design Studio, Mathilakam, Kerala, India.

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## **Parental Bonding and Perception of Success Among Late Adolescent Athletes**

Adnan Hamza Kizhisseri, Minna Farhana, Pranav Mohan, Rasha K. M.\* & Minsila Hilal.

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The aim of the study is to examine the relationship between parental bonding and perceived success among late adolescents partaking in sports or other physical activities. The difference in parental bonds and perception of success is also measured between the two genders. 63 male and 63 female students playing competitive sports participated in this study. The data used in the study was collected using the Parental Bond Instrument (PBI, Gordon Parker, Hilary Tupling, & L.B Brown) and the Perception of Success Questionnaire (POSQ, Adult Version) through online survey. The collected data was analysed using Independent sample T test and correlation was found using Pearson Correlation. The results showed that there was no significant relationship between Parental Bonding and Perceived Success among late adolescent athletes. However, there was a significant difference between males and females in Parental Bonding with females showing a higher level of parental bonding with parents. Having a better bond with parents does not affect perceived success among young athletes. This may be because young adults spent much more time with peers and other same aged people.

**KEYWORDS:** Perception of Success, Parental Bonding, Adolescent Athlete.

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MRP : ₹300/-

ISBN: 978-93-5813-509-1





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First Edition: May 2023

ISBN: 978-93-5813-509-1

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## **Impact of Birth order on Academic Procrastination Among Young Adults**

Minsila Hilal, Haripriya M. T., Rameesa Parvin K. U. & Rafna Rafi Femina V. A.\*

Dept. of Psychology, MES Asmabi College, P. Vemballur, Kodungallur, Kerala.

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Academic Procrastination is one among the major challenges faced by students today. Academic procrastination can be understood as knowing that one is supposed to and perhaps even wanting to, complete an academic task but failing to perform the activity within the expected or desired time frame. Procrastination has been most thoroughly studied in student populations where it has been associated with increased levels of stress, depression, anxiety and poor academic performance but also with putting of everyday obligations. Birth order can be stated as the chronological order of sibling births in a family. Several studies found birth order to be associated with many of the personality traits. The Academic Procrastination is one among the major challenges faced by students today. Academic procrastination can be understood as knowing that one is supposed to and perhaps even wanting to, complete an academic task but failing to perform the activity within the expected or desired time frame. Procrastination has been most thoroughly studied in student populations where it has been associated with increased levels of stress, depression, anxiety and poor academic performance but also with putting of everyday obligations. Birth order can be stated as the chronological order of sibling births in a family. Several studies found birth order to be associated with many of the personality traits. The main objective of the study was to find out whether the birth order is linked to traits such as procrastination. The study sought to understand the level of procrastination among students and to find out whether there is any difference in procrastination among firstborn, middle-born and last born. This is a quantitative cross-sectional study and the samples were drawn using the quota sampling technique. A total of 150 participants took part in the study with 50 belonging to first born 50 to middle born and 50 to last born. Data was collected using the 20-question version of Lay's Procrastination scale. The data is analysed using statistical package for the social sciences. The scores are analysed using one way ANOVA. There was no significant relationship between birth order and procrastination, but there was increase in procrastination in middle borns when compared to first born and last born.

**KEYWORDS:** Birth Order, Procrastination.

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First Edition: May 2023

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## **Bullying and Resilience Among Adolescent**

Muhammed Shahal T.\* & Minsila Hilal

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The aim of the study is to evaluate the relationship between bullying and resilience among adolescents in Thrissur district. It was a descriptive quantitative research design. Sample of 120 adolescents aged 13-18 years were recruited in Thrissur district, 60 boys and 60 girls participate in this study. Data was collected using Child adolescent bullying scale CABS (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014) and Bharathiar university resilience scale BURS (ProfDr. Annalakshmi Narayanan, 2009) through field survey. The statistical significance of differences between genders was tested using t-test. Correlation was conducted to explore the relationship between bullying and resilience. The relationship was observed for all participants that there is no significant relationship between bullying and resilience in adolescents, There was no significant difference between bullying and resilience among adolescent boys and girls. Therefore, resilience is important for preventing bullying.

**KEYWORDS:** Bullying, Resilience, Adolescent.



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## Perceived Stress and Pornography Use Among Young Adults

Vijay Viond K. & Minzila Hilal\*

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Perceived stress and porn addiction are common issues among college students. Studies suggest that pornography use is related to lower mental well-being among young adults. The main aim of the study is to understand what relationship is sharing between perceived stress and pornography use among young adults and to assess whether there is a difference in male and female between perceived stress and pornography use. Perceived stress refers to the degree to which events in a person's life are assessed as stressful, unpredictable and uncontrollable (Cohen, Kamarck, & Mermelstein, 1983; Phillips, 2012). This is a descriptive quantitative study and convenient sampling method were used. 61 male and 61 female individuals participated in the study. Data were collected using the 10-question version of Perceived Stress Scale (pss-10), Pornography Assessing Screening Tool (past) and socio-demographic questionnaire (created for this study). Independent sample t test and Pearson correlation coefficient were used to analyse the data. Males and females showed no difference in perceived stress, while they showed significant difference in Pornography use.

**KEYWORDS:** Perceived Stress, Pornography Use, Young Adults.

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The aim of this study is to examine the difference between academic adaptability and resilience among college students based on their learning style, and the dependence of academic adaptability and resilience on learning style. 60 visual learners and 60 auditory learners aged between 18 to 25 from the college students participated in this study. The data collected using Academic adaptation scale(Wu, Fan & WEIHUA - 2017), Bharathiar university resilience scale BURS ( Prof Dr. Annalakshmi Narayanan, M.A, PhD, JDS(ISI), Professor department of psychology, Bharathiar University Coimbatore) And learning style questionnaire(O'Brien - 1985)along with a self made data schedule through online survey. Data was collected according to stratified sampling technique. The collected data were analyzed using SPSS statistical tools and appropriate statistical techniques such as descriptive statistics and independent t-test. The major finding shows such as the visual learners have more academic adaptability and resilience comparatively to the auditory learners, there is significance in academic adaptability and resilience among college students based on learning style, And there is a significant correlation between academic adaptability and resilience.

**KEYWORDS:** Academic Adaptation, Resilience, Learning Style.

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MRP : ₹300/-

ISBN: 978-93-5813-509-1





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First Edition: May 2023

ISBN: 978-93-5813-509-1

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Date of publication: 25 May 2023

Design & layout: Aneesh C. S., Maker Design Studio, Mathilakam, Kerala, India.

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## Relationship Between Expectationism and Self Care Behaviour Among Young Adults

Hareesh Mohan E. R. & Lathif Penath\*

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\*Corresponding author: lathifpenathpsy@gmail.com

The attitude of young adults towards the present time and future may influence in their self care behaviors. The purpose of this study is to analyze the relationship between Expectationism and Self-Care Behaviors in young adults. The study was conducted among a sample of 165 adults from the population in kodungalloor locality in thrissur district of state kerala through a online survey. This is a correlational study and convenient sampling method was used. Time Horizon Questionnaire (Gerald J.S Wilde, 2001), B-Mindful Self-Care Scale (Hotchkiss JT, Cook-Cottone CP, 2019) - short version were the two tools used to measure expectationism and self care behavior respectively. The collected data was analyzed using SPSS statistical tool and the appropriate statistical technique was pearson's correlation coefficient. This study does not include participants who are below 18 years of age and above 25 years of age. The results showed no significant relationship between Expectationism and Self Care Behaviour among young adults. Increasing perceived value of future over the present among young adults does not play as a key factor in promoting their self care behaviors.

**KEYWORDS:** Expectationism, Self Care Behaviour, Young Adults.

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## **The Effect of Learning Styles on Academic Adaptation of High School Students**

Kibilath Divan, Avani K. Devadas, Nijayas Prasad, Sreyakrishna T. J. & Lathif Penath\*

Dept. of Psychology, MES Asmabi College, P. Vemballur, Kodungallur, Kerala.

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The present study examines the relationship between psychological wellbeing and social avoidance & distress among theist and atheist and to assess whether there is any difference between these variables among theist and atheist. Psychological well-being is a complex construct that concerns optimal psychological functioning and experience. It may be defined as including hedonic (enjoyment, pleasure) and eudaimonic (meaning, fulfilment). Psychological well-being scale consists of self-acceptance, positive relationships with others, autonomy, environmental mastery, a feeling of purpose and meaning in life, and personal growth and development. Social avoidance is defined as the desire to escape or actually avoiding being with, talking to, or interacting with others for any reason. The total sample is 104. The sample were collected from 52 theist and 52 atheist aged 18 to 40. The psychological wellbeing scale and SADS (social avoidance and distress) were used in this study. Data were collected according to stratified sampling technique. The collected data was analysed using SPSS statistical tool and appropriate statistical technique such as descriptive statistics, correlation and independent t test were used. The major finding of this study was there is a significant negative correlation with the above mentioned two variables among these samples and Theist and atheist showed no significant difference in psychological wellbeing and social avoidance & distress.

**KEYWORDS:** Learning Style, Academic Adaptation, Learning Style Questionnaire.

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## **Gender Role Beliefs and Academic Self-efficacy Among College Students in Numerically Female Dominated Education Streams**

Sethulakshmi K. S. & Lathif Penath\*

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The aim of the study is to examine the differences in gender role beliefs and academic self-efficacy among students college students in numerically female dominated education streams and make within-gender comparisons across these contexts. 62 male and 66 female students from various numerically female dominated education streams participated in this study. Data was collected using Attitudes Towards Women Scale (Spence, Helmrich & Stapp, 1978) – Short version and Academic Self-Efficacy Scale (Abdul Gafoor K. & P. Muhammed Ashraf, 2006) along with a self-made personal data schedule through online survey. Data was collected according to stratified sampling technique. The collected data were analysed using SPSS statistical tool and appropriate statistical techniques such as descriptive statistics and independent t-test. The major finding showed that there is significant difference in gender role beliefs and academic self-efficacy among male and female students in numerically female dominated education streams. Female students of numerically female dominated education streams did not exhibit traditional attitudes toward women compared to male students and also Male students of numerically female dominated education streams showed lower academic self-efficacy than female students.

**KEYWORDS:** Gender Role Beliefs, Attitude Towards Women, Academic Self-efficacy and Gender.



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## **Effect of Aggression on School Refusal Behavior Among Adolescence**

Bhagya B. L. & Farhana Nazar\*

Dept. of Psychology, MES Asmabi College, P. Vemballur, Kodungallur, Kerala.

\*Corresponding author: farhananazar64.fn@gmail.com

In order to reduce school attendance problems and aggressive behavior and also for better avademic and personal development of childrens in society, it is Essential to determine the relationship between both variables. The aim of this study was to examine the relationship between school refusal behaviour and aggression among adolescence . The sample consisted of 100 secondary school students of Kodungallur subdistrict, aged 13–16. The School Refusal Assessment Scale-Revised and the Aggression Questionnaire were used. The method used were convineint sampling method and data were analysed through Karl Pearson correlation test. The findings found no significant relationship between aggression and school refusal behavior.

**KEYWORDS:** Aggression, School Refusal, Adolescence.

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## **Emotion Regulation, Coping Abilities and Cognitive Flexibility Among Service Oriented Youth Organisation Members and Non Members**

Farhana Nasar, Anaswara C. G., Afla K. S., Muhammed sharik, Sneha Rajeevan N. K.\*

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The present study aims to assess the difference in emotion regulation, coping ability and cognitive flexibility of members of official service-oriented youth organisations from that of non-members. Emotion regulation is the ability to accept control over one's own emotional state. It may involve behaviours. Such as rethinking a challenging situation to reduce anger and anxiety, hiding visible signs of sadness or fear or focusing on reasons to feel happy or calm. Coping abilities are the methods a person uses to deal with stressful situations. This may help a person to face a situation, take action, and be flexible and persistent in solving problems. Cognitive flexibility is the readiness with which one can selectively switch between mental processes to Generate appropriate behavioural responses. A total sample of 200 emerging adults (18-22) were taken. The samples were divided into 100 members of the service-oriented group and 100 non-members. Emotion regulation questionnaire (ERQ). Coping scale and Cognitive flexibility inventory(CFI) were used as measures of study along with a self-made personal data schedule which includes name, age, gender, qualification, whether members of an official youth organization or not were collected without any other details. Data was collected according to cluster sampling technique. The collected data was analysed using SPSS statistical tools and appropriate statistical techniques such as descriptive statistics and independent T test were used. The major findings of the study include that there is no significant difference between emotion regulation coping ability and cognitive flexibility of members and non-members of official service-oriented youth organizations.

**KEYWORDS:** Emotion Regulation, Coping Ability, Cognitive Flexibility, Youth Organisation Members, Non-members.

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MRP : ₹300/-  
ISBN: 978-93-5813-509-1



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First Edition: May 2023

ISBN: 978-93-5813-509-1

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## Perceived Social Support and Bullying Among Adolescents

Fathimath Hiba\* & Farhana Nasar K.

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\*Corresponding author: hibaabi952@gmail.com

Perceived social support can have a significant impact on bullying, both in terms of the likelihood of being bullied and the effects of being bullied. Perceived social support refers to an individual's perception of the availability of support from others, including family, friends, teachers, and other community members. The purpose of this study is to analyse the influence of perceived social support from family, friends and others among bullied students. This study was conducted among 160 adolescent students aged between 12-18 years. The required data was collected using Child Adolescent Bullying Scale (CABS) and Multidimensional Scale for Perceived Social Support (MSPSS). Convenient sampling method was used and the data were analysed through Karl Pearson Correlation test. The result shows that there is negative correlation between bullying and perceived social support from family, friends and others among adolescents. And perceived social support is an important factor to consider when addressing and preventing bullying. Building strong support networks and fostering a sense of community can help reduce the incidence of bullying and mitigate its negative effects on individuals who do experience it.

**KEYWORDS:** Perceived Social Support, Bullying, Adolescents.

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ISBN: 978-93-5813-509-1

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## **Psychological Well Being and Social Avoidance and Distress Among Theist and Atheist**

Rizwana M. A., Alfiya N. R., Sandra N. S., Abdul Salam & Farhana Nasar\*

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There are different learning styles prevalent among students. The well-known among them are visual, auditory, and kinesthetic. The purpose of the present study was to analyze the effect of learning styles on the academic adaptation of high school students. The Learning Style Questionnaire (LSQ-30) was administered in three schools to identify the learning styles predominant among students. A sample of 180 students of class 8,9 and 10 were selected for the study through stratified sampling method. Pure Procrastination Scale and Motivational Engagement Instrument were used to measure academic adaptation. Kruskal-wallis test was used to determine significant difference in Academic Adaptation among students based on learning Styles and Mann-Whitney U test was used to determine significant difference in academic adaptation based on Gender. And the result shows that learning styles has a significant effect on Academic adaptation. There is no significant difference on academic adaptation based on gender.

**KEYWORDS:** Psychological Wellbeing, Social Avoidance & Distress, Theist & Atheist.

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## **A Study of Behavioural Patterns and Effect of Starvation on Fight Success in the Common House Cricket *Acheta Domesticus***

Jyothi V. & Bhavana C. B.

Research & PG Dept. of Zoology, Union Christian College, Aluva, Kerala, India.

Ethology is the one of the major fields of research which has made various contributions to ecology. Crickets have been used as a model system in the behavioural studies due to its interesting behaviours like aggression, mate choices etc. Nymphs and adults of *Acheta domesticus* collected from Kalady region of Ernakulam District were used for this study. The crickets were acclimatized and reared in glass tanks, fed regularly and provided with water. The exploratory behaviour in a new environment, general activity in a new environment, aggressive behavioural difference between the wild and captive populations of male adult crickets, effect of starvation on the fight success in male crickets were studied. The latency to emerge into a new environment and the latency to touch the new environment were recorded. The nymphs showed lesser latency period than the adults. The lesser latency to emerge into a novel environment might be because of the domestication syndrome and a chance of developing boldness syndrome, the willingness to take risk in a novel area to explore. The study showed that captivity can change the personality traits in *Acheta domesticus*. The observation of general activity showed that nymphs were more active than the adults in walking and climbing. The reared *Acheta domesticus* were found to be more aggressive than the wild population. This may be due to the fact that the crickets which are captivity reared were subjected to interspecific competition due to high population density in the rearing conditions. The crickets, relatively equally sized, were subjected to three starvation conditions as less, equal and more based on the duration of attacker's starvation. It was found that probability of winning the fight by the attacker increased by the increase in the starvation period. Thus, starvation has a positive correlation in winning the fight.



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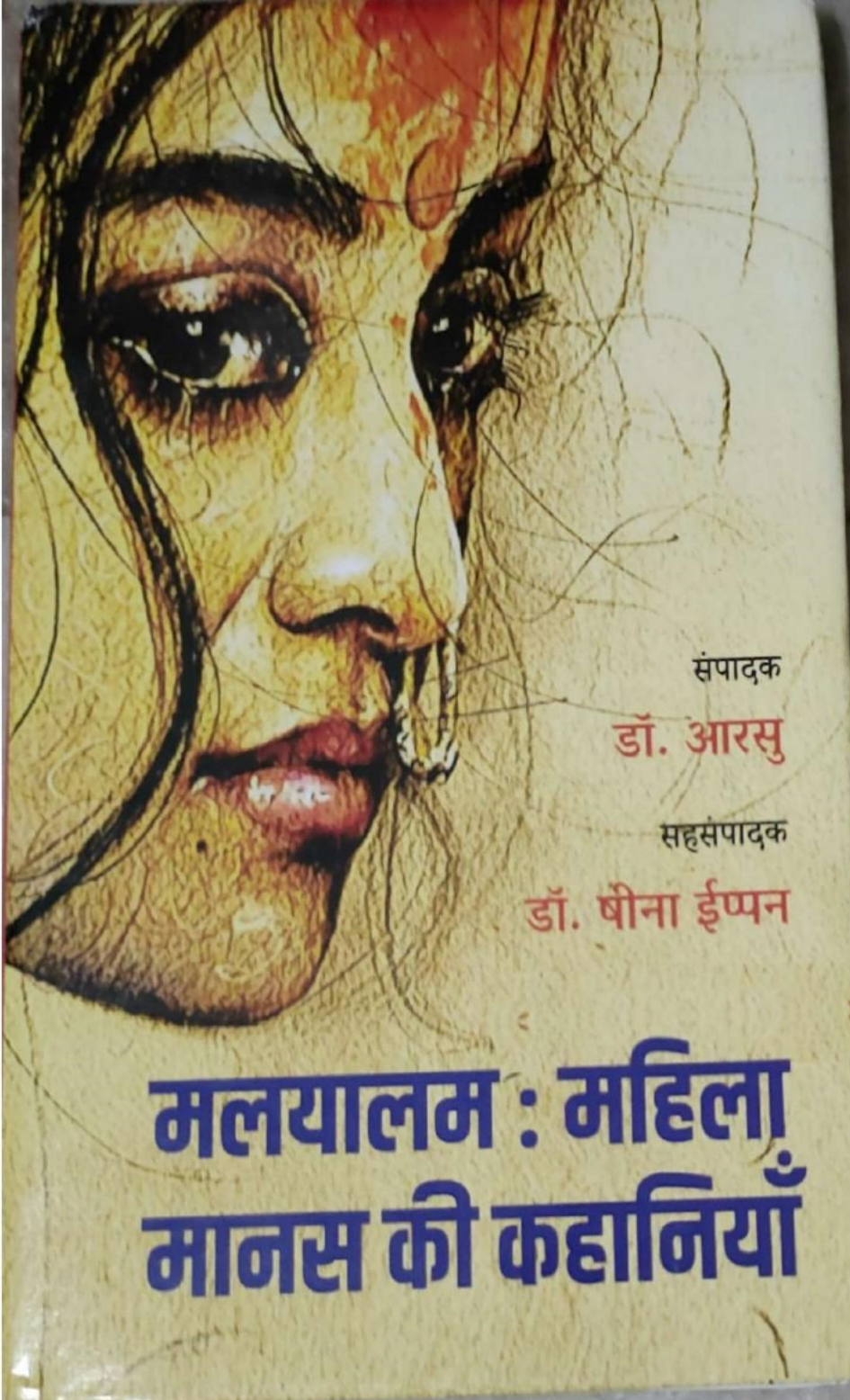
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संपादक

डॉ. आरसु

सहसंपादक

डॉ. षीना ईप्पन

# मलयालम : महिला मानस की कहानियाँ



ये हर कहीं नारी की निजति बिलकुल समान है वाली उक्ति को रेखांकित करने से वे कहानियाँ सक्षम निकली हैं। ब्राह्मण, ईसाई, इस्लाम, आदिवासी सभी वर्ग, धर्म, जाति की भिन्नियों की सम्यक् लैखिकाओं की कलम से निब्रत होने लगी, फलस्वरूप समाज में अभिन्नित बदलाव भी नजर आने लगे।

'मलयालम महिला मानस की कहानियाँ' भाषा समन्वय वेदी का एक सफ़ा प्रयास है। अनुवाद के माध्यम से भारतीय भाषाओं को आपस में मिलाने का काम भाषा समन्वय वेदी की ओर से अध्रक्ष सम्माननीय डॉ. आरसु जी के नेतृत्व में सली से जारी है। कश्मीर से लेकर कन्याकुमारी तक फैले हमारे देश की भाषाई विविधताओं में एकता लाने का प्रयास वेदी ने अपने कंधों पर ले लिया है। 'मलयालम महिला मानस की कहानियाँ' नामक यह चयनिका इसका ज्वलंत उदाहरण है। इन तमाम कहानियों से गुजरते वक्त मलयालम की महिला कहानियों का एक घाक हमें मिलेगा। नारी जागरण के लिए आवाज उठाने वाली, पुरुष वर्चस्व के विरुद्ध खड़े वाली प्रारंभ कालीन लैखिकाओं को निकट से जानने का जो मौका प्राप्त हुआ, इसको मैं परम सौभाग्य मानती हूँ। डॉ० आरसु जी मेरे आदरणीय गुरुवर हैं। आप ने ही मुझे यह दायित्व सौंपा था। आपके प्रति मैं हृदय से आभारी हूँ।

दक्षिण भारत की अन्य भाषाओं से भी इस प्रकार लैखिकाओं की चयनिकाएँ प्रकाशित होने से हिन्दी पाठकों को भारतीय महिला लेखन की एक स्पष्ट छवि मिल जाएगी। 'हिन्दी प्रदश के पाठक खुले मन से मलयालम चयनिका को स्वीकार करेंगे, इस आशा के साथ।

ॐ

(४) मलयालम : महिला मानस की कहानियाँ

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इस पुस्तक के सर्वाधिकार सुरक्षित हैं। संपादक एवं प्रकाशक की लिखित अनुमति के बिना इसके किसी भी अंश की फोटोकॉपी एवं रिकॉर्डिंग सहित इलेक्ट्रॉनिक अथवा मशीनी, किसी भी माध्यम से अथवा ज्ञान के संग्रहण एवं पुनर्प्रयोग की प्रणाली द्वारा, किसी भी रूप में, पुनरुत्पादित अथवा संचार प्रसारित नहीं किया जा सकता।

पुस्तक : मलयालम : महिला मानस की कहानियाँ  
संपादक : डॉ. आरसु  
सहसंपादक : डॉ. शीना ईप्पन  
आई.एस.बी.एन. : 978-93-95107-39-6  
संस्करण : प्रथम, सन् 2023  
© : संपादक  
मूल्य : 350.00 मात्र  
प्रकाशक : अमन प्रकाशन  
मो- : 104-ए /80 सी, रामबाग, कानपुर-208 012 (उ-प्र-)  
फोन : 09839218516, 9044344050  
शब्द सज्जा : 0512-3590496 (ऑफिस)  
मुद्रक : अमन ग्राफिक्स, रामबाग, कानपुर  
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### फिर बूढ़ा-बाँदी

उसने पर्दे के पीछे से देखा, नाटक खत्म होते ही सब लोग हॉल से वापस जा रहे थे। अब उसकी जान में जान आई। इतनी देर कैसे गुजरी... सोचा भी नहीं जा सकता। पद के पाठ ही खड़ा देख रहा था कि कोई शोर तो नहीं मचा रहा, एकटक... जिंदगी में पहली बार।

उसे लगा कि आँखें मूंदे जा रही हैं। दो तीन दिनों की नींद बाकी है। सिर दुख रहा है। ठंडे पानी से मुँह धोया... धोड़ी तसल्ली हुई। फिर भी नींद नहीं छूटी।

हॉल लगभग खाली हो चुका था। सभी अभिनेता अपने सामान बीध रहे थे। मंच के एक ओर से वेणु सर आ रहे थे। उसने आशा के साथ सर के चेहरे की ओर ताका।

"नाटक बहुत अच्छा रहा। इतना मैंने नहीं सोचा था। हरी का भविष्य उज्वल होगा।"

सर बोलते जा रहे थे... नाटक की कमियों, कॉलेज में एक नाटक क्लब होने की जरूरत आदि के बारे में। सर ऐसे ही बातूनी ढंग के आदमी हैं। उन बातों से उसे कोई मतलब नहीं है, तो भी वह नापसंदी नहीं दिखाता था। सर से कुछ कहने का साहस नहीं था, उसमें।

वह सोचता था कि इस एक महीने में वह सर के कितना करीब आ गया है। अकेलेपन से दम घुट रहा था तभी सर की यहाँ बदली हुई। तब तक कहने लायक कोई दोस्त उसका नहीं था। वह अपनी निजी जिंदगी में किसी और को दखल देने नहीं देता था।

वापस जाते वक्त सर मुड़कर कहा, "शाम को कमरे में आना, कुछ किताब दे दूँगा।"

उसने हामी भरी। सर के दूर निकलने तक वह देखता रहा। धूप उतर रही थी। सब लोग जा चुके थे। कमर का छत से कबूतर शोर मचाते हुए उड़ गए।

मलयालम : महिला मानस की कहानियाँ / (131)



## डॉ. आरसु



पूरा नाम : भार. सुरेन्द्र

जन्म : 1950, कालिकट (केरल)।

शिक्षा : एम.ए., पीएच.डी. हिंदी कालिकट विश्वविद्यालय, केरल से।

लोक : स्वातंत्र्योत्तर हिंदी उपन्यास पर विदेशी संस्कृति का प्रभाव।

आ.यापन : पुरस्कृत साहित्यकार 1977-1984, सरकारी कॉलेज, कालिकट, 1995-2011, कालिकट विश्वविद्यालय, 1998 में प्रोफेसर, 2008-2010 आचार्य और अध्यक्ष, 2012-2015 तक केन्द्रीय विश्वविद्यालय केरल में।

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संप्रति : विजिटिंग प्रोफेसर, गाँधी अध्ययन केंद्र, कालिकट विश्वविद्यालय, केरल।

संपर्क : साकेत, पोस्ट-चेलेन्द्रा, जिला - मलप्पुरम, केरल - 673634।

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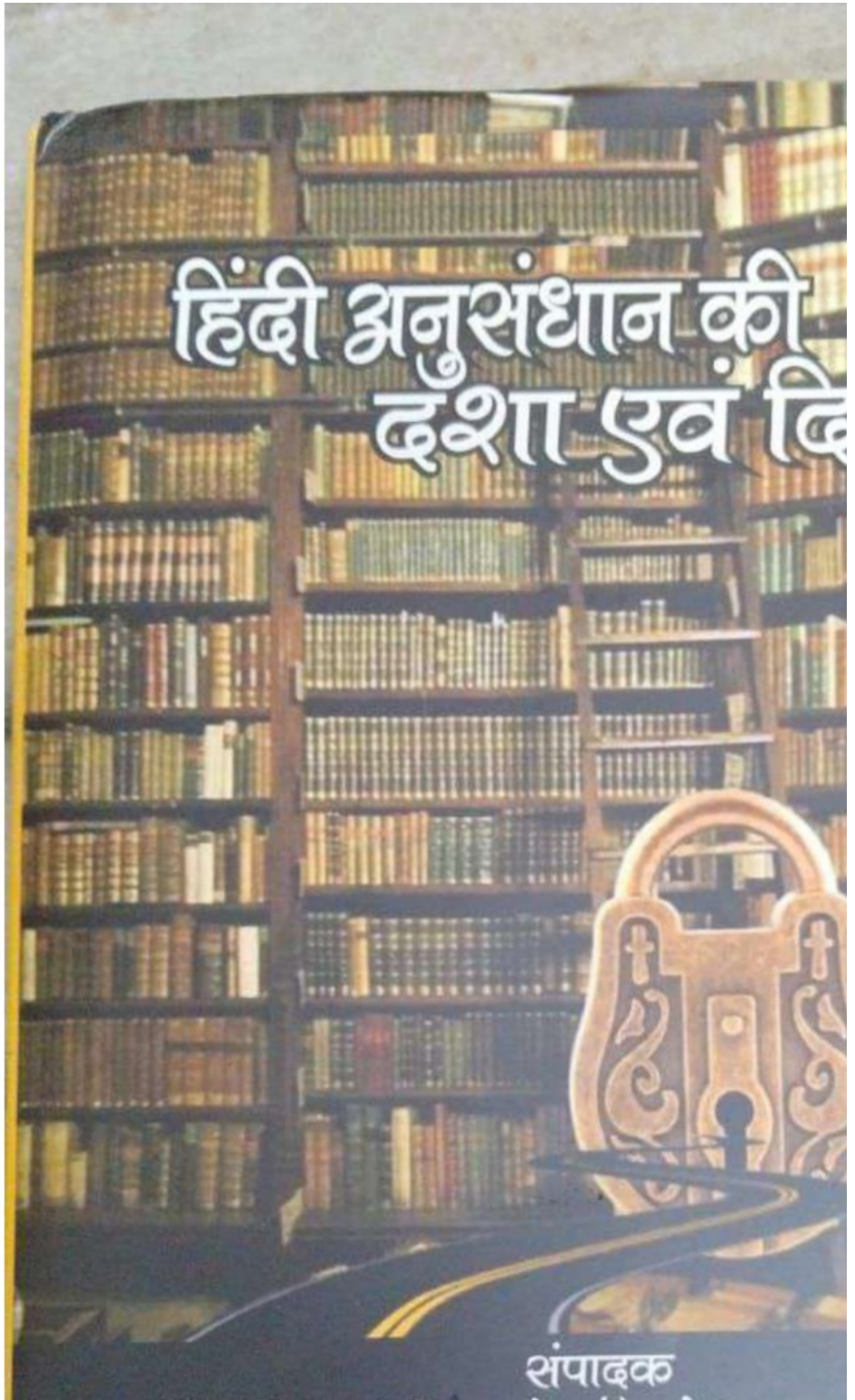
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दूरभाष : 011-45647564, 7217610640

आवरण पृष्ठ : दीनानाथ पाटिल

प्रथम संस्करण : 2023

ISBN : 978-81-965778-0-3

© : डॉ. मोनिका देवी

मूल्य : 495/-

मुद्रक : एस. के. ऑफसेट, दिल्ली

Hindi Anusandhan ki dashaAvam Disha : Editor



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जन्म : कादरगढ़, जिला शामली (उत्तर प्रदेश)

शिक्षा: प्रारंभिक शिक्षा ग्रामीण विद्यालय में, स्नातक और स्नातकोत्तर शिक्षा मेरठ के चौधरी चरण सिंह विश्वविद्यालय से, दक्षिण भारत हिंदी प्रचार सभा मद्रास से एम.फिल्. और उस्मानिया विश्वविद्यालय हैदराबाद से हिंदी साहित्य में पी-एच.डी.। हैदराबाद के ही प्रख्यात स्वयत्त निजाम कॉलेज से अनुवाद अध्ययन में डिप्लोमा।

प्रकाशित पुस्तकें : 15 पुस्तकें, विदेश में राष्ट्रीय एवं अंतरराष्ट्रीय संगोष्ठियों का आयोजन 20, 'अस्तित्व की तलाश में सिमरन' किन्नर जीवनीपरक उपन्यास है जिस पर पी-एच.डी. और एक एम. फिल्. शोध कार्य हो चुका है, देश विदेश से प्राप्त सम्मान 90 (संपादित पुस्तक)।



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मूल्य : 495/-

ISBN : 978-81-965778-0-3



आवर्ण पृष्ठ : दीनानाथ पाटिल