



**TELANGANA SOCIAL WELFARE RESIDENTIAL  
DEGREE COLLEGE FOR WOMEN, WARANGAL  
EAST**



*(Affiliated to Kakatiya University)*

Rangashaipet, Warangal-506005, Telangana India

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***3.3.1 Number of research papers published per teacher in the Journals as notified on UGC CARE list during the last five years***

**Research Article Titles**

1. Theme of Environment in Margaret Atwood's MaddAddam Trilogy
2. Synthesis of Phyto based nanoparticles
3. Antimicrobial activity of Eyeliner extracted from Natural Sources (Castor oil & Sandal wood)
4. GEOMETRICAL APPROACH FOR CHARACTERIZATION OF SOIL CALCAREOUS IN SEMI ARID REGION OF TELANGANA STATE INDIA
5. Biogenic synthesis and characterization of Metal Sulphide nanocomposites and its application to seed germination
6. Challenges in Scrum Agile Development
7. A Novel Approach in Designing pantomime pointer
8. Low complexity Early Employee Attrition Analysis Using Boosting and Non-Boosting MI Technique
9. Review on Agile Modelling for Distributed development



10. Employee Attrition prediction based on Grey wolf Optimization and Deep Neural networks
11. Analytical Survey on Prediction of Employee Attrition Non Parametric Tuning Algorithms
12. Bioethanol production from *Ixora coccinea* and *Quisqualis indica* flowers
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16. Fekete-Szegő inequality of bi-starlike and bi-convex functions of order  $b$  associated with symmetric  $q$ -derivative in conic domains
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23. Drip irrigation is a sustainable method for growing vegetables in Telangana
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26. studies on physico chemical variations of budharam lake in relation to seasonal variations and its productivity
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28. A study on various home-based strategies strengthen the immune system during covid
29. Impact of covid 19 on Environmental climate, people livelihood, and their Health
30. Employees' Opinion on Causes of Stress in IT sector"
31. Socio-Economic conditions of Tribal Communities in Telangana
32. Changing of Socio-Economic and cultural life of Lambadas with special reference to Nalgonda District (1956-2014 AD)
33. Dynamic Support Range based Rare Pattern Mining over Data Streams" International Journal of Advanced Computer Science and Applications(IJACSA)
34. Rare pattern Mining from data Stream using Hash-Based Search and Vertical Mining
35. Variations in the severity of symptoms, DAS28 and Disability index among Vata Predomination Deha-Prakriti individuals of Amavata-An Analytical Observational Study
36. Significance of Nyayas (Maxims) in Understanding Philosophical Aspects of Ayurveda: A Critical Review.
37. Significance of Shringagrahika Nyaya (maxim) in understanding Charaka Samhita in context to the commentary of Chakrapani.
38. Ancient archives of Deha-Prakriti (Human body constitution) in Ayurvedic Literature: A Critical Review.
39. A panoramic review of 'Concept of Prakriti' in ancient Indian literature.
40. Association of Anaemia & Urinary Tract Infections with Amavata (~Rheumatoid Arthritis) – A matched case-control study carried out at Jamnagar, Gujarat, India.



41. Influence of Deha-Prakriti (Body Constitution) in the manifestation of disease in context to Amavata (Rheumatoid Arthritis) - An appraisal
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47. రామచంద్ర మౌళి సాహిత్యంలో వస్తు వైవిధ్య చిత్రణ-ఒక పరిశీలన
48. Influence of Brechtian Theory in Girish Karnad's Dramas
49. Indian's New Education Policy 2020: An Analysis
50. Themes and Techniques in James Joyce's Clay
51. Various Themes and Techniques used in Light Out
52. A Critical Examination of the Scientific Significance of Roopa Pai's 'The Gita for Children' in the Context of Contemporary Living



## Research Article

**Faculty Name: G. Suresh Kumar**  
**Name of the Department: English**



## Theme of Environment in Margaret Atwood's MaddAddam Trilogy

G. Suresh Kumar

Of late, the main focus of a section of the writers worldwide is on sustained environmental destruction and its fatal effects. The writers tried to create awareness among the people about the need of the hour to keep ecological balance lest we face the dooms day. Eco-criticism is an art of interpreting environment and the factors led to its destruction and the impending danger to the mankind. It is the study of the relationship between literature and the environment. It is a new trend in the twenty-first century English fiction and non-fiction. Environmental degradation is one of the crucial problems that we face today. Senseless human interventions, modern industrial developments and technology, the green house gas emissions, depletion of water resources, deforestation, excessive use of pesticides, electronic wastes, melting of snow caps, raising of water levels of oceans, deforestation, radio nuclei and their emissions etc are some of the issues that result in the sterility of nature and it arises from man's indifference towards conservation of nature.

Margaret Atwood is an outstanding environmental fiction writer in Canada. She needs no introduction and has been well-known for her assessment of wilderness and ecological issues. The crux of her fictional works primarily concerns environmental cataclysm owing to the expansion of science and technology and its ill effects. The modern mechanization of nature and its objectification as a commodity is the root cause of the precarious ecological situation today. With respect to the probable ecological disasters that humanity may possibly face, the ecological threat has become the central discussion among the scientific as well as the literary circles. Among other literary critics and novelists, Margaret Atwood, one of the most acknowledged environmentalists, deals with this issue in her trilogy. In *Oryx and Crake* (2003), *The Year of the Flood* (2009) and *MaddAddam* (2013) she creates a dystopic narrative that depicts the collapse of civilization, warning her readers about the impending peril if the callous attitude of the man towards nature continues. Against this background, Atwood makes a meticulous criticism of the abuse of nature and possible consequences of it.



**Faculty Name: Kezia Elizabeth**  
**Name of the Department: Microbiology**



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## A GEOMETRICAL APPROACH FOR CHARACTERIZATION OF SOIL CALCAREOUS IN SEMI-ARID REGION OF TELANGANA STATE, INDIA

R. UMA DEVI<sup>1\*</sup>, D.B. SURESH BABU<sup>2</sup>, KEZIA ELIZABETH<sup>1</sup>, K. BALACHANDU<sup>3</sup> AND J. SWARAJ<sup>4</sup>

<sup>1</sup>GSS, GITAM (Deemed to be University), Hyderabad 502 329, Telangana State, India

DBS Institute of Technology, Nellore 524 201, Andhra Pradesh State, India

<sup>3</sup>Dept. of CIVIL Engineering, BVRIT, Hyderabad 502 313, Telangana State, India

Environmental Pollution Training and Research Institute (EPTRI),

Hyderabad 500 032, Telangana State, India

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### ABSTRACT

Soils containing a high amount of calcium carbonate are identifying as calcareous soils. This type of soil severely affects the plant's growth as they tend to be low in nutrient availability and organic matter. An extensive study was conducted to characterize the calcareousness in Zaheerabad Mandal, Telangana State, India. A total of 48 geo-referenced soil samples were collected in five villages and analyzed for soil texture, soil-water availability, hydro geomorphology, and free calcium carbonate. GIS-based soil characterization is done with Arc GIS - 10.3 software and verified with the ground truth data. The observations showed that 34.14 % of the study area is affected with 35-60% of soil calcareousness, which indicated high calcareousness, followed by slight soil calcareousness in 32.42 % of the study area, i.e., 15-35% of calcareousness and 31.54% of the study area is free from calcareousness. This characterization of soil calcareousness alarmed the inferior cultivation methods in the study area and alerting the farmers for better land management by avoiding high pH substances such as pesticides and synthetic fertilizers.

**KEY WORDS:** Soil Calcareousness, Soil texture, Soil - water availability, Hydro geomorphology, Calcium carbonate

### INTRODUCTION

The quantity of calcium carbonate present in the soil indicates the calcareousness of the soil. Nowadays, calcareous soils covering almost 30% of the earth's surface, and the level of calcium carbonate in these areas varies widely from a few "%" to "95%" (Marsh, 2003; Silvestri *et al.*, 2020). A large amount of calcium carbonate in soils affects the various soil properties related to the plant's growth, such as nutrient availability, soil crusting, soil - water capacity, etc. (Song *et al.*, 2019). The desert, arid, and semi-arid countries mainly contain calcareous soils due to two reasons. The first is naturally available rich calcium like basalts, and the second reason is the frequent alteration of dry and wet periods. These

long dry seasons generally not favourable to deep leaching the solutions in soils. This type of soil usually has a pH above "7", and in some cases, pH may reach "8.5". If the soils contain sodium carbonates, then the pH may cross "9" also. CaCO<sub>3</sub> can concentrate into tough layers in some soils, termed caliche, which is impermeable to water and plant roots (Cross, 2017). The availability and quality of irrigation water in low rainfall regions lead to constraints in the agricultural sector and create several irrigation management problems. The water from all the sources naturally contains various inorganic salts. These salt substances from irrigation water enter into soil profile considerably to such high concentrations and then show their impacts in multiple forms. These may modify soil structure,

<sup>1</sup>Professor, <sup>4</sup>Scientist

Corresponding author's email: urandhi@gitam.edu





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<sup>1</sup>GSS, GITAM (Deemed to be University), Hyderabad 502 329, Telangana State, India

DBS Institute of Technology, Nellore 524 201, Andhra Pradesh State, India

<sup>3</sup>Dept. of CIVIL Engineering, BVRIT, Hyderabad 502 313, Telangana State, India

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long dry seasons generally not favourable to deep leaching the solutions in soils. This type of soil usually has a pH above ""7"", and in some cases, pH may reach ""8.5"". If the soils contain sodium carbonates, then the pH may cross ""9"" also. CaCO<sub>3</sub> can concentrate into tough layers in some soils, termed caliche, which is impermeable to water and plant roots (Cross, 2017). The availability and quality of irrigation water in low rainfall regions lead to constraints in the agricultural sector and create several irrigation management problems. The water from all the sources naturally contains various inorganic salts. These salt substances from irrigation water enter into soil profile considerably to such high concentrations and then show their impacts in multiple forms. These may modify soil structure,

<sup>1</sup>Professor, <sup>4</sup>Scientist

Corresponding author's email: urandhi@gitam.edu



## ANTIBACTERIAL ACTIVITY ASSESSMENT OF EYELINER EXTRACTED FROM NATURAL SOURCES (CASTOR OIL & SANDALWOOD)

T. APARNA\*, N. JYOTHI, M. KEZIA ELIZABETH, D.S.N. PRAVEENA,  
K. SWETHA AND S. SHAILAJA

*Department of Microbiology & Biotechnology, Avanthi Degree & P.G. College, Narayanaguda, Hyderabad, India.*

### ABSTRACT

Our nature is a valuable source of various valuable compounds, which can be used in treatment of some diseases and to enhance our beauty. Traditionally natural products extracted from plants were used to make many cosmetics, one such product is eyeliner (used in present study). The natural eyeliner was extracted from Castor oil, Sandalwood and Bronze metal by traditional method. The crude extract was dissolved in standard solvents like ethanol and its antibacterial activity of crude extract was evaluated against bacterial cultures of *Staphylococcus*, *E.coli*, *Klebsiella*. Simultaneously, the antibacterial activity of even the commercial eyeliner was evaluated against the bacterial cultures *staphylococcus*, *E.coli*, *Klebsiella*. The inhibitory activity of natural eyeliner and commercial eyeliner were compared. The focus of present study lies in the investigation of antimicrobial activity of the naturally extracted crude eyeliner and commercial eyeliner. From the analysis it was found that crude extract of natural eyeliner is more effective against the bacterial test Organisms. The *staphylococcus* species was found to be more susceptible among the bacterial cultures tested. The crude extract of natural eyeliner containing castor oil, Sandalwood and metal bronze was found to be antibacterial. The common eye infections are caused by *Staphylococcus* and it was found that our natural product is showing antibacterial activity against the organism *Staphylococcus*. The Zone of inhibition was evaluated and the crude extract was found to be more effective against *Staphylococcus* as compared to commercial eyeliner. The outcome of the present study reveals that the natural eyeliner is found to be more antibacterial than the commercial eyeliner and useful effects of natural products.

**KEYWORDS:** *Natural eyeliner, Staphylococcus, Antibacterial activity, castor oil, sandalwood, bronze metal.*



T. APARNA

Department of Microbiology & Biotechnology, Avanthi Degree  
& P.G. College, Narayanaguda, Hyderabad, India.

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### INTRODUCTION

Nature is a valuable source of many plants that have medicinal value, which can be used for therapy and even to enhance the beauty. Traditionally, the natural products extracted from plants were used in preparation of eyeliner, lipstick and many other cosmetic products. The use of eyeliner can be traced back to more than

well assay. The assay media employed for agar well assay is Mueller-Hinton agar<sup>5</sup>.

### Method

The castor oil around 100ml is filled into the bronze lamp and is lighted. A thick layer of sandalwood is applied on metal bronze plate, allowed to dry, and then inverted upon the lamp in such a way that there is a gap between the bronze plate and the lamp. The fire lamp of



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## **Synthesis of Phyto Based Metal Nanoparticles: A Green Approach**

**M. Kezia Elizabeth <sup>a</sup>, R. Uma Devi <sup>b\*</sup>, K. Phani Raja <sup>b</sup> and K. Bala Krishna <sup>c\*</sup>**

<sup>a</sup> Department of Environmental Science, GITAM (Deemed to be University), Visakhapatnam, 530045, India.

<sup>b</sup> Department of Chemistry, GITAM (Deemed to be University), Hyderabad Campus, 502329, India.

<sup>c</sup> Department of Chemistry, GITAM (Deemed to be University), Visakhapatnam, 530045, India.

### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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**Review Article**

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### **ABSTRACT**

In recent years, changing material properties is gaining a significant research interest. Besides, applying the fundamentals of basic science to different applications is also more encouraged and on-demand. In this view, material science has become a common interest in various fields, starting from chemistry, physics, biology, and engineering. The common platform for all these sectors is nanoscience and nanotechnology. The main motto is changing material properties while converting it from bulk to its nano size level. The changes in properties like optical, mechanical, and others make the synthesized nanomaterials for implementation in various applications for humankind. Besides the success of this idea, the toxicity of the materials used during the synthesis becomes a question to researchers, as it hinders the sustainable development concept. If not total, a certain decrement in the toxic material utilization gives a pavement towards green technology. In this view, various researchers adopted plant materials as sources for synthesizing the nanomaterial in this decade. The present review highlights the utilization of coinage metal (Ag, Au, and Cu) salt to synthesize nanoparticles by using plant sources like leaf, bark and their characterization study along with their applications.

**Keywords:** Nano particles; green chemistry; coinage metals; plant extracts; nano technology.

\*Corresponding author: E-mail: urandh@gitam.edu



**Faculty Name: Neeli Deepa**  
**Name of the Department: Economics**

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**A Study on Impact of Covid-19 Pandemic on the Indian Economy**

**N. Deepa, M. Ramachandran**  
Department of Economics, TSWRDCW, Warangal East, India  
REST Labs, Pothapuram, Kaveripattinam, Krishnagiri-635112, India.  
[drdeeparammohan@gmail.com](mailto:drdeeparammohan@gmail.com), [ramachandran.marickam@restlabs.in](mailto:ramachandran.marickam@restlabs.in)

**Introduction**

The covid-19, pandemic impacted the world in severe manner, whether we talk about health, economies or nation growth. During covid-19 crisis many countries implemented long lockdown which affect their economies, supply chain, turnover and what not, in every segment. Transportation, communication etc. all get adversely affected. And various other concerns were raised during this covid-19 time. INDIA could also see the severe issues if will not get prepared for this, many policies have to be framed, many works have to be done, by government if they want to minimize the impact on economies, health and such issues. Covid-19 have posed serious issues in front of India, it is very difficult to face the covid-19 outbreak as being very populated country. Having concern over this issue central and state took major steps but unfortunately it turns out to be disruptive.

**1. Introduction**

The manufacturing sector is a vital contributor to the GDP of nations and thus to their development as well. This sector thus has a huge contribution to the global economy. Currently, high value and high margin products are the focus of most industries globally. With a GDP contribution of 2.31% to the world economy in 2019 and GDP adjusted for PPP of 8.27% of the world economy in 2020, India is one of the fastest growing economies and the fifth largest economy in the world. However, a major economic slowdown with rising unemployment, declining demands and consumption expenditure especially in rural areas, etc. was reported by several economists and electronic media. To add to the burden of this slowdown, India has been in lockdown for 21 days till 14<sup>th</sup> April 2020 in the wake of the COVID-19 pandemic. The top 10 states of India which contribute 70% to India's GDP have been severely affected by this pandemic, leading to decline in growth performance. Health concerns have heightened in the wake of this pandemic but India's quality in health facilities ranks much lower compared to the world average. India's contribution to the health sector in yearly budgets is very less which is especially highlighted during this pandemic. India's spending on the health sector does not reach the target of 2.25% and it is only 67,484 crore rupees i.e. just 1% of the GDP, according to the Union Budget of 2020-2021. This shows the doctor to patient ratio is just 1:1,457 and the nurse to patient ratio is 1:675 which is clearly fails to meet the WHO norms of 1:1,000 and 3:1,000 respectively. Per capita health expenditure is a mere 75\$ in which private spending accounts for 70% and public spending accounts for 30%. The above discussion highlights the deteriorating condition of India's health sector which has posed several challenges this year due to the COVID-19 pandemic. The major contributor to the growth of an economy is the active participation of a healthy working population, which highlights the correlation between the health crisis and the economic crisis. This paper presents some impacts that will be seen the Indian economy due to COVID-19 pandemic.

The lack of labor supply due to the COVID-19 has led to the shut-down of many manufacturing units throughout the country. After the first case in India reported in January 2020, the government of India declared a lockdown to contain the spread of the virus. This deranged the supply chain across the country, India is focusing on establishing a India as the main manufacturing sector for local and global markets, instead of China. China has lost most of its trading partners due to disruption in supply chain. In India, local supply chains are also being disturbed due to issues discussed in this paper. The impact of COVID-19 on the Indian economy and on supply chains in India is studied in this paper. A total of 18 critical barriers have affected the supply chain in India, according to this paper. One intention of this paper is to help researchers develop conceptual models to overcome these problems. The World Bank reported in January 2020 that owing to sharp downturn in the major economies and financial disruptions, the growth in all emerging economies is severely hampered. Economies need to take action by rebuilding macro-economic policy space, pursuing decisive reform to bolster governance and business climates, improving tax policy, promoting trade integration, and rekindling productivity growth while protecting vulnerable groups. However, the COVID-19 pandemic has been a major hurdle, restricting movements of economic agents within and outside a country. This health crisis has contributed to the global economic crisis due to restricted labor mobility, restricted transportation facilities, volatility in stock markets, fall in oil prices, etc. Certain parts of society which are more vulnerable to this crisis are facing major loss of income leading to poverty, malnutrition in children and lack of access to healthcare beyond COVID-19. Even with a slowdown in China, the virus has hit the entire world, 80% of world supply and demand (GDP), 65% of world manufacturing, and 41% of world manufacturing exports is contributed by leading economies like The United States, China, Japan, Germany, Britain, France and Italy. However, these economies are in the top-10 severely



## **Empowerment of Women through Financial Inclusion under the Self-Help Group Programme in Telangana**

- Neeli Deepa\*

### **Abstract**

*Financial resources, if effectively delivered to women in rural areas, can help them to make a meaningful improvement in their economic and social condition, and also reduce gender inequality. The membership in self-help groups have helped women gain more individual, entrepreneurial and social empowerment, and also empowerment as decision makers in the family, though there is still some space to improve it further.*

A country like India where the majority of the population is from the rural areas, the comprehensive financial inclusion of the population, especially of the poor and disadvantaged segments of the society, is considered a pre-condition for inclusive growth. Over the years, various institutional arrangements and financial inclusion models have been adopted such as agricultural credit cooperatives, bank nationalisation, regional rural banks, etc., which form important segments of rural financing system. Even though the institutional share in the total rural credit has increased over the years, there is still a large credit gap due to the formal processes, procedures and systems of the financial institutions. In addition, some segments of the population are even now deprived quite unaware about the advantages of the formal rural credit system. Studies do suggest that the rural poor are largely continuing to access finance from the local informal sources to carry out economic activities. Though self-help groups (SHGs) do provide a comprehensive pathway for financial inclusion, specially of women, there is a dire need to provide SHGs a smoother route to microcredit. In view of the importance of inclusion of women in various economic activities, this study was undertaken amongst women who had been members of SHGs in Adilabad, Mahabubnagar and Ranga Reddy districts of Telangana to understand how they perceived being empowered on various parameters. It finds that institutional training has helped women in enhancing their existing skills, and a majority of women have attained individual empowerment after joining the programme.

\* Head  
Department of Economics,  
TSWRDCW, Warangal East  
Email: drdeeparammohan@  
gmail.com

Key Words: Microfinance, Women Empowerment, Self-Help Groups.



**Faculty Name: Dr. V. Sunitha**  
**Name of the Department: Computer Science**



# Dynamic Support Range based Rare Pattern Mining over Data Streams

Sunitha Vanamala<sup>1\*</sup>, L. Padma Sree<sup>2</sup>, S. Durga Bhavani<sup>3</sup>

Lecturer, Department of CS, TSWRDCW, Warangal East, Warangal Telangana, India<sup>1</sup>

Professor, Department of ECE, VNR Vignan Jyothi Institute of Technology and Science, Hyderabad, Telangana, India<sup>2</sup>

Retd. Professor, School of Information Technology, JNTU, Hyderabad, Telangana, India<sup>3</sup>

**Abstract**—Rare itemset mining is a relatively recent topic of study in data mining. In certain application domains, such as online banking transaction analysis, sensor data analysis, and stock market analysis, rare patterns are patterns with low support and high confidence that are extremely interesting when compared to frequent patterns. Numerous applications generate large amounts of continuous data streams. We require efficient algorithms capable of processing data streams in order to analyze them and find unique patterns. The strategies developed for static databases cannot be used to data streams. As a result, we require algorithms created expressly for data stream processing in order to extract critical unique patterns. Rare pattern mining is still in its infancy, with only a few ways available. To address this is developed the Dynamic Support Range-based Hybrid-Eclat Algorithm (DSRHEA), an Eclat-based technique for mining unique patterns from a data stream using bit-set vertical mining with two item-based optimizations. The detected patterns are kept in a prefix-based rare pattern tree that uses double hashing to maintain the unusual pattern in the data stream. Testing showed that the proposed method did well in terms of how long it took to run, how many rare patterns it made and accuracy.

**Keywords**—Depth first search; Hybrid-Eclat algorithm; SRP-tree; itemset; frequent-pattern support; rare-pattern support; pivot; data stream; rare itemset; infrequent itemset

## I. INTRODUCTION

Information systems play a vital role in identifying trends, making decisions, and adapting to the emerging changes in the market. In the current global scenario, wherein the organisations have to be sharp in its analysis of trends, there is a need for entities to be adaptable to new and dynamic solutions that can provide insights in effective ways. Utility mining and pattern detection solutions play a big role in the FMCG market [1].

Many of the earlier studies focusing on the application of business intelligence solutions in the pattern mining or utility mining space have discussed leveraging the data from information systems for analysis. However, there are very few systems among the explored models that exhibit the scope for dynamic analysis models. It is imperative that the current condition in the competitive scenario requires entities to focus on conditions wherein dynamic selection of data is targeted for informed decisions. In an illustrative scenario of a supermarket environment, the frequent mining set possibilities keep emerging over time and could lead to a paradigm shift in how each pattern or itemset billing happens periodically.

Thus, there is a need for consistent follow-up of emerging trends and periodic analysis that shall help in covering the process effectively. In this manuscript, the focus is on developing a linear and systematic approach for dynamic analysis of the pattern set designs, which shall help in accomplishing the requisite tasks. The goal of this paper is to make a dynamic model of how items are classified into different labels based on the patterns that appear in the data systems over a certain amount of time.

To speed up the process of discovering new association rules, it is crucial to identify common patterns in a dataset. Because association rules presume that every record in the database has the same occurrence frequency, they can only utilize one min-SUP per record. There are several drawbacks of mining frequent itemsets (as well as frequent patterns) with a simple min-SUP constraint in a non-uniform database. Finding patterns involving uncommon items will be impossible if min-SUP is set very high. In order to recognize patterns that include both common and unique things, we need to reduce min-SUP to a lower value. A combinatorial explosion may happen because these common objects are linked together in all possible ways. This could lead to too many patterns depending on the needs of the individual and the application.

The model proposed in this study is adapted on the basis of pivot, support, for the itemset conditions emerging in the domain. In the further sections of this report, the emphasis is on related work review, wherein key studies in the domain are explored to understand the critical success factors and constraints to consider in developing a comprehensive solution. Followed by, in the further section, the methods adapted for the model are discussed, that can help in accomplishing the proposed model. Experimental study is discussed in Section 4 and conclusion discussed in Section 5.

## A. Motivation

Because rare situations represent considerable obstacles for data mining methods [2], they deserve special attention. The fundamental mining difficulties, on the other hand, have not yet been adequately investigated. Indeed, much of the literature in this area is devoted to adapting the Apriori [3]-based generic itemset mining framework to various exemptions of the frequent-itemset as well as frequent association ideas [4]. Whereas these methods often cover a considerable amount of the search-space for uncommon itemsets and relationships, they are nevertheless insufficient because several rare-associations are ignored owing to excessive computational

\*Corresponding Author  
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## Rare Pattern Mining from Data Stream Using Hash-Based Search and Vertical Mining



Sunitha Vanamala, L. Padma Sree, and S. Durga Bhavani

**Abstract** Rare itemset mining is the emerging research domain in data mining. Patterns with low support and high confidence are referred to as Rare Patterns, which are very interesting compared to frequent Patterns in certain application domains like analysis of network logs, online customer purchase behavior, online banking transaction analysis, sensor data analysis, stock market data analysis. Many applications generate large volumes of the continuous data streams. To analyze such data streams and to identify rare patterns, we need efficient algorithms that can process data streams. Many research articles on rare pattern mining are available for static databases. However, it is not possible to apply the algorithms designed for static databases to data streams. Hence, we need algorithms that are specifically designed for data stream processing, to mine important rare patterns. Rare pattern mining from the data stream is in the budding stage and only a few algorithms are available. To address this, we have proposed algorithm HEclat-RPStream, an Eclat based method to mine rare patterns from a data stream using a vertical mining with bitsets. The discovered patterns are maintained in a prefix-based rare pattern tree, it uses double hashing to maintain a rare pattern in the data stream. The algorithm also uses the Breadth First Search (BFS) and Depth First Search (DFS) to discover interesting large itemsets. To handle data streams, we have used a time sensitive sliding window approach which captures most recent patterns. The pruning technique based on two items is used to optimize the performance. The experimental results of the proposed method demonstrated good performance concerning execution time and the total number of rare patterns generated.

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S. Vanamala (✉)  
Department of CS, TSWRDCW, Warangal East, Warangal, Telangana, India

L. P. Sree





**Faculty Name: Dr. S. Vaijyanthi**  
**Name of the Department: Botony**



# DRIP IRRIGATION IS A SUSTAINABLE METHOD FOR GROWING VEGETABLES IN TELANGANA

<sup>1</sup> Vaijyanthi S and <sup>2</sup> Bagyanarayana G

<sup>1</sup> Degree College Lecturer <sup>2</sup> Dept. of Botany Osmania University (Rtd Prof)

<sup>1</sup> Dept of Botany

<sup>1</sup> TSWRDC FOR (W) WARANGAL EAST, Warangal, India

## Abstract

The country's primary needs for agriculture and economic development are land and water. By 2025, the International Water Management Institute (IWMI) predicts that one-third of the world's population would experience complete water scarcity. More than 80% of the nation's usable water resources are used by agriculture. The goal of the Micro Irrigation Scheme (MI), which focuses on drip irrigation, is to cover more ground with effective irrigation techniques. By efficiently supplying irrigation water to the root zone of plants using drip irrigation, traditional losses like deep percolation, runoff, and soil erosion are reduced. Additionally, it enables the use of irrigation water, fertilisers, insecticides, and other water-soluble substances, leading to larger yields and better-quality produce. The drip irrigation system is seen to be the answer to many issues in dry land agriculture. Appropriate drip irrigation management is influenced by a variety of variables, such as system design, soil properties, crop and growth stage, environmental conditions, etc. These influences can be taken into account when creating an effective scheduling system that determines the quantity and timing of drip irrigation. In order to achieve high water and nutrient use efficiency while improving crop productivity, it provides the optimal vehicle for delivering nutrients in a timely and effective manner. Commercial vegetable production also requires intense management to achieve these goals.

## Keywords

Water resources, Water scarcity, Drip irrigation, Vegetable production.

**1. Introduction :** The wise use of the available water resources is crucial to the overall expansion of the agricultural sector and the anticipated GDP growth rate. Therefore, central and state governments and numerous



**Name of the Faculty: Dr. K. Rajya Laxmi**  
**Name of the Department: Mathematics**



# Second Hankel determinant with Fekete-Szegő parameter for some subclasses of bi-univalent functions using a symmetric $q$ -derivative operator

K. Rajya Laxmi\* and R. Bharavi Sharma<sup>1</sup>

\*Department of Mathematics, TSWRDC, Warangal-East, Telangana State, India

<sup>1</sup>Department of Mathematics, Kakatiya university, Telangana, 506009, India

\*Corresponding author

E-mail: rajyalaxmi2206@gmail.com\*, rbharma005@gmail.com<sup>1</sup>

## Abstract

In this paper we have discussed about second Hankel determinant of Ma-Minda starlike bi-univalent and Ma-Minda convex bi-univalent functions in the open unit disc  $\Delta$  subordinate to a starlike univalent function whose range is symmetric with respect to the real axis involving the Fekete-Szegő parameter  $\lambda$ .

2010 Mathematics Subject Classification. 30C45, 30C50, 30C80.

Keywords. bi-univalent functions, subordination, second Hankel determinant, Toeplitz determinant, Fekete-Szegő parameter.

## 1 Introduction

Let  $\mathcal{A}$  be the class of all analytic functions  $f$  of the form

$$f(z) = z + \sum_{n=2}^{\infty} a_n z^n; \quad (1.1)$$

in the open unit disc  $\Delta = \{z : z \in \mathbb{C} \text{ and } |z| < 1\}$ .

Let  $\mathfrak{S}$  be the subclass of  $\mathcal{A}$  consisting functions of the form (1.1) which are also univalent in  $\Delta$ . For any two functions  $f$  and  $g$  analytic in  $\Delta$ , we say that the function  $f$  is subordinate to the function  $g$  in  $\Delta$  and it can be written as  $f \prec g$ , if there exists a Schwartz function  $\omega$ , which is analytic in  $\Delta$  with  $w(0) = 0, |w(z)| < 1 (z \in \Delta)$  such that  $f(z) = g(w(z))$ . In view of Koebe  $\frac{1}{4}$  theorem, every function  $f \in \Delta$  has an inverse  $f^{-1}$ , defined by

$$f^{-1}(f(z)) = z, (z \in \Delta), f(f^{-1}(w)) = w (|w| < r_0(f); r_0(f) \geq \frac{1}{4}); \quad (1.2)$$

In fact the inverse function is given by

$$f^{-1}(w) = w - a_2 w^2 + (2a_2^2 - a_3) w^3 - (5a_2^3 - 5a_2 a_3 + a_4) w^4 + \dots \quad (1.3)$$

A function  $f \in \mathcal{A}$  is said to be a bi-univalent function in  $\Delta$  if both  $f$  and  $f^{-1}$  are univalent in  $\Delta$ . Lewin [17] introduced the class  $\Sigma$  of bi-univalent functions in 1967 and showed that  $|a_2| \leq 1$  for every  $f \in \Sigma$ . Subsequently, Brannann and Clunie [4] conjectured that  $|a_2| \leq \sqrt{2}$  for bi-starlike functions and  $|a_2| \leq 1$  for bi-convex functions. Only last estimate is sharp and equality occurs only

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# Fekete-Szegő inequality of bi-starlike and bi-convex functions of order $b$ associated with symmetric $q$ -derivative in conic domains

Bharavi Sharma Rayaprolu, Rajya Laxmi Kalikota and Nanjundan Magesh

**Abstract.** In this paper, two new subclasses of bi-univalent functions related to conic domains are defined by making use of symmetric  $q$ -differential operator. The initial bounds for Fekete-Szegő inequality for the functions  $f$  in these classes are estimated.

**Mathematics Subject Classification (2010):** 30C45, 30C50.

**Keywords:** Analytic functions, bi-univalent functions, bi-starlike functions, bi-convex functions, conic domain, Fekete-Szegő inequality,  $q$ -differential operator, univalent functions.

## 1. Introduction

Let  $\mathcal{A}$  denotes the set of all functions which are analytic in the unit disc

$$\Delta = \{z \in \mathbb{C} : |z| < 1\}$$

with Taylor's series expansion of the form

$$f(z) = z + \sum_{n=2}^{\infty} a_n z^n, \quad (1.1)$$

which are normalized by  $f(0) = 0, f'(0) = 1$ . The subclass of  $\mathcal{A}$  consisting of all univalent functions is denoted by  $\mathcal{S}$ . A function  $f \in \mathcal{A}$  is said to be a starlike function if

$$\Re \left( \frac{z f'(z)}{f(z)} \right) > 0 \quad (z \in \Delta).$$



## Third Hankel Determinant for A Class of Functions with Respect to Symmetric Points Associated With Exponential Function

GANESH K  
JMTK, Karimnagar  
Telangana, INDIA

BHARAVI SHARMA R  
Kakatiya University  
Telangana, INDIA

RAJYA LAXMI K  
TSWRDC, Warangal East  
Telangana, INDIA

**Abstract:** The purpose of the present work is to determine the possible upper bound of third order Hankel determinant for the functions starlike and convex with respect to symmetric points associated with exponential functions.

**Key-Words:** Analytic function, Univalent function, Subordination, Fekete-Szegő inequality, Hankel determinant, Symmetric points.

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### 1 Introduction

The class of all analytic functions  $f$  with  $f(0) = 0$  and  $f'(0) = 1$  in the unit disc  $E = \{z \in \mathbb{C} : |z| < 1\}$  is denoted by  $\mathcal{A}$  and has the Taylor's series expansion of the form given by

$$f(z) = z + a_2 z^2 + a_3 z^3 + \dots \quad (1)$$

The class of functions that are univalent and analytic in  $E$  is denoted by  $\mathcal{S}$ . The family of functions that are analytic in  $E$  and maps  $E$  onto the right half plane is denoted by  $\mathcal{P}$  and functions of this class are of the form

$$p(z) = 1 + p_1 z + p_2 z^2 + p_3 z^3 + \dots \quad (2)$$

For two analytic functions  $g$  and  $h$  in  $E$ ,  $g$  is subordinate to  $h$ , denoted as  $g \prec h$ , if there is an analytic function  $w$  in  $E$  with  $w(0) = 0$  and  $|w(z)| < 1$  such that  $g(z) = h(w(z))$ , for all  $z \in E$ . If  $h$  is univalent in  $E$ , the subordination is same as  $g(0) = h(0)$  and  $g(E) \subseteq h(E)$ . Pommerenke ([35], [36]) defined the Hankel determinant  $H_k(n)$ , for positive integers  $k, n$  for the functions in  $\mathcal{S}$  of the form (1), as below:

$$H_k(n) = \begin{vmatrix} a_n & a_{n+1} & a_{n+2} \dots & a_{n+k-1} \\ a_{n+1} & a_{n+2} & a_{n+3} \dots & a_{n+k} \\ a_{n+2} & a_{n+3} & a_{n+4} \dots & a_{n+k+1} \\ \dots & \dots & \dots & \dots \\ \dots & \dots & \dots & \dots \\ a_{n+k-1} & a_{n+k} & a_{n+k+1} \dots & a_{n+2k-2} \end{vmatrix} \quad (3)$$

For fixed positive integers  $k$  and  $n$  the growth of  $H_k(n)$  as  $n \rightarrow \infty$  has been determined by Noor [30], with bounded boundary. The Hankel determinant for exponential polynomials was studied by

Ehrenborg [9]. The Hankel determinant of different orders is obtained for different values of  $k, n$ . For instance, when  $k = 2$  and  $n = 1$ , the determinant

$$H_2(1) = \begin{vmatrix} a_1 & a_2 \\ a_2 & a_3 \end{vmatrix} = |a_3 - a_2^2|, (a_1 = 1) \quad (4)$$

This determinant is the particular case of estimating the greatest value of the functional  $|a_3 - \mu a_2^2|$  for functions in  $\mathcal{S}$ , where  $\mu$  is real or complex. This is known as the Fekete-Szegő [10] problem. Many researchers like Ali et al. ([1],[2]), Cho and Owa ([6],[7]), Koehn and Merkes [16], Lewandowski et al. [21], Ma and Minda [24], Magesh et al. [25], Murugusundaramurthy et al. [28], Ram Reddy and Sharma [39], Ravichandran et al. [40], Shanmugam et al. [41], Ram Reddy et al. [42], HariPriya and Sharma [12], Srivastava H.M. et al. [43], Tuneski and Darus [44] have studied Fekete-Szegő inequality for various subclasses of univalent analytic functions.

Now for  $k = 2, n = 2$ , it can be obtained that

$$H_2(2) = \begin{vmatrix} a_2 & a_3 \\ a_3 & a_4 \end{vmatrix} = |a_2 a_4 - a_3^2| \quad (5)$$

The maximum value of  $H_2(2)$  has been investigated by several authors. For instance the reader can see the work initiated by Hayman [13], Noonan and Thomas [29], Janteng et al. ([14],[15]), Bansal [5], Lee et al. [20], Liu et al. [23], Raina et al. [38], Ohran et al. [31], Laxmi and Sharma [18], Răducanu and Zaprawa [37]. Very recently, Zaprawa [47] shown a new direction in estimating the upper bound of the Hankel determinant for  $k = 2, n = 3$ , i.e.,  $H_2(3)$  for various



## SECOND HANKEL DETERMINANTS FOR SOME MA-MINDA SUBCLASSES OF BI-UNIVALENT FUNCTIONS

K. RAJYA LAXMI, R. BHARAVI SHARMA, AND K. GANESH

**ABSTRACT.** In this paper, we have investigated second Hankel determinants for some subclasses of Ma-Minda bi-univalent functions in the open unit disc  $\Delta$  and these results are generalization of results in [7] and [9].

**2010 MATHEMATICS SUBJECT CLASSIFICATION.** 30C45, 30C50, 30C80.

**KEYWORDS AND PHRASES.** Analytic functions; Univalent functions; Bi-univalent functions; Second Hankel determinants; Subordination.

### 1. INTRODUCTION

Let  $\mathcal{A}$  denote the class of all analytic functions  $f$  in the open unit disc  $\Delta = \{z \in \mathbb{C} : |z| < 1\}$  and normalized by the conditions  $f(0) = 0, f'(0) = 1$  which are of the form

$$(1) \quad f(z) = z + \sum_{n=2}^{\infty} a_n z^n$$

and  $\mathcal{S}$  be the subclass of  $\mathcal{A}$  consisting of all univalent functions. Let  $\mathcal{P}$  be the family of analytic functions  $p(z)$  in  $\Delta$  such that  $p(0) = 1$  and  $\operatorname{Re} p(z) > 0 (z \in \Delta)$ . According to Koebe one-quarter theorem, every function  $f \in \mathcal{S}$  has an inverse  $f^{-1}$  and  $f^{-1}$  need not be defined in the entire unit disc, satisfying

$$f^{-1}(f(z)) = z, (z \in \Delta), f(f^{-1}(w)) = w, (|w| < \frac{1}{4}).$$

In fact, the inverse function is given by

$$f^{-1}(w) = w - a_2 w^2 + (2a_2^2 - a_3) w^3 - (5a_2^3 - 5a_2 a_3 + a_4) w^4 + \dots$$

For any two functions  $f$  and  $g$  analytic in  $\Delta$ , we say that the function  $f$  is subordinate to  $g$  in  $\Delta$  and we write it as  $f(z) \prec g(z)$ , if there exists a Schwarz function  $w$ , in  $\Delta$  such that  $f(z) = g(w(z))$ .

The well known relation between the function in the class  $\mathcal{P}$  and the Schwarz function is given in [14] and is as follows.

$$p \in \mathcal{P} \iff p = \frac{1 + \omega}{1 - \omega}.$$



## Second Hankel Determinants and Fekete-Szegő Inequalities for Some Sub-Classes of Bi-Univalent Functions with Respect to Symmetric and Conjugate Points Related to a Shell Shaped Region

Rayaprolu Bharavi Sharma<sup>1</sup> and Kalikota Rajya Laxmi<sup>2,\*</sup>

<sup>1</sup> Department of Mathematics, Kakatiya University, Warangal, Telangana State, India 506009

<sup>2</sup> SR International Institute of Technology, Hyderabad, Telangana State, India, 501301

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**Abstract.** In this paper, we have investigated second Hankel determinants and Fekete-Szegő inequalities for some subclasses of Bi-univalent functions with respect to symmetric and Conjugate points which are subordinate to a shell shaped region in the open unit disc  $\Delta$ .

**Key Words:** Analytic functions, univalent functions, Bi-univalent functions, second Hankel determinants, Fekete-Szegő inequalities, symmetric points, conjugate points.

**AMS Subject Classifications:** 30C45, 30C50, 30C80

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### 1 Introduction

Let  $A$  be the class of all functions of the form

$$f(z) = z + \sum_{k=2}^{\infty} a_k z^k, \quad (1.1)$$

which are analytic in the open unit disc  $\Delta = \{z: |z| < 1\}$ . Let  $S$  be the class of all functions in  $A$  which are univalent in  $\Delta$ .

Let  $P$  denote the family of functions  $p(z)$  which are analytic in  $\Delta$  such that  $p(0) = 1$ , and  $\Re p(z) > 0$  ( $z \in \Delta$ ) of the form  $P(z) = 1 + \sum_{n=1}^{\infty} c_n z^n$ .

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\*Corresponding author. Email addresses: rbsharma005@gmail.com (R. B. Sharma), rajyalaxmi2206@gmail.com (K. R. Laxmi)





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5 **Fekete–Szegő inequalities for some subclasses of bi-univalent**  
6 **functions through quasi-subordination**

7 R. Bharavi Sharma  
8 *Department of Mathematics, Kakatiya University, Warangal*  
9 *Telangana State 506009, India*  
10 *rbsharma005@gmail.com*

11 K. Rajya Laxmi\*  
12 *SR International Institute of Technology, Hyderabad*  
13 *Telangana State 501301, India*  
14 *rajyalaxmi2206@gmail.com*

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19 In this paper, we have investigated Fekete–Szegő problems and coefficient estimates for  
20 some subclasses of bi-univalent functions defined in terms of quasi-subordination. These  
21 inequalities result in the bounds of the third coefficient in Maclaurin's series expansion  
22 in the unit disc.

23 *Keywords:* Analytic functions; univalent functions; bi-univalent functions; quasi-  
24 subordination; Fekete–Szegő inequalities.

25 *AMS Subject Classification:* 30C45, 30C50, 30C80

26 **1. Introduction**

27 Let  $A$  be the class of all functions of the form

$$f(z) = z + \sum_{k=2}^{\infty} a_k z^k \quad (1.1)$$

28 which are analytic in the open unit disc  $\Delta = \{z : |z| < 1\}$ . Let  $S$  be the class of all  
29 functions in  $A$  which are univalent in  $\Delta$ .

30 Let  $P$  denote the family of functions  $p(z)$  which are analytic in  $\Delta$  such that  
31  $p(0) = 1$ , and  $\Re p(z) > 0$  ( $z \in \Delta$ ) of the form  $P(z) = 1 + \sum_{n=1}^{\infty} c_n z^n$ . In view of  
32 Koebe one-quarter theorem, every function  $f \in S$  has an inverse  $f^{-1}$  defined in

\*Corresponding author.



# Upper Bound of Second Hankel Determinants for Certain Subclasses of Bi-univalent Functions Using Subordination

K Rajya Laxmi<sup>1</sup>, R Bharavi Sharma<sup>2</sup> and M Hari priya<sup>3</sup>

<sup>1</sup>SR International Institute of Technology, Hyderabad, Telangana, India, 501301.

<sup>2,3</sup>Department of Mathematics, Kakatiya university, Telangana, India, 506009.

E-mail: rajyalaxmi2206@gmail.com

**Abstract.** In this paper, we have investigated second Hankel determinants for some subclasses of Ma-Minda bi-univalent functions in the open unit disc  $\Delta$ . These results also give an upper bound for second Hankel determinant of Ma-Minda bi-starlike and bi-convex functions.

## 1. Introduction

$\mathcal{A}$  denotes the set of all functions which are analytic in the unit disc  $\Delta = \{z \in \mathbb{C} : |z| < 1\}$  having a series expansion of the form given by

$$f(z) = z + \sum_{n=2}^{\infty} a_n z^n. \quad (1)$$

The subclass of  $\mathcal{A}$  consisting of all univalent functions is denoted by  $\mathcal{S}$ . The family of all analytic functions  $p(z)$  with positive real part and  $p(0) = 1$  is denoted by  $P$  and  $p(z)$  is of the form

$$p(z) = 1 + \sum_{n=1}^{\infty} c_n z^n. \quad (2)$$

Let  $f, g \in \mathcal{A}$  then, we say that the function  $f$  is subordinate to the function  $g$  in  $\Delta$ , if there exists a Schwartz function  $\omega$ , which is analytic in  $\Delta$  with  $w(0) = 0, |w(z)| < 1 (z \in \Delta)$  such that  $f(z) = g(w(z))$  and it is represented with  $f(z) \prec g(z)$ . Every analytic and univalent function in  $\Delta$  has an inverse  $f^{-1}$ , according to the Koebe  $\frac{1}{4}$  theorem it is defined as

$$f^{-1}(f(z)) = z, (z \in \Delta), f(f^{-1}(w)) = w (|w| < r_0(f); r_0(f) \geq \frac{1}{4}). \quad (3)$$

Also the function  $f^{-1}$  can be written as

$$f^{-1}(w) = w - a_2 w^2 + (2a_2^2 - a_3) w^3 - (5a_2^3 - 5a_2 a_3 + a_4) w^4 + \dots \quad (4)$$

If a function  $f$  and its inverse  $f^{-1}$ , are univalent in  $\Delta$  then  $f$  is said to be bi-univalent in  $\Delta$ .  $\Sigma$  denotes the class of all such functions. The functions  $\log\left(\frac{1+z}{1-z}\right), \frac{z}{1-z}, -\log(1-z)$  are members



**Name of the Faculty: Dr. V. K.Pavana**  
**Name of the Department: History**



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## SOCIO-ECONOMIC CONDITIONS OF TRIBAL COMMUNITIES IN TELANGANA

V. Kaliya Pavana

Research Scholar, Department of History, Osmania University, Hyderabad, A.P.

### Abstract

Tribes are one of a variety of groups of Native Americans. They are mostly left out as they have been considered as the lowest class of Indian society since ancient times. Tribals continue to be deprived due to various factors such as geographical and cultural isolation, lack of adequate health facilities, inability to meet basic needs, lack of control over resources and property, lack of education and skills, malnutrition, homelessness, poor access to water, and sanitation, vulnerability to trauma, violence and crime, lack of access to adequate infrastructure and technology, and lack of political freedom and expression. All these challenges can make your life difficult. In view of these problems, the government tries to help the tribes through various welfare programs. This article attempts to analyze the socio-economic status of tribal communities, the government's plan for the betterment of tribal communities presented by the government of Telangana.

**Key Words:** Telangana, Tribes, Banjara, Nalgonda.

### Introduction

India is a country where people from different cultures, religions, traditions, languages, castes and creeds live. In India too, each state has its own culture and tradition. Among them, indigenous people are among the groups that should be given special attention. The presence of these tribes gives India a diverse taste and a true treasure. The indigenous people of India are also known as "Adivasi", which literally means "Adivasi" or "native to a particular region". The main population of the tribes is located in Chhattisgarh, Orissa, Jharkhand, Madhya Pradesh, northeastern states and Andaman and Nicobar Islands.

Social development paves the way for economic development. Tribes still face difficulties in their socio-economic development due to various factors such as geographical and cultural isolation, lack of adequate health facilities, inability to meet basic needs, lack of control over resources and property, lack of education and skills, malnutrition have to face Homeless, poor access to water and sanitation, vulnerable to crisis, violence and crime, lack of access to adequate infrastructure and technology, and lack of political freedom and expression. The social sector, which includes sub-sectors such as education, health and medical care, housing and water supply, is of great importance for economic development.

**The criteria to be followed by the employed tribe are: For the uniqueness of a community**

- Evidence of primitive features,
- Specific culture,
- Geographical Isolation,
- sneaky contact with the community in general,
- Remains,

This criterion is not detailed in the Constitution, but it is well established. This takes into account the definitions of the 1931 census; Report of the First Backward Classes Commission (Kalekar), 1955;



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### **CHANGING OF SOCIO-ECONOMIC AND CULTURAL LIFE OF LAMBADAS WITH SPECIAL REFERENCE TO NALGONDA DISTRICT (1956-2014 A.D.)**

**V. Kaliya Pavana**

Research Scholar, Department of History, Osmania University, Hyderabad, A.P.

#### **Abstract**

Lambada tribe is also known as the oldest Banjara, Boipari, Sugli or Sukli, Vanjari, Brinjal, Labani, Labana, Lambani etc. in different parts of India. The Deccan Banjara tribe claims to be the descendants of two brothers, Mota and Mola, who looked after Lord Krishna's cattle. However, other historians disagree with this claim, believing that they are immigrants from Persia or European countries, or Roma gypsies. Another source claims that they are from the Middle East, North Africa and Russia. He was given the name Banjara during the colonial period. They were also known as Ghor Samagam (name of the language). However, Lambada tribe is mainly seen in the districts of Mahbubnagar, Warangal, Khammam, Adilabad, Anantapur, Cuddapah and Krishna and these regions are called Telangana. As per census there are 5.5 million 20 Lambada tribes in the state of Andhra Pradesh.

#### **Introduction**

The United Nations Report on the Status of the World's Indigenous Peoples estimates that there are approximately 370 million indigenous peoples, which make up 6% of the world's population. According to ILO Convention No. 169, Indigenous and Aboriginal peoples are those whose social, cultural and economic status distinguishes them from other parts of the national community and whose status is wholly or in part due to their own customs, traditions, laws is determined by. Laws become rules". However, around the world, they suffer from discrimination, exclusion, extreme poverty and conflict. Despite being 5% of the world's population, they are 15% of the world's poor and the world's poorest. About a third of the 900 million are extremely poor.

#### **Indian tribal economy**

India has the world's largest tribal population of 84.3 million, accounting for 23% of the world's indigenous population. Article 342 of the Indian Constitution designates 700 ethnic groups as Scheduled Tribes on the basis of the criteria of primitive characteristics, distinctive culture, geographical isolation, cowardly nature and backwardness. Scheduled Tribes (STs) are known as "Adivasi", which literally means "early settlers". The term "Scheduled Tribe" has not been defined, but is an administrative term used for the purpose of "administrating" certain constitutional statutes. Privileges, protections and benefits for a certain group of people historically considered disadvantaged and backward.

Tribes sit on a mountain of natural resources which they cannot use effectively due to various socio economic and political constraints. Although the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006, a landmark piece of legislation enacted by the Government of India, recognizes property rights, rights of use, assistance and development and management of tribal forests, Its implementation was late and "beneficially rare among indigenous peoples". There are strict laws restricting the transfer of tribal land to non-tribal people, so the land markets are underdeveloped and hence the cost of land acquisition in tribal areas is extremely low, especially through mining there is a tendency to acquire more land than necessary encourages company. Tribal resources have become what Peruvian economist Hernando de Soto calls "dead

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Name of the Faculty: Dr. Anitha Dsouza  
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Authored By

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**Dr. Anita Dsouza**  
Lecturer in Commerce, Telangana Social Welfare Residential Degree College for Women (Warangal  
East), Rangashaipet Warangal, Telangana- 506005

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ASTUDY ON THE EFFECT OF EMPLOYEE DIVERSITY ON ORGANIZATIONAL PERFORMANCE IN IT SECTORS

## A STUDY ON THE EFFECT OF EMPLOYEE DIVERSITY ON ORGANIZATIONAL PERFORMANCE IN IT SECTORS

**Dr. Anita Dsouza**

Lecturer in Commerce, Telangana Social Welfare Residential Degree College for Women (Warangal East), Rangashaipet Warangal, Telangana- 506005

### **ABSTRACT**

This research explores the complex relationship that exists between organizational performance and workforce diversity in the ever-changing Information Technology (IT) sectors. Businesses are accepting diverse workforces in increasing numbers, thus it's critical to understand how this affects overall organizational effectiveness. This study uses a mixed-methods approach to include both qualitative and quantitative information. Various elements of employee diversity are examined, including aspects of gender, ethnicity, age, cultural origins, and skill sets within the IT workforce, based on an extensive assessment of the literature. The moderate impact of diversity on organizational performance indicators is supported by empirical data drawn from a representative set of IT sectors. IT environments, multiple viewpoints may encourage creativity and problem-solving skills. This is shown by quantitative analyses that show a favorable association between innovative outcomes and diverse teams. Qualitative research also highlights the importance of supportive work environments and competent leadership in optimizing the potential advantages of diversity, and it highlights the role that inclusive organizational cultures play. Considering these encouraging results, there are still issues with diversity management in the IT sector, such as unconscious prejudices, communication obstacles, and possible conflicts. To fully realize the potential of diverse teams, these challenges call for focused interventions and inclusive behaviors. With regard to the relationship between staff diversity and organizational performance, particularly in the IT industry, this study adds insightful new information to the continuing conversation. HR is intended to be guided by the practical ramifications of this study.

**Key words:** IT Companies, It Sector, workforce, organizational, performance, diversity and environments.

### **INTRODUCTION:**

The Information Technology (IT) industry is essential to innovation, technical advancement, and organizational future-shaping in today's dynamic global economic environment. Organizations in the IT sector are faced with the challenge of managing a diverse workforce, which consists of individuals with varying backgrounds, experiences, and opinions, as the business grows.

Diversity in the workforce, which includes things like gender, age, ethnicity, educational background, and cultural variations, is becoming more and more important in determining an organization's success. Businesses that welcome diversity frequently reap a variety of advantages, from increased innovation and creativity to better problem-solving skills. Nevertheless, a thorough investigation and study of the specific effect of personnel diversity on organizational success in the IT sector is still necessary. In the context of IT organizations, this study aims to explore the complex relationship between personnel diversity and organizational effectiveness. By looking at how different aspects of diversity, like diversity in cognition and demographics, affect key performance indicators.

The basis for this study stems from the realisation that innovation and problem-solving is critical components of the IT sector, and that a diverse workforce can have a substantial impact on both of these competencies. In order to establish inclusive work environments that foster success in a constantly competitive marketplace, executives, HR experts, and legislators must have a thorough understanding of





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**PROBLEMS AND CHALLENGES OF RURAL WOMEN ENTREPRENEURSHIP IN INDIA:  
AN EMPIRICAL STUDY**

**Dr. Anita Dsouza**

Lecturer in Commerce, Telangana Social Welfare Residential Degree College for Women (Warangal East), Rangashaipeet Warangal, Telangana- 506005

**M. Ramu**

Associate Professor, Avinash college of Commerce, ACC Towers, Kukatpally, Hyderabad-500072

**M. Nagaraju**

Assistant Professor in Commerce, Loyola Academy Degree and PG College, Old atwal, Secunderabad, Telangana 500010

**Kavali Rangaiah M**

Assistant Professor in Commerce, Siva Sivani Degree College, NH-44 Kompally, Secunderabad-500100, Telangana, India.

**Abstract**

*In today's globalised world, a country's economic progress is entirely dependent on the involvement of women in its rural development. However, in a man-dominated country like India, where a large portion of the population lives in rural areas, it is extremely difficult for a woman to consider starting her own business. Women's entrepreneurship is a key notion for the growth of rural communities. For rural women, rural entrepreneurship can open up new economic opportunities, support general growth, and help people escape poverty. The goal of this research study is to analyse the problems and challenges more about the factors that encourage women's rural entrepreneurship in India. It also focuses on the position of women in this sector. The outcomes of this paper expose that lack of balance between family and career obligations of women, lack of direct ownership of the property, poor degree of financial freedom for rural women, the absenteeism of entrepreneurial skills and finance in economically rich and poor women, negligence by financial institutions, lack of self-confidence, lack of confident schedule of life, lack of education, no awareness about capacities, low risk bearing ability, lack of self-confidence, problems of work with male workers, flexibility limitations and lack of contact with successful women rural entrepreneurs are major problems of Rural Women Entrepreneurship development in India.*

**Keywords:** Women Entrepreneurship, Rural Development, Employment and Social Factors..

**1. Introduction**

The ownership structure in the industrial, agricultural, trade, and commerce sectors has altered during the past 10 years, which is seen from looking at the Indian economy. Entrepreneurship is crucial for improving the economic situation of rural areas as well as creating employment opportunities for rural populations. It also offers self-employment for people who launch their own businesses. The vast majority of these were established by men. While many Indian women aspire to be entrepreneurs, it is generally more difficult for them to succeed. In reality, India has been identified as one of the countries where women company entrepreneurs face fewer favourable conditions, pronounced cultural prejudices, and a lack of business resources such as finance, capital, training, and development. Women are now interested in starting their own businesses in both rural and urban areas in order to fight poverty, produce

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family income, and improve their standard of living. Women are participating in agriculture, business, and trade without regard for societal or other constraints. However, rural women in India face numerous social and cultural constraints. As a result, women's participation in entrepreneurial activities contributes less to rural India's social and economic prosperity. Since 2008, the United Nations has observed the 15th of October as International Rural Women's Day to honour them. Rural entrepreneurs are those who engage in entrepreneurial activity by developing industries and commercial units in rural areas using agricultural resources. Women entrepreneurs and their increasing presence in India have significantly influenced the social and economic demographics of the country. The participation of women in the



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## INVESTORS' LEVEL OF SATISFACTION WITH ETFS, BENEFITS, AND ATTITUDE TOWARD INVESTING IN ETFS

**Ponna Shirisha**

Assistant Professor in Commerce, Loyola Academy Degree and PG College  
Old alwal, secunderabad, Telangana 500010

**Dr.Anita Dsouza**

Lecturer in Commerce, Telangana Social Welfare Residential Degree College for Women  
( Warangal East),Rangashaipet Warangal, Telangana- 506005.

**Kavali Rangaiah**

Assistant Professor in Commerce, Siva Sivani Degree College  
NH-44 Kompally, Secunderabad-500100 , Telangana, India.

**Hemi Devi.P**

Assistant Professor in Commerce, Loyola Academy Degree and PG College  
Old alwal, secunderabad, Telangana 500010

### **Abstract**

Gold Exchange Fund is a quick developing product to invest in Gold. Exchange Traded Funds (ETFs) has very positive significance as foreign exchange earner and safety and avoiding inflation in an economy (Wang et al., 2010). Investors considered safety, high returns, liquidity and capital appreciation in the time of investment. Finance is required for all development works. Financial leverage plays a significant role in the area of investment. The power of leveraging can be seen with long investments. The investment in the long term brings good result. Retail investment has remained as a strong growth driver. The investment styles of investors is subjected to rapid changes. A number of financial institutions are providing financial assistance and there is a lot of alternatives available to the retail investors depending upon risk, safety, regular income etc. The demand of investors i.e., returns and risks have been considered by the financial analysts and innumerable innovative instruments have surfaced to meet the demands of retail investors (Sailaja et al., 2018). Indian ETF industry is growing at a rate of 28% CAGR in between 2007 from 6 to 66 in 2018. AUMs grew 10X i.e., maximised and expanded results 10 times over in the previous 3 years from Rs. 8900 crores to 89500 crores as of October 2018. Further, the GOI gave impetus to the growth of ETFs when it raised capital through ETFs (Aruna Polisetty, et al., 2019). ETFs differ from mutual funds and they can be traded throughout the working day. The Hyderabad retailers are showing their likeliness towards ETFs as they are more safety less risk and better return yielding.

**Key words:** Exchange Traded Funds, Investors,



AN EMPIRICAL INVESTIGATION OF HERDING BEHAVIOUR IN INDIAN BOMBAY STOCK EXCHANGE

Section A-Research paper

AN EMPIRICAL INVESTIGATION OF HERDING BEHAVIOUR IN INDIAN  
BOMBAY STOCK EXCHANGE



Dr. Dhadurya Naik M<sup>1\*</sup>, Dr. Suresh Talamala<sup>2</sup>, Dr. S. Venkata  
Ramana<sup>3</sup>, Dr. K. Kiran Kumar Varma<sup>4</sup>, Dr. Anita Dsouza<sup>5</sup>

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**Abstract**

Drawing upon prior research on the Indian stock market, they examine whether the Bombay Stock Exchange (BSE) exhibits herding behaviour, and whether herding behaviour differs when the market recovers (up or down). Data from January 1, 2017 to December 31, 2020 was investigated for herding. The paper presents an alternative approach to testing herding behavior in the Indian stock market using the measure of cross-sectional absolute deviation and a semi-parametric estimator of quantile regression. Data analysis shows that throughout the whole span, herding behaviour is clearly evident. When the market is volatile, there is little evidence of herding. Another study found herding behaviour in fluctuation markets in India, though it is more pronounced in up markets, which is steady with the overall results. The study has limitations because we used monthly traded stock values of five IT businesses and the SENSEX to compare market performance. Herding behaviour is analysed using market returns solely. This study applies to real-world financiers, regulators, and lawmakers. The COVID-19 pandemic has created a "new set of normalcy" for merchants. Any behavioural bias might cause asset valuation inefficiencies. Herding behaviour hinders rational asset pricing theories under exogenous events. Thus, scholars must create new value models. Disruption and information asymmetry damage the market. Instead of following the crowd, investors should have a "investment vision" that guides their decisions. The study investigate herding behaviour in Bombay Stock Exchange (BSE) and fluctuation markets in India

**Keywords:** herding behaviour, stock market, market returns.

<sup>1</sup>Assistant Professor, Department of Business Administration, Prasad V. Potluri Siddhartha Institute Of Technology, Vijayawada, A. P, India.

<sup>2</sup>Associate Professor, Andhra Loyola College, Vijayawada, Andhra Pradesh, India

<sup>3</sup>K.L. Business School, Koneru Lakshmaiah Education Foundation (Deemed to be University), Vaddeswaram, Greenfields, Andhra Pradesh, India.

<sup>4</sup>Associate Professor, Dept of Humanities, SRKR Engineering College, Bhimavaram

<sup>5</sup>Lecturer in Commerce, Telangana Social Welfare Residential Degree College for Women (Warangal East), Bommalaihat Warangal, Telangana: 506005



**Name of the Faculty: Dr. B. Sridevi**  
**Name of the Department: Microbiology**



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**Attitude of Teachers, Students and Parents towards continuous and comprehensive evaluation**

**Dr. Rekha Singh<sup>1</sup>, Dr. Raig Montajeb Aif<sup>2</sup>, Dr. Shraddha Walekar Ghaisus<sup>3</sup>,  
Dr. Boddireddy Sridevi<sup>4</sup>, Dr. B. Divya Priya<sup>5</sup>**

<sup>1</sup>Associate Professor  
Thakur Institute of Management Studies and Research, Mumbai  
Email: rekhaspsingh@gmail.com

<sup>2</sup>Associate Professor, Department: College of Teacher Education, Maulana Azad National Urdu University, Hyderabad, India.  
Mail: montajeb@manuu.edu.in  
ORCID: <http://orcid.org/0009-0001-5200-3308>

<sup>3</sup>Assistant professor, Mgm Dental College, kamothe, Navimumbai.  
Email: [shraddhawalekar7@gmail.com](mailto:shraddhawalekar7@gmail.com)

<sup>4</sup>Degree College Lecturer, Department of Microbiology, Telangana Social Welfare Residential Degree College for Women, Warangal East  
Email: [mula.bsridevi@gmail.com](mailto:mula.bsridevi@gmail.com)

<sup>5</sup>Associate Professor, Department of Commerce, Kongunadu Arts and Science College, Coimbatore.  
E-mail: [diya.kasc@gmail.com](mailto:diya.kasc@gmail.com)

**ABSTRACT**

Education and evaluation are two processes that are intertwined. Evaluation is as old as the educational process itself. Education, in its broadest sense, refers to the development of abilities, skills, and personality traits that are significant in an individual's personal and social life. The purpose of educational evaluation is to give a systematic assessment of these attributes' growth as a result of educational activity. Due to the shortcomings of the previous method, the evaluation system is changed from time to time. A new method of evaluation is Continuous and Comprehensive Evaluation. The study's goal is to determine how teachers, students, and parents feel about continual and comprehensive evaluation. The study employs the survey approach. A sample of 50 teachers, 50 students, and 50 parents was chosen using a simple random sampling technique. The data is collected using a self-made tool. The data is analysed using the mean, standard deviation, and t-test.

**KEY WORDS:** Attitude, Continuous and Comprehensive Evaluation, Teachers, Students, Parents.

**INTRODUCTION**

School is a child's first encounter with the outside world; school education is critical for a child's overall development because it is where they first gain access to the necessary know-how to meet the demands of modern lifestyles. According to various experts, India's traditional education system has become outdated, and students have experienced excessive workloads. Children today are hampered by a lack of time, as they are expected to work extremely hard in school. Furthermore, there are exams at regular intervals, making life even more difficult for the children. The modern world has become stressful, which can have a variety of negative effects on their overall personality traits in the future. Authorities have been debating for a long time whether a qualitative change in the lives of young schoolchildren can be achieved. Also, there is a need to change the current system, which focuses on rote learning. As a result, for the 2009-10 school year, India implemented a school evaluation system. In 2011, Xth grade students received grades instead of marks. Mr. KapilSibal, Union Minister for Human Resource Development, announced the launch of the new education system on September 7, 2009. According to the announcement, no Class X board examinations will be held beginning in 2011. Instead, through an internal assessment, students will be promoted to the senior secondary level. Because the decision was made in the middle of the academic year, students in Class X in the current academic session will be required to take the board exam as scheduled, but will be graded instead. Students will be graded in nine categories, ranging from exceptional to unsatisfactory, according to the Central Board of Secondary Education (CBSE).



## Bioethanol Production with the Inoculation of Yeast Using Vegetable and Fruit Wastes as Substrate

<sup>1</sup>Boddireddy Sridevi, <sup>2</sup>Boini Pooja, <sup>3</sup>Dharmarapu Sravanthi

<sup>1,2&3</sup>Department of Microbiology, Telangana Social Welfare Residential Degree College for Women,  
Warangal East, Telangana, India.

**Abstract:** In the current climate change situation, finding alternative energy sources is critical to reduce the usage of fossil fuels. Bioethanol, as a biofuel has got an exceptionally role in the world. Second-generation bioethanol can be made from undesired biomass such as fruit and vegetable wastes, and it is a promising alternative to fossil fuels. Bioethanol production using five fruit and vegetable wastes, banana (*Musa paradisiaca*), papaya (*Carica papaya*), sapota (*Manilkara zapota*), pomegranate (*Punica granatum*) and potato (*Solanum tuberosum*) were studied in submerged fermentation using their autohydrolysis liquor by fermenting with yeast isolated from grapes. The greatest amount of bioethanol produced differed from day to day throughout fermentation. The ethanol yield of substrates increased gradually from 24 to 72 hours during the fermentation period. Maximum alcohol content 18.5%(v/v) and 17.4%(v/v) were observed in potato peel and banana peel at 72hrs respectively. Bioethanol obtained from sapota peel, pomegranate peel and papaya peel were found to be 16.5% (v/v), 15.2% (v/v) and 13.2% (v/v) respectively.

**Key words:** Biomass, Bioethanol, Fossil Fuel, Second-generation Production, Autohydrolysis Liquor, Yeast.

### I. Introduction

Global energy consumption has gradually expanded in tandem with the growth of the human population and the rise of industrial affluence. Import of transport fuel is affected by limited reserves of fossil fuel. Within the next few years, annual global oil production will begin to decline. Renewable energy sources could be an alternative option in this circumstance. Renewable energy sources include wind, water, sun, biomass, and geothermal heat, whereas fuel production and the chemical sector may rely on biomass as an alternative source in the near future. Renewable biomass fuels, such as bioethanol, biodiesel, and biohydrogen, generated from sugarcane, corn, switchgrass, algae, and other sources, can be used to replace all petroleum-based fuels<sup>1</sup>. Worldwide ethanol demand is steadily expanding as a result of fast population expansion and industrialization. Due to their primary value as food and feed, conventional crops such as corn and sugarcane are unable to supply the global demand for bioethanol production. Second-generation bioethanol production necessitates the development of cost-effective and sustainable processes that use renewable lignocellulosic biomass as a starting material. Therefore, agricultural wastes are attractive feedstocks for bioethanol production. These wastes are cost effective, renewable and abundant. Underutilized organic wastes such as fruit and vegetables have biological and chemical potential in producing bioethanol. Some biological potentials include the possibility of indigenous microorganisms like *Candida* spp<sup>2</sup>. Fruit and vegetable wastes, on the other hand, contain chemical potential due to large levels of complex saccharide in the form of lignocellulose. Lignocellulose from a rich source might be hydrolyzed into D-glucose and D-xylose, which could then be converted to bioethanol by microorganism<sup>3</sup>. In many Indian towns, the demand for fruits and vegetables is driving up the volume of organic wastes. In a traditional market, waste from fruits and vegetables is the most common type. It was found that banana, papaya, sapota, pomegranate, and potato wastes were dominated in most of the markets. The characteristics of organic wastes at traditional markets were affected by waste dominance, with water content of 84.46 percent, dry matter 15.54 percent, volatile content of 91.80 percent, ash content of 8.2 percent, C-organic content of 68.62 percent, total nitrogen level of 2.22 percent, and C/N ratio of 30.912<sup>4</sup>.



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## BIOETHANOL PRODUCTION FROM IXORA COCCINEA AND QUISQUALIS INDICA FLOWERS

Mrunalini Appe \*, Ramya Margam and Sridevi Boddireddy

Department of microbiology, Chaithanya degree and postgraduate college (Autonomous),  
kishanpura, Hanamkonda -506 001, Warangal, Telangana, India.

### ABSTRACT

Biofuels, the fuels that are derived from living matter, usually plants, have emerged as a highly promising source of alternative energy, and have drawn global Research and Development for their production using biomass which is defined as the organic matter used for producing fuel such as lignocelluloses wastes, municipal solid wastes, flowers, weeds etc. A traditional method of bioethanol production mainly requires fruits, sugarcane, honey etc. all which are major food products. There is an increased interest in finding an alternative, cheaper biomass for production of bioethanol. Nectar is a sugar-rich liquid produced by flowers. Flowers of *Ixora coccinea* (the West Indian jasmine) and *Quisqualis indica* (Rangoon creeper) contain fermentable sugars. Fermentation of these two fresh flowers with two different strains of *Saccharomyces cerevisiae* was carried out by submerged fermentation method. Estimation of reducing sugar was done by DNS and glucose by GOD-POD method. The initial reducing sugar content of *Ixora coccinea* was 1350µg/ml and was decreased after the fermentation to 740µg/ml. Whereas in the flower sample of *Quisqualis indica*, the initial sugar content was 1900µg/ml and was decreased to 570µg/ml and the glucose concentration was estimated to be 620µg/ml in *Ixora coccinea* and 340µg/ml in *quisqualis indica* by GOD-POD method. The bioethanol estimation was done by dichromate method and the bioethanol yield was found to be 1.34gm% in *Quisqualis indica* and 1.46gm% in *Ixora coccinea*.

**Keywords:** Biofuel, Biomass, Bioethanol, *Ixora coccinea*, *Quisqualis indica*

### INTRODUCTION

Bioethanol production from renewable sources to be used in transportation is on increasing demand worldwide due to continuous depletion of fossil fuels. Because of the dependence on petroleum-based fossil fuel which is exhausted very fast to meet the continuously increasing demands, the need to produce biofuels has risen. It has been realized that fossil energy causes greenhouse gas emissions that have adverse effects on the environment. Burning of petroleum-based fuels causes the increase of CO<sub>2</sub> level in the environment which is directly responsible for global warming. Hence, it is an ongoing interest to find out a renewable and environmentally friendly source of energy for our industrial economies and consumer societies. Bioethanol in this aspect is an

attractive option for renewable and sustainable energy source.

Bioethanol is primarily produced by sugar fermentation process, although it can be produced by the chemical process of reacting ethylene with steam. Bioethanol is reduced from biomass mostly via a fermentation process using glucose derived sugars, starch, cellulose etc., as raw materials extracted from plants. However, these crops can have a significant impact on food security. Hence an alternative method of producing alcohol from flowers and weed is studied in present day's work.

Production of bio-ethanol from maize, agro waste has been attempted with enzymes from different sources for hydrolysis of lignocelluloses and with different organisms for fermentation (oh green et al., 2006; Eken Saracoglu and Arslan, 2000; Cao et al., 1996 and



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**Name of the Faculty:G. Prathibha**  
**Name of the Department: Computer Science**



## A Novel Approach in Designing Pantomime Pointer

<sup>1</sup>K.Vikram Reddy, <sup>2</sup>G Prathibha

<sup>1</sup>K. Vikram Reddy is with the Computer Science and Engineering, Matruri Engineering College, Saidabad, Hyderabad, 500059.  
(email: vikramreddy@matruri.edu.in)

<sup>2</sup>G Prathibha is with the Computer Science and Engineering, Matruri Engineering College, Saidabad, Hyderabad,  
(email: prathibhareddy@matruri.edu.in)

### ABSTRACT

*Our application is a platform to aid the people with severe disability. We have developed a system which uses a camera and tracks a feature on person's face or hand or any part of their body which they can access easily. For example, the tip of the finger can also be selected and it can be tracked and papered on the screen as the reflection of the mouse pointer. Hence, the end user can get the access to the mouse pointer without using the mouse.*

*The tracking algorithm works well. This algorithm tracks a person's finger tip for many minutes without the intervention or any adjustments. There is no certain setup for the lighting conditions of the application at our implementation area. We just used standard fluorescent bulbs. Occasionally, the selected sub image creeps along the user's finger, for example up and down the finger moves, accordingly the mouse pointer moves in the monitor screen. Virtually Gestured Cursor provides a facility to the disabled people to access the computer easily.*

**Keywords:** *Dwell time, Feature, Gesture, lightening conditions, Sub image, Template, Tracking algorithm.*

### 1.INTRODUCTION

Virtually Gestured Cursor is an application implemented under the Image Processing domain. Image Processing has a variety of co-domains like, Image Extraction, Image Analysis, Steganography, Pattern Matching etc. In our paper design, we have used almost all the co-domains of the Image Processing Domain.

The base for any application in the Image Processing Domain is to gather all the inputs and perform Image Analysis. Image Analysis is the extraction of the semantic information from the images; especially from the digital images by means of the digitalized techniques. Image Analysis tasks are so simple as reading bar coded tags.



## Review on Agile Modeling for Distributed Development

Dr. K. Sunil Manohar Reddy & Mrs. G. Pratibha

Associate Professor, Department of CSE, Matrusri Engineering College, Hyderabad, Telangana.

Degree Lecturer, Department of Computer Science, TSWRDC, Warangal East, Telangana.

[sunil186@gmail.com](mailto:sunil186@gmail.com), [pratibhareddy19@gmail.com](mailto:pratibhareddy19@gmail.com)

**Abstract:** As compared to the traditional process models, agile model has proved its worth with fast paced development and quick iterations. Enormous growth in global IT industry has created offshore clients and development resources for many software companies. Many global clients and organizations are out sourcing their projects for better work on cheap rates with high demands. Agile model has certain limitations when development environment is globally distributed and as in most cases client is offshore. Existing agile principles do not support distributed development architecture. This paper focuses on the problems that arise when client is offshore and proposes an agile model for distributed development environment.

**Keywords:** Requirement gathering, Distributed Development, Agile development

### 1. Introduction

The enormous growth in the global IT industry has opened doors for software companies with offshore clients involved in out sourcing their projects. Traditional web applications have been evolved into web Information Systems (IS). Globalisation have tremendously impacted IT industry and changes the IS development style dramatically [2]. Web applications vary from traditional software development in various terms like:

1. More technologies (HTML, XML, ASP, JSP, PHP etc.)
2. Large number of users
3. Fast development
4. Short and frequent iterations
5. Continuous maintenance
6. Scalability

Web application development contributes 70% of the total development to the IT industry. But there is still a lack of some well defined and established process model typically suitable for developing web applications. Web engineering follows many conventional Software Engineering's fundamental concepts and principles [8]. In addition, it incorporates specialized processes models, software engineering methods adapted to the characteristics of this kind of application, and a set of enabling technologies [6]. Agile model hence is a process model adapted by most of the software companies for web applications development. The claims made by agile process proponents and critics lead to questions about what practices, techniques, and infrastructures are suitable for software development in today's rapidly changing development environment [11]. The true picture inside these companies is totally different. The principles of agile manifesto which were published by agile alliance during 2001 meeting are actually not the basis of agile development in these companies.

Agile model except some basic principles do not provide any concrete model and set of processes to be followed like Water fall model, Spiral model and Rapid Prototyping. Mostly agile practices are adaptive. Each organization modifies agile methods according to its requirements and development environment. This approach has produced many different development techniques each claiming to be an agile as in recent years a number of processes claiming to be "agile" have been proposed in the literature. This practice has left the standing principles of agile far behind [11].



## Challenges in Scrum Agile Development

Dr. K. Sunil Manohar Reddy<sup>1</sup>, Mrs. G. Pratibha<sup>2</sup>, Mr. K. Vikram Reddy<sup>3</sup>

<sup>1</sup>Associate Professor, Dept. of CSE, Matrusri Engineering College, Hyderabad.

<sup>2</sup>Assistant Professor, Dept. of CSE, Matrusri Engineering College, Hyderabad.

<sup>3</sup>Assistant Professor, Dept. of CSE, Matrusri Engineering College, Hyderabad.

<sup>1</sup>[sunil186@gmail.com](mailto:sunil186@gmail.com),

<sup>2</sup>[pratibhareddy19@gmail.com](mailto:pratibhareddy19@gmail.com), <sup>3</sup>[vikramreddy@matrusri.edu.in](mailto:vikramreddy@matrusri.edu.in)

### Abstract

Software Development plays a vital part in modern world. Off late more and more software development organizations are adopting agile software development methods and techniques. Successful agile adoption leads to producing higher quality software, enhance developers moral and at a lower cost than the conventional waterfall model approach. This study seeks to evaluate, synthesize and present aspects of research on agile methods, approaches adopted and the criteria utilized for agile practice selection

**Keywords:** Prototyping, Agile Software Development, Scrum, Backlog, Agile Testing

## 1. Introduction

Software Engineering is the platform to develop the software step by step and to produce a high quality product at the end. There are many models to implement Software Engineering. All the models are actually based on Software Development Life Cycle (SDLC). The SDLC has phases or steps to be followed to achieve software development. These steps are customized to form a process model which will help the software engineers to follow a certain path. Some process models are Waterfall model, Spiral model, Prototyping, iterative and incremental model, rapid application development and agile model. Agile software development approach enables developing software in regular intervals, i.e., iterations, producing the software in increments<sup>1, 2</sup>. This research concentrates on the major issues and challenges in Scrum method of agile model. Scrum is a process framework to deliver products with the highest possible value and handle complex problems or situations. Use iterative and incremental approaches to develop products using cross-functional teams<sup>1, 2</sup>. The issues are listed and described below.

## 2. Issues with Prioritizing the user Stories

### 2.1 Assigning Product Backlog Items

In scrum method Product Backlog Item is central. The PBI contains a prioritized list of all items relevant to a specific product. Bugs, customer requested enhancements, competitive product functionality, competitive edge functionality and technology upgrades are available in this list<sup>3</sup>. The first major issue is to convert user stories into Product Backlog Items. There is lots of confusion in assigning PBIs from the Software Requirement Specification document. There are cases in reality wherein either PBI are assigned directly from the functionalities of the software that is requested by the client or the Scrum team assigning the PBIs or in some cases PBIs are assigned based on the sprint duration<sup>4, 5</sup>. These cases are not the right method to assign PBI, because the functionality of software can be a PBI but not all functionalities are PBIs. A scrum team cannot assign PBI since the team



## Analytical Survey on Prediction of Employee Attrition Non parametric tuning Algorithms

G.Pratibha<sup>1</sup>, Dr. Nagarajna P Hegde<sup>2</sup>

<sup>1</sup> Research Scholar, Dept of CSE, JNTUH, Hyderabad, India.

<sup>2</sup> Professor, Dept of CSE, Vasavi College of Engineering, Hyderabad, India.

### Abstract:

Employee attrition is one of the most serious issues facing companies today. When long-term employees leave the company, it impacts the company's relationship with the customer, which in turn affects the company's revenue if the person who replaces the previous employee is unable to maintain a good rapport with the client. These studies evaluate the employee attrition rate through relevant factors such as Job Role, overtime, and job level, which all have a significant impact on attrition. The study includes a survey of various classification techniques, such as logistic regression, ridge classification, decision trees, and random forests, to forecast the likelihood of attrition of every new employee. A systematic and comprehensive evaluation approach is used to assess the performance of each of these supervised machine learning methods. This survey will assist human resource managers in identifying individuals who are likely to leave the firm and forecasting the reasons for their choice, allowing HR managers to design a retention strategy or seek a replacement.

**Keywords:** Employee Attrition, Machine Learning, Random Forest, Naive Bayes, Deep learning, Association technique

### I. INTRODUCTION

Data has become a strategic asset for most organizations in a variety of industries, particularly those involved in business processes. Adoption of new technology improves many organizations [1], and data collection, management, and analysis provide significant benefits in terms of efficiency and competitive advantage. Analyzing vast amounts of data can lead to better decision-making processes, attainment of pre-established company goals, and increased business competitiveness [2, 3]. There are various areas within organizations where the use of artificial intelligence impacts a company's decision-making processes [4,5]. Human resources (HR) have received more attention in recent years, as employee quality and skills are a growth element and a true competitive advantage for businesses [6]. Indeed, after being more widely used in sales and marketing, artificial intelligence is now being used to drive company decisions about their personnel, to base HR management decisions on objective data analysis rather than subjective considerations [7-9].

Predicting employee attrition allows management to act more quickly by improving internal policies and initiatives. Where talented employees who are at risk of leaving might be offered a few recommendations, such as a pay raise or suitable training, to lessen their likelihood of leaving. Machine learning models can assist firms in anticipating staff attrition [10, 11]. Analysts can construct and prepare a machine learning model that predicts workers leaving the firm using previous data stored in human resources (HR) departments. It built such models to investigate the relationship between the characteristics of both active and terminated personnel. Furthermore,





## Low Complexity Early Employee Attrition Analysis Using Boosting and Non-Boosting ML Techniques

G. Pratibha<sup>1\*</sup>, Dr. Nagaratna P. Hegde<sup>2</sup>

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**Abstract:** Every company, regardless of location, industry, or size, struggles with the problem of employee turnover and attrition. Predicting employee turnover is one of the top priorities for the human resources departments of many businesses because it is such a significant challenge. Employee turnover costs organizations a lot of money. In this research, we implemented multiple machine-learning methods to create a model that predicts employee attrition. Among them, the CatBoost algorithm is incorporated to identify a suitable approach for predicting employee attrition tasks early. The primary purpose is to find a method to predict the number of employees leaving their jobs accurately. Following training, the model for predicting employee attrition is assessed using a real dataset provided by IBM Analytics. This dataset has 35 features and around 1500 samples and is used to evaluate the model. Using CatBoost, we got a high accuracy on the Kaggle dataset titled "IBM HR Analytics Employee Attrition & Performance." We recommend using a technique called "synthetic generation" to create more combined features based on arithmetic operations, which improves the accuracy and area under the curve (AUC) of the original CatBoost model. This will allow you to get the most out of the fundamental characteristics of the dataset. We achieved high accuracy of 95.84% and consumed less time of 2.15sec as related to relevant studies; this indicates that our method is effective.

**Keywords:** CatBoost, Employee attrition, HR analytics, Random Forest, Synthetic features

### 1. Introduction

Employee attrition is one factor contributing to the number of employees leaving their jobs. It comes at a financial cost in the kind of costs for hiring and training. Whenever experienced employees need to be replaced since they have moved on to work for competing companies [1, 2]. In addition, when a person leaves their position, they take explicit and tacit knowledge with the potential to disrupt critical social ties [3, 4]. Therefore, a company should prioritize decreasing employee turnover to keep a competitive advantage over its competitors. As a consequence of this, for the benefit of the corporation, the leaders of the corporation need to gain an understanding of the primary factors that contribute to the decisions that their employees make to leave the company and then take the right actions to boost the productivity, general workflow, and overall performance of their organization after their employees have left the company.

On the other hand, a higher retention rate signifies a reduction in the costs of employing new employees and training them, in addition to individuals with more experience and more experienced people joining the company's staff over time. Therefore, organizations currently have a strong commercial interest in understanding the causes of employee turnover to prevent

employee attrition. In general, it is a goal of businesses to increase their profits as much as possible. Because they have fewer contractual obligations, workers at firms where they do basic tasks might turn to

on-call, occasional, and temporary labor. However, in firms where employees execute highly specialized jobs, employee specialization and continuity of work become critical. It has been demonstrated that businesses must recognize the importance of a person's competencies and capacity to acquire new information while working. As a result of the use of artificial intelligence in human resources, businesses can now convert data into knowledge in several ways, one of which is through the implementation of predictive models. These models make it possible to make predictions about employees based on data acquired by the organization over the preceding years. As a result, significant problems are mitigated, and all HR-related tasks are optimized.

As a consequence, estimating the employee turnover rate and determining the key contributing factors contributing to attrition in the existing organizations [5]. Several studies on employee attrition exist, one of which is the study in [6], which investigated the factors that impact employee turnover in the information technology division. They used a questionnaire to collect data from all 300 IT staff members in the division. They used a strategy based on fundamental percentages, the chi-square test, and the correlation coefficient technique. They concluded that there is no connection between

\* Research scholar, Dept. of CSE, JNTUH, Hyderabad, Telangana, India

<sup>2</sup> Professor, Dept. of CSE, Vavani College of Engineering, Telangana, India

\* Corresponding Author Email: pratibhagd123@gmail.com



# Employee Attrition Prediction based on Grey Wolf Optimization and Deep Neural Networks

<sup>1</sup>G Pratibha, <sup>2</sup>Nagaratna P. Hegde

<sup>1</sup> Research Scholar, Department of Computer Science and Engineering, JNTU, Hyderabad, Telangana, India  
pratibhaphd123@gmail.com

<sup>2</sup> Professor, Department of Computer Science and Engineering, Vasavi College of Engineering, Hyderabad, Telangana, India

**Abstract:** Despite the constructive application of promising technologies such as Neural Networks, their potential for predicting human resource management outcomes still needs to be explored. Therefore, the primary aim of this paper is to utilize neural networks and meta-heuristic technologies to predict employee attrition, thereby enhancing prediction model performance. The conventional Grey Wolf optimization optimization (GWO) has gained substantial attention notice because of its attributes of robust convergence, minimal parameters, and simple implementation. However, it encounter problems with slow convergence rates and susceptibility to local optima in practical optimization scenarios. To address these problems, this paper introduces an enhanced Grey Wolf Optimization algorithm incorporating the utilization of Cauchy-Gaussian mutation, which contributes to enhancing diversity within the leader wolf population and enhances the algorithm's global search capabilities. Additionally, this work preserves exceptional grey wolf individuals through a greedy selection of 2 mechanisms to ensure accelerated convergence. Moreover, an enhanced exploration strategy is suggested to expand the optimization possibilities of the algorithm and improve its convergence speed. The results shows that the proposed model achieved the accuracy of 97.85%, precision of 98.45%, recall of 98.14%, and F1-score of 97.11%. Nevertheless, this paper extends its scope beyond merely predicting employee attrition probability and activities to enhance the precision of such predictions by constructing an improved model employing a Deep Neural Network (DNN).

**Keywords-** Machine learning, Employee attrition, prediction model, Grey Wolf Optimization, Cauchy-Gaussian mutation

## 1. INTRODUCTION

In the contemporary competitive economy characterized by increasing technological specialization, the acquisition, study and analysis of data have given rise to a new concept known as the "knowledge economy." Information technologies not solely function as a data source but also assume a vital role in facilitating data analysis. This enable the processing of large data sets and the extraction of valuable information from them. Data has become a strategic asset for a wide range of organizations across various sectors, including those involved in business processes. The adoption of new technologies benefits all types of organizations [1], and the collection, management, and analysis of data offer numerous advantages in terms of efficiency and gaining a competitive edge. Certainly, examining extensive datasets can result in improvements in decision-making, the attainment of established corporate objectives, and heightened business competitiveness [2, 3]. Predicting employee attrition in advance can aid in preventing or minimizing its repercussions on an organization. Some literature suggests that content and motivated employees tend to exhibit greater creativity, productivity, and overall performance [4].

Organizations can leverage their HR data to make such predictions by employing predictive models designed for this purpose. In recent times, artificial intelligence (AI) has been

applied across diverse domains, such as healthcare, education, the economy, and governance [5, 6]. Notably, there has been a growing focus on using AI for predicting employee attrition, reflecting the increasing research attention in this area. Furthermore, the growing volume of data on this subject has spurred an increased number of studies in this field [7, 8]. This research paper specifically centers on forecasting employee attrition using deep neural networks, employing the IBM Watson dataset for training and testing purposes. This dataset comprises 35 features for a total of 1470 samples, categorized into two classes: current employees and former employees. Notably, the samples are imbalanced, consisting of 237 positive instances (former employees) and 1233 negative instances (current employees). This class imbalance presents a considerable challenge in the prediction process. Workplace absenteeism may be predicted using a deep neural network, as shown in [9]. They demonstrated that their technique was 97.5% accurate compared to the 85% accuracy of the standard model. Later, in [10], an enhanced Deep Belief Network based on GWO is used to predicting employee turnover. Slow convergence time and a propensity to settle on a suboptimal solution are two issues that plague GWO.

To solve this the present paper contributions can be concisely summarized as follows: First, we have connected deep learning techniques along with preprocessing steps to enhance the accuracy of employee attrition predictions. Second, we have



**Health Supervisor: Dr. NNL Bhagavathi**



## Association of Anaemia & Urinary Tract Infections with *Amavata* (~Rheumatoid Arthritis) – A matched case-control study carried out at Jamnagar, Gujarat, India

Research Article

Rajkumar Chinthala<sup>1\*</sup>, Shubhangi K<sup>2</sup>, Baghel AS<sup>3</sup>, Bhagavathi NNL<sup>4</sup>

1. Assistant Professor, Mahatma Gandhi Ayurvedic College, Hospital & Research Centre, Salod (Hirapur), Wardha, Maharashtra.

2. Associate Professor, 3. Professor & Head, Department of Basic Principles,

Institute of Teaching and Research in Ayurveda, Institute of National Importance, Jamnagar, Gujarat, India.

4. Health Supervisor, TSWRDCW, Warangal (East), Government of Telangana, India.

### Abstract

**Background:** *Amavata* (Rheumatoid Arthritis) is a chronic progressive disease, resulted from the conglomeration of *Ama* and aggravated *Vata dosha* which gets lodged in the small joints followed by large joints. If it is left untreated, may cause various complications in the form of *Vataja* diseases in which *Raktadhatu kshaya* (Anaemia) and *Mutrakricchra* (Urinary Tract Infection) are predominant. But it needs robust evidence to revalidate the same. **Aim & Objective:** To evaluate the association of *Raktadhatu kshaya* (Anaemia) and *Mutrakricchra* (Urinary Tract Infection) with *Amavata* (~Rheumatoid Arthritis). **Materials & Methods:** A case-control study was conducted from 18.04.2018 to 09.01.2020, containing 155 cases (patients of *Amavata*), and 163 controls (healthy volunteers), matching in age (between 18 to 50 years), and sex, selected from Jamnagar district. Health Assessment proforma of TRISUTRA project CSIR-AYURGENOMICS for health assessment, ACR, 1987 Criteria for RA diagnosis were used. Chi-square test was applied to find the association of *Raktadhatu kshaya* (Anaemia) and *Mutrakricchra* (Urinary Tract Infection) with *Amavata* whereas Unpaired or Mann-whitney U test was applied to compare the hematological parameters between case and control group. **Results:** Statistically significant differences were found in the mean values of haemoglobin, total leukocyte count, neutrophils, lymphocytes, eosinophils, monocytes, MCV, MCH, MCHC, PCV, total RBC count, and platelet count among both the groups. Microcytic and Dimorphic Anaemia were substantially higher ( $P < 0.0001$ ) in the *Amavata* patients than in the controls ( $\chi^2$  value=24.814). The prevalence of UTI (presence of pus cells in the urine) was found significantly more ( $P < 0.0001$ ) in *Amavata* patients than healthy individuals ( $\chi^2$  value=45.347). **Conclusion:** Anaemia and Urinary tract infections are strongly associated with *Amavata* (~Rheumatoid Arthritis).

**Key Words:** *Amavata*, Anaemia, Case-control study, Haematological parameters, Rheumatoid Arthritis, Urinary Tract Infection.

### Introduction

The word '*Amavata*' is a conglomeration of '*Ama*' and '*Vata*'. *Madhava Nidana*, a medieval treatise of ayurvedic diagnostic system and pathology, is the first one to propose the disease *Amavata* to the ayurvedic fraternity. *Amavata* can be correlated with Rheumatoid Arthritis (RA) in contemporary medicine, its etiology includes excessive intake of *Guru* (heavy), *Snigdha* (oily), *Viruddhahara* (incompatible), *Asatmya* and *Apathya* (unwholesome), and irregular diet intake, which impairs *Agni* (a digestive mechanism), results in *Agnimandya* (indigestion), the primary step in the

formation of *Ama* (undigested material) (1). If this *Ama* combines with vitiated *Vata dosha* and while circulating all over the body, it gets lodged in joints and results in *Sandhi-Shoola* (joint pain), *Sandhi-Shotha* (swelling in the joints), *Jwara* (fever), *Sandhi-Stabdhatu* (stiffness in joints), loss of appetite, indigestion, and body ache (2). The potential complications of *Amavata* include *Jadata* (ankylosis of the joint), *Sankocha* (abnormally fixed state of any limb in flexion or inability to extend the limb), *Khanjata* (affliction of *Kandara* in the thigh region), *Angavaikalya* (swan-neck buttonhole deformity, z-deformity, ulnar deviation, cock-up toe deformity, etc.) *Granthi* (subcutaneous nodules), and other *Vataja* disorders. These complications have arisen from the *Amayuktarasadhata* which cannot continue *Uttarottara Dhatuposhana*, thereby it worsens the quality of life of the patient. The disturbed *Dhatuposhana* (sequential nourishment of body tissues) may lead to *Ojokshaya* also, which may stimulate the pathogenesis of other diseases. *Raktadhatu kshaya* (anaemia) *Mutrakricchra* (urinary tract infection) also

#### \* Corresponding Author:

**Rajkumar Chinthala**

Assistant Professor,  
Mahatma Gandhi Ayurvedic College, Hospital &  
Research Centre, Salod (Hirapur),  
Wardha, Maharashtra – 442001, India.  
Email Id: [rajkumarchinthala207@gmail.com](mailto:rajkumarchinthala207@gmail.com)



## Influence of *Deha-Prakriti* (Body Constitution) in the manifestation of disease in context to *Amavata* (Rheumatoid Arthritis) - An appraisal

### Review Article

Rajkumar Chintala<sup>1\*</sup>, Bhagavathi NNL<sup>2</sup>

1. Assistant Professor, Department of Samhita and Siddhanta, Mahatma Gandhi Ayurvedic College, Hospital & Research Centre, Salod (Hirapur), Wardha, DMIMS (DU), Maharashtra, India.
2. TSWRDCW, Warangal (east), Govt. of Telangana, Warangal, India.

### Abstract

*Deha-Prakriti* (DP) is Ayurveda's one-of-a-kind contribution, established at conception and cannot be changed throughout one's life. There are seven varieties of DP. *Vataja*, *Pittaja*, *Kaphaja* (*Shleshmala*), *Samsargaja* [combination of two *Dosha*] i.e. *Vata-Pittaja*, *Pitta-Kaphaja*, *Kapha-Vataja*, *Sannipataja* [combination of three *Dosha*] i.e. *Vata-Pitta-Kapha*. The first and most important aspect of *Dashavidha-parikshyabhavas* (ten important examination factors to be known by the physician) is the DP assessment since it plays a crucial part in *Rogi-Pariksha* (evaluation of the patient) and *Roga-Pariksha* (assessment of the disease). DP allows a physician to assess the condition of *Koshtha* (digestion system), *Agni* (digestive capacity), *Bala* (strength), and *Ayu* (life-span) in both healthy and diseased people. It may also help a physician forecast illness susceptibility, severity of signs and symptoms, disease activity scores, and bio-markers such as hematological, pathological, and biochemical indicators. Based on the severity, a physician may prepare the appropriate diet-chart, medication, dose, *Anupana* (co-drink to the primary medicine), and treatment technique (either *Shodhana karma*- purificatory measure or *Shamana karma*- Palliative measure). In light of the above facts, the current study aims to explore the DP-based susceptibility to *Amavata*, its severity, and the research strategy for future studies. An overview of evidence-based study on developing *Deha-Prakriti* with diverse illness conditions may be provided in this work, allowing for the revalidation of ayurvedic literature-based assertions.

**Key Words:** *Amavata*, *Deha-Prakriti*, *Disease susceptibility*, *Roga-Pariksha*, *Rogi-Pariksha*, *Rheumatoid Arthritis*, *Severity of the disease*.

### Introduction

The ancient Indian medical science, Ayurveda has expanded its wings in two ways viz. "*Swasthasya swasthya Rakshanam*"- preserving the positive health of a healthy individual and "*Aturasya Vikara Prashamanam*"- treating a patient's disease (1). To accomplish these two aspects, Ayurveda advocated several *Siddhantas* (concepts), in which *Rogi-Pariksha* (examination of the patient) as well as *Roga-Pariksha* (assessment of the disease), two main pillars for *Cikitsa* (treatment), which aids a physician to determine the *Bala* (strength) of a patient and to estimate the severity of the disease respectively (2). In *Deerghamjivitiyam Adhyaya*, the first chapter of Caraka Samhita sutrasthana (an ancient Indian medical treatise), Acarya Agnivesha has quoted that "*Purusham Purusham veekshya sa jneyo Bhishaguttamah*" – the best physician

(*Utama Bhishak*) is who examines each patient accurately, thereby prescribes or advice the management that prevents from medical errors (3). Furthermore, to achieve success in the direction of a disease, a total of ten examination factors have been enlisted in *Vimanasthana* of Charaka Samhita with a term as "*Dashavidhapareekshyabhavas*", in which the first and foremost factor is "*Deha-Prakriti* (DP- body constitution)" (4). As per Charaka Samhita, DP is 4 types namely, *Vatala*, *Pittala*, *Shleshmala*, and *Samadhau Prakriti* (5). According to Sushruta Samhita, DP is of 7 types. *Vataja*, *Pittaja*, *Kaphaja*, *Samsargaja* [combination of two *Dosha*] i.e., *Vata-Pitta*, *Pitta-Kapha*, *Kapha-Vata* and *Sannipataja* [combination of three *Dosha*] i.e., *Vata-Pitta-Kapha* (6). DP enables a physician to estimate the status of *Koshtha* (digestion system), *Agni* (digestive capacity), *Bala* (strength), and *Ayu* (life-span) in both the healthy as well as the patient (7). It also aids a physician to predict the disease susceptibility, severity in terms of signs and symptoms, variations in disease activity scores, changes in hematological, pathological, and biochemical markers.

Modern scientists and clinicians have developed their confidence in P4, or predictive, preventive, personalized, and participatory medicine, during the past decade. Despite all current studies, individual differences in illness manifestation and the effects of

#### \* Corresponding Author:

#### Rajkumar Chintala

Assistant Professor, Department of Samhita and Siddhanta, Mahatma Gandhi Ayurvedic College, Hospital & Research Centre, Salod (Hirapur), Wardha, DMIMS (DU), Maharashtra, India.  
Email Id: [rajkumarchintala207@gmail.com](mailto:rajkumarchintala207@gmail.com)



Original Research Article

## A case-control study for exploring the association of Prakriti with Rheumatoid Arthritis

Rajkumar Chinthala<sup>a,\*</sup>, Arjun Singh Baghel<sup>b</sup>, Kamble Shubhangi<sup>b</sup>, N.N.L. Bhagavathi<sup>c</sup>

<sup>a</sup> Department of Samhita & Siddhanta, TTD's SV Ayurvedic College, A Constituent Educational Institute of Tirumala Tirupati Devasthanams, Tirupati, Andhra Pradesh, 517507, India

<sup>b</sup> Department of Basic Principles, Institute of Teaching and Research in Ayurveda, Jamnagar, 361008, India

<sup>c</sup> TSWRDCW (Telangana Social Welfare Residential Degree Colleges for Women), Warangal (East), Rangashaipet, Telangana, 506005, India



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### ABSTRACT

**Background:** Deha-Prakriti (DP) is a unique contribution of Ayurveda, which distinguishes the population into three main groups viz., Vata, Pitta, and Kapha predominant individuals. Its assessment helps physicians to prescribe a suitable diet, daily regimen, and lifestyle that prevents non-communicable diseases. Amavata (Rheumatoid Arthritis) is a disease that needs personalized management approach.

**Aim:** To evaluate the association of DP with Amavata (Rheumatoid Arthritis).

**Objective:** To evaluate DP-based susceptibility in the manifestation of Amavata vis-à-vis Rheumatoid Arthritis.

**Methodology:** A case-control study was conducted from 18.04.2018 to 09.01.2020, involving 150 cases (patients of Amavata), and 150 controls (healthy volunteers), matching in age (between 18 to 50 years), and sex, selected from Jamnagar. CCRAS-PAS for both the groups, Health Assessment proforma of TRI-SUTRA project CSIR-AYURGENOMICS, were used. Logistic regression analyses were conducted to determine the relationship between DP and Amavata.

**Results:** The proportion of people with Vata dosha in the case group (53.79%) was substantially higher ( $P < 0.0001$ ) than in the control group (24.91%). Pitta (39.35%) and Kapha (36.27%) doshas were found to be more prevalent in the control group ( $P < 0.0001$ ). There was a six-percent rise in the likelihood of developing Amavata with every unit increase in Vata percentage, according to logistic regression analysis.

**Conclusion:** Vata predominant DP has a significant association with Amavata. Vata predominant DP individuals are more susceptible to Amavata than Pitta and Kapha predominant DP individuals.

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## 1. Introduction

Ayurveda, a traditional medical system of India, substantiates the psychosomatic constitution of an individual with the concept of Deha-Prakriti (DP), [1]. "Prakriti" is an individual's innate psychosomatic framework determined at the earliest stages of fertilisation by the relative predominance of Sperm and Ovum [2]. Human constitution is unaltered from conception to death until fatal signs appear [3]. Phenotypic heterogeneity is the main complication encountered in contemporary medicine in the context of complex disease genetics.

DP separates people into Vata, Pitta, and Kapha phenotypes. Ayurveda literature speculated that some individuals may have balanced Vata, Pitta, and Kapha, while some show either Vata or Pitta or Kapha dominance. First-category, people with Sama Prakriti, those have balance of Tridoshas and are healthy while others may develop diseases [4]. Vata, Pitta, and Kapha dominants are weak, medium, and strong respectively [5]. Sama Prakriti people are resistant to diseases. People with only one vitiated dosha are generally unhealthy, but they can stay healthy by eating and exercising according to their constitution [4]. DP determines disease susceptibility, severity, diet, and regimen in Ayurveda [1, Vimana 6/15]. The confirmation of Deha-Prakriti is essential to examine a healthy person or patient's physical, physiological, and psychological traits and recommend a diet and lifestyle for good health, preventative medicine, and therapy. Ayurvedic seers ranked Prakriti

\* Corresponding author.

E-mail: [rajkumarinchintala207@gmail.com](mailto:rajkumarinchintala207@gmail.com)

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## Variations in the severity of symptoms, DAS28, and Disability Index among different *Vata* predominant *Deha-Prakriti* individuals of *Amavata* (~Rheumatoid Arthritis) - An Analytical Observational Study

### Research Article

Rajkumar Chinthala<sup>1\*</sup>, Kamble S B<sup>2</sup>, Bhagavathi NNL<sup>3</sup>, Baghel A S<sup>2</sup>

1. TTD's Sri Venkateshwara Ayurvedic College, Tirupati, Andhra Pradesh, India.

2. Institute of Teaching and Research in Ayurveda, Jamnagar, Gujarat, India.

3. TSWRDCW (Telangana Social Welfare Degree Colleges for Women), Govt. of Telangana, India.

### Abstract

**Background:** *Deha-Prakriti* (DP) phenotypic categorization of Ayurveda will subgroup afflicted populations by severity to help treat the illness more accurately and selectively. But data creation is scarce. *Amavata* (~Rheumatoid Arthritis) is one of such diseases, is caused by the accumulation of *Ama* and exacerbated *Vata* in the joints. **Aim:** To assess symptom severity, duration of morning stiffness, DAS28, and DI among different *Vata*-dominant DP patients of *Amavata*. **Material & Methodology:** The CCRAS-PAS scale was used to screen 155 clinically diagnosed *Amavata* patients for DP. Those with *Vata* predominant DP were divided into Single *Vataja* (V), *Vata-Pittaja* (VP), and *Vata-Kaphaja* (VK) DP based on *dosha* proportion in scale output. demographic profile, symptom intensity, duration of morning stiffness, DAS28, and DI were analysed using SPSS software version 20.0. **Results:** Kruskal-Wallis test showed that Single *Vata* dominating DP patients had more severe *Sandhi-shula* (joint pain) ( $p < 0.0001$ ), *Shunatanga* (joint numbness) ( $p = 0.0069$ ), and *Nidra-Viparyaya* (irregular sleep patterns) ( $p = 0.0012$ ) than VP and VK DP persons. *Sandhi-Shotha* (joint swelling) ( $p = 0.0299$ ), *Angamarda* (generalised body pains) (0.0130), *Alasya* (laziness) ( $p < 0.0001$ ), *Gaurava* (heaviness) ( $p < 0.0001$ ), and *Apaka* (delayed digestion) ( $p = 0.0254$ ) were severe in VK DP, while *Trishna* (thirsty) and *Nidraviparyaya* ( $p = 0.0012$ ) were more severe in VP DP individuals. ANOVA analysis showed that morning stiffness ( $2.03 \pm 0.2$  hours,  $p$  value 0.446), DAS28 ( $6.85 \pm 0.175$ ,  $p$  value 0.0035), and DI ( $1.87 \pm 0.54$ ,  $p$  value 0.0003) were substantially higher in solitary *Vataja* compared to VP and VK DP. **Conclusion:** Single *Vataja* DP had more severe morning stiffness, DAS28, and DI. Sign and symptom intensity differed by DP.

**Keywords:** *Amavata*, DAS28, *Deha-Prakriti*, Disability Index, Disease severity, *Rheumatoid Arthritis* (RA), *Vata*.

### Introduction

In terms of life science, health, and therapy, Ayurveda is the most ancient and classical knowledge foundation; its antecedents trace back to the scriptures (1,2). Genetics of complicated illness problems have phenotypic heterogeneity, which is the major constraint in current modern medicine. This mandates the use of alternative and combinational therapy (3,4). When it comes to addressing this issue, Ayurveda has a unique technique known as *Deha-Prakriti* (DP), which designates people into *Vata*-predominant, *Pitta*-predominant, and *Kapha*-predominant categories based on their body types (5). It shows that ayurvedic treatises from thousands of years ago defined the notions of individualized and preventative treatment (6,7). The evaluation of DP of an individual is given first and foremost place among the *Dashavidha Pareeksha* (ten-

fold examination methods mentioned for the assessment of a patient's strength) (8).

A person's anatomical, physiological, and psychological constitution impacts their biological functions and reactions, according to the DP model (9,10). During conception, DP is determined by the relative preponderance of three *Doshas* (Body humoral factors viz. *Vata*, *Pitta*, and *Kapha*), constituted of *Panchamahabhutas*, namely *Prithvi*, *Ap*, *Tejo*, *Vayu*, and *Akasha*, (earth, water, fire, air, and ether respectively) (11). For example, a healthy person has all three *Doshas* in balance (12). The literature enlisted seven types of DP, namely, Single *Vataja* (V), *Pittaja*, *Kaphaja*; *Dwandwaja* (dual combinations) *Vata-Pittaja* (VP), *Vata-Kaphaja* (VK), *Pitta-Kaphaja* and *Tridoshaja* or *Samadoshaja Prakriti* (13). According to ayurvedic literature, the disease's susceptibility and severity may also be affected by the DP (14). Based on the existence of powerful and comparable etiologies, it is said that a person is more susceptible to illnesses impacted by the same *dosha* of individuals *Prakriti* (15). For instance, *Kapha-varadhaka* or *Kapha-prakopaka* etiological variables produce severe *Kapha* dominant illnesses in *Kapha* dominant DP persons more rapidly and readily than the other DP individuals. *Vata*,

\* Corresponding Author:

**Rajkumar Chinthala**

Assistant Professor,

Department of Ayurveda Samhita & Sddhanta,

TTD's SV Ayurvedic College, Tirupati - 517507.

Andhra Pradesh, India.

Email Id: [drakayul986@gmail.com](mailto:drakayul986@gmail.com)



## SIGNIFICANCE OF NYAYAS (MAXIMS) IN UNDERSTANDING PHILOSOPHICAL ASPECTS OF AYURVEDA: A CRITICAL REVIEW

RAJKUMAR C<sup>1</sup>; SHUBHANGI KAMBLE<sup>2</sup>; A S BAGHEL<sup>3</sup>; HITESH A VYAS<sup>4</sup>; BHAGAVATHI NNL<sup>5</sup>

Department of Basic Principles<sup>1,2,3,4</sup>,

Institute for Postgraduate Teaching & Research in Ayurveda,  
Gujarat Ayurved University, Jamnagar- 361008, Gujarat (India)

National Institute of Nutrition<sup>5</sup>(Indian Council of Medical Research (ICMR),  
MoHFW, GOI), Hyderabad - 500007, Telangana (India)

**Abstract: Introduction:** The word 'Nyaya' (maxim) is defined in Sanskrit dictionaries as a tool to determine the meaning of Vedas. Maxim packs a lot of meaning into a nugget of words. Mainly two types of Nyayas are found viz. *Laukika Nyayas* and *Shastriya Nyayas*. Since antiquity, various Sanskrit scholars integrated these maxims in their works to disseminate the subject matter in a lucid manner. Similarly, ancient ayurvedic seers utilized different maxims in many instances for the better understanding of ayurvedic concepts. Philosophical concepts are one amongst them. It is essential for an ayurvedic scholar to understand the philosophical concepts since philosophical equilibrium plays a pivotal role in maintaining *Swasthya* (health). **Materials and Methods:** Original texts of *Brihatrayi* (Greater trio of Ayurvedic classics) along with available commentaries, translations, and published articles in peer-reviewed journals; books and other subject related material available online have been thoroughly screened, compiled, organized and described in a systematic manner. **Observations and Results:** After a thorough screening of *Brihatrayi*, it was observed that total 70+ maxims have been found in 150+ different contexts of *Brihatrayi*. Among them, *Shilaputraka Nyaya*, *Utpalashatapatravedhini Nyaya*, *Alatachakraadarshana Nyaya*, *Dirgha-shashkuli bhakshana Nyaya* and *Pinda-Brahmanda Nyaya* were found in different philosophical contexts of *Brihatrayi* where as *Andhapangu Nyaya*, *Vichitaranga Nyaya* and *Kadambamukula Nyaya* were found in philosophical related literature. *Shilaputraka Nyaya* illustrates the characteristic similarity in *Avyakta* and its derivatives. The initiation of the evolution process is best visualized by *Andhapangu Nyaya*. The methodology of illustration of remaining maxims have been discussed in the full paper. **Conclusion:** The philosophical background is like a soul to Ayurveda and it is definitely not possible to learn Ayurveda based only on the limited approach by setting aside the philosophy. Philosophical aspects are difficult to understand for an average scholar. Maxims might be helpful to combat the obstacles as they illustrate these aspects with day-to-day life situations, thus emphasizing the inevitable role of maxims for the better understanding of philosophical aspects.

**Keywords:** Ayurveda, *Brihatrayi*, Maxims, Philosophical aspects.

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### INTRODUCTION

Since antiquity, Sanskrit language is embellished and enriched by various scholars with the help of many devices among which the *Nyayas* (maxims) are the most important. Maxims are worldly sayings, they incorporate the stories or current legends among the people which imparts sound advice to the people. Maxims are the gems of wisdom, collected from the ocean of human behaviour patterns. The ever expanding horizon of worldly life is giving rise to condensed

expressions of human traits. Though 'Nyaya' (maxim) means justice, it expresses many more meanings. 'Maxim' word is well known as "the science of logic", which permeates wide sphere of human beings, animals, birds, trees and even inanimate objects. Maxims are very brief, mostly embodied in one compound with vague or concealed incidents [1]. There are mainly two types of *Nyaya* viz. *Laukika Nyayas* and *Shastriya Nyayas*. In Sanskrit rhetoric, various scholars integrated these maxims in their works to disseminate the subject





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Review Article

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## ANCIENT ARCHIVES OF DEHA-PRAKRITI (HUMAN BODY CONSTITUTIONAL TRAITS) IN AYURVEDIC LITERATURE: A CRITICAL REVIEW

Rajkumar Chinthala <sup>\*1</sup>, Shubhangi Kamble <sup>2</sup>, A. S. Baghel <sup>3</sup>, NNL Bhagavathi <sup>4</sup>

<sup>1</sup>Ph. D. Scholar, Department of Basic Principles, IPGT & RA, Gujarat Ayurved University, Jamnagar, Gujarat, India

<sup>2</sup>Associate Professor, Department of Basic Principles, IPGT & RA, Gujarat Ayurved University, Jamnagar, Gujarat, India

<sup>3</sup>Professor & HOD, Department of Basic Principles, IPGT & RA, Gujarat Ayurved University, Jamnagar, Gujarat, India

<sup>4</sup>Health Supervisor, TSWRDCW, Warangal (East), Pembarti, Telangana, India

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\*Corresponding author

E-mail: drrajayurveda1986@gmail.com

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### ABSTRACT

Since antiquity, Ayurveda possesses a unique identity by defining some distinct principles in which Prakriti is the one. Assessment of body constitution is the first and foremost factor in Dashavidha parikshas (10 important aspects to be examined by a physician). Dashavidhparikshas are very essential to assess the strength of an individual and also the severity of the involved Doshas. Based on the descriptions available in Ayurvedic literature, Prakriti is a conglomeration of anatomical, physiological, psychological and sociological characters. Assessment of body constitution (Deha-Prakriti) is essential for every physician as it helps in selection of the drug or therapeutic procedure, determination of the drug dosage, mode of administration, and in prescribing wholesome, unwholesome diet and lifestyle. It also helps in the prediction of disease susceptibility and in the estimation of disease severity or prognosis. But these characters are not completely enlisted in a single compendium, they are scattered among different texts. Keeping this in view, the present research paper has been planned to collect all the characters (traits) related to body constitution, segregate and classify them as per different sections. This information will help in the development of an appropriate and reliable questionnaire to assess the precise and well-defined body constitution of an individual thereby facilitating a lot in clinical practice.

**Keywords:** Ayurveda, Dashavidha parikshas, Deha-Prakriti, Diet, Disease, lifestyle

### INTRODUCTION

Prakriti is a unique concept of Ayurveda, according to which every human being is different from others and should be considered as a different entity. The word "Prakriti" means "Swabhava" or innate nature of an individual.<sup>1</sup> Prakriti (human constitution) is a conglomeration of physical, physiological, psychological and behavioural (sociological) characteristics in human beings. It is formed in mother's womb at the stage of a fertilized ovum with effect preponderance Dosh (humour i.e., Vata, Pitta, Kapha) and never be changed throughout life.<sup>2</sup> By nature, the types of body constitution do not get aggravated, perverted or diminished except when the end of life is approaching. Doshaja Prakriti cannot be harmful to an individual like an insect born in poison does not become a victim of the fatal effect of the same.<sup>3</sup> In Ayurveda, the human population is categorized into seven subpopulations based on their Prakriti viz. Vataja, Pittaja, Kaphaja, three types of Dwandwaja i.e., Vata-Pittaja, Pitta-Kaphaja, Vata-Kaphaja and Tridoshaja.<sup>4</sup>

Acharya Charaka has delineated that there are six factors which influence the Deha-Prakriti (Human body constitution). Jati-prasakta (racial peculiarities), Kula-prasakta (familial predisposition), Deshanupatini (demographic), Kalanupatini (seasonal variations of the day, at the time of conception)

In order to achieve success in the determination of body constitution, ancient Ayurvedic seers enlisted different kinds of characteristic features with respect to each Doshaja Prakriti based on their respective Gunas (qualities/characteristics).<sup>7</sup> These characters are the visible forms of different attributes of respective Doshas. But these characters are not completely enlisted in a single compendium, they are scattered in different texts. Keeping this in view, the present work has been planned to collect all the characters (traits) related to body constitution, segregate and classify them as per different sections.

For the present work, Brihatrayi, Laghutrayi and other succeeding ayurvedic treatises such as Harita Samhita, Bhela Samhita, Vangasena, Vrindamadhava, Siddhasara Samhita, Kashyapa Samhita, Bhavaprakasha and Yogaratnakara were thoroughly screened for fulfilling the first aim of the study and then segregated the traits under different sections along with representing Doshas accordingly.

### Archives of deha-prakriti (human body constitutional traits) in Ayurvedic classics

After a thorough screening of the above mentioned ayurvedic literatures it is found that Brihatrayi have deliberated the concept of Prakriti in a detailed manner, whereas other remaining literatures have stated the same in a brief manner. The



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Review Article

## Significance of *Shringagrahika Nyaya* (maxim) in understanding Charaka Samhita in context to commentary of Chakrapani

Rajkumar Chinthala, Shubhangi Kambie, A. S. Baghel, N. N. L. Bhagavathi\*

Department of Basic Principles, IPGT and RA, Gujarat Ayurved University, Jamnagar, Gujarat, \*Health Supervisor, TSWRDCFW, Warangal (East), Telangana, India

### Abstract

**Background:** Ancient Ayurveda seers presented the knowledge in coded language, in the form of *Sutras* (verses). These verses are characterized by *Padairalpam*, *Matimbuddhwa*, i.e. having few words with concealed meaning with larger applications which can be explored with the help of Sanskrit grammar. Sometimes, just translation of the original verses might not convey the authentic and primary aim of the author as it depends on various factors such as the context, time and place. For this purpose, various commentators have adopted the methodology of integrating *Nyayas* (maxims) in their respective commentaries. *Shringagrahika Nyaya* (SGN) also belongs to the same category as it has been mentioned in several contexts in Chakrapani's Ayurveda Dipika (AD) commentary on Charaka Samhita. It is the maxim of seizing the ox by its horns. The present work is an attempt to explore the different contexts of SGN in AD commentary. **Aim and Objective:** To explore the significance of SGN in understanding Charaka Samhita in context to AD commentary of Chakrapani. **Materials and Methods:** Original text of Charaka Samhita along with Chakrapani's commentary, other available translations and published articles in peer-reviewed journals, published books and subject-related material available online have been thoroughly screened, compiled, organized and described in a systematic manner. **Observations:** Thorough screening of AD commentary of Charaka Samhita revealed that SGN has been mentioned in 12 different contexts out of which some are in positive and some are in negative sense. In a group of similar objects to indicate a particular one, this maxim has been used. **Conclusion:** To get authentic apprehension of Ayurvedic treatises, the knowledge of SGN is essential for the physicians, especially for better understanding of Charaka Samhita as well as successful implementation of fundamental concepts for the management of various disease conditions.

**Keywords:** Ayurveda Dipika commentary, Chakrapani, Charaka Samhita, *Nyayas*, *Shringagrahika Nyaya*

### Introduction

Acharya Charaka has enlisted three methods to get profound knowledge from Ayurvedic treatises, viz., *Adhyayana* (study), *Adhyapana* (teaching) and *Tadvidyasambhasha* (scholarly discussion),<sup>[1]</sup> whereas Acharya Sushruta has quoted four factors or qualities which enhance the intelligence and retention power, viz., *Satatadhyayana* (constant study), *Vada* (discussion), *Paratantravalokanam* (studying other branches of science) and *Tadvidhyaacharyaseva* (following the learned preceptors in the respective branches of knowledge).<sup>[2]</sup> Thus, utmost importance is given for *Adhyayana* (study) which is not an easy task as the treasure of Ayurvedic knowledge is encrypted in the form of verses characterized by '*Padairalpam*

*Matimbuddhwa*' (larger application with minimal words).<sup>[3]</sup> It can be explored with the help of Sanskrit grammar which comprises *Shabdārtha* (meanings), *Sandhi* (conjunctions), *Samasa* (compounds), *Vibhaktipratyaya* (cases) and *Alankara* (figure of speech). Sometimes, mere translation of the original verse may not give exact idea of the author as it depends upon various factors such as the context, time and place etc. To overcome this, various maxims have been brought into limelight by the different commentators.

**Address for correspondence:** Dr. Rajkumar Chinthala,  
Department of Basic Principles, IPGT and RA,  
Gujarat Ayurved University, Jamnagar- 361 008, Gujarat, India.  
E-mail: drrajayurveda1986@gmail.com

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Name of the Faculty: Dr. Ch. Sharadha

Name of the Department: Telugu



## తొలితరం దళితకథలు - సామాజిక విశ్లేషణ

- తెలుగుకవి శారద, సహాయ ఆచార్యులు, తెలంగాణ సాంఘిక సంక్షేమ గురుకుల మహిళా డిగ్రీ కళాశాల, వరంగల్ తూర్పు, వరంగల్ జిల్లా.

ఆధునిక తెలుగు సాహిత్యంలో ఉద్వేగం ఎగిసిన ఉద్యమం దళిత సాహిత్యం. సామాజిక పరిణామంలో దళితుల అస్తిత్వానికి, పౌరత్వానికి, చరిత్రలో పునర్నిర్మాణానికి దిక్సూచిగా నిలిచింది. "చాతుర్వర్ణం మయంస్పృష్ట్యా" అని భగవానుడు గీతలో చెప్పినట్లు బ్రాహ్మణుడు, క్షత్రియుడు, దైత్యుడు, శూద్రుడు అనే నాలుగు వర్ణాలు పోగా మిగిలిన ఐదవవర్ణం "పంచమడు" తరతరలుగా, యుగయుగాలుగా అణచి వేతకు గురి అవుతున్నాడు తన అస్తిత్వము కొరకు పోరాటం చేస్తూనే ఉన్నాడు. అసలు దళిత అనే పదాన్ని ఈ మధ్యకాలంలో ఉపయోగిస్తున్నారు. దళిత జాతి, అణచివేతకు వ్యతిరేకంగా అనాదిగా కొంత మంది దళితేతరులు కూడా పాటుపడుతున్నారు. శంకరాచార్యులు, రామానుజాచార్యులు మొదలైన వారు అస్పృశ్యతకు వ్యతిరేకంగా అందరినీ దిశానిర్దేశం చేశారు. దళిత సాహిత్యాన్ని మొదటగా స్పృశించిన వారు పాల్కురికి సోమనాథుడు. ఆయన రాసిన బసవ పురాణంలోని గాథలన్ని దళితులైన శివభక్తులవే. ఇక్కడ దళిత సాహిత్యం గూర్చి ప్రస్తావించాలంటే "దళితుల జీవితాలను చిత్రించేది, దళితుల ఆర్థిని, ఆవేదనను, ఆవేశాన్ని, ఆగ్రహాన్ని, ప్రతిఘటనను, ప్రతిఘటించేది, దళితులకు మెఱుగైన, సుఖమయమైన, ఆందరితో సమానమైన జీవన గమనాన్ని నిర్దేశించేది, దళిత వైకల్యాన్ని వ్యక్తం చేసే దళిత సాహిత్యం" అని ఎస్వీ సత్య చార్యులు గారు అన్నారు. దళిత సాహిత్యం రావాలి అంటే దళిత జీవనఅనుభవాల నుండే రావాలి. సానుకూలతతో సంపత్తి కాకుండా 'సహనుకూలత' (ఎంపత్తి)తో వాస్తవమైన సాహిత్యంలో గాఢత వస్తుందన్నారు.

ఇక దళిత సాహిత్యం విషయానికి వస్తే కథలు అనేవి ఒక ప్రత్యేకతను సంతరించుకున్నాయి. సాహిత్యంలోనే కథలది ఒక ప్రత్యేక విభాగం. 1920 దశకం దళిత బహుజన అస్తిత్వ వైకల్యం వికసించిన దశకం. వ్యవస్థకు వ్యతిరేకంగా ఒకవైపు త్రిపురనేని రామస్వామి చౌదరి ప్రారంభించిన బ్రాహ్మణ వ్యతిరేక ఉద్యమం మరొక వైపు భాగ్యలక్ష్మి వర్మ, ఆరిగ రామస్వామి వంటివాళ్ళు నడుపుతున్న దళిత అస్తిత్వ ఆత్మగౌరవ ఉద్యమం తెలుగునాట ప్రజాస్వామిక బావాల వ్యాప్తికి కారణ మయ్యాయి.

తెలుగులో ఆధునిక కథ సంస్కరణోద్యమంతో పాటే రావు దిద్దుకుంటూ వస్తున్నది. తొలి తెలుగు కథకురాలిగా గుర్తించబడిన బందారు అచ్చమాంబ అయినా, గురజాడ అయినా వారి రచనలలో దళిత ప్రస్తావన కనబడదు. అస్పృశ్యతపై సమస్యపై "శ్రీపాదసుబ్రహ్మణ్యశాస్త్రి రాసిన పుల్లం రాజు కథ (ప్రబంధాంధ్ర -1925) తొలి తరం మొదటి దళిత కథానిక గుర్తించబడింది. అస్పృశ్యత నివారణ కోసం చక్రవర్తి ముందుకొస్తాడు ... చివరికి తియ్యటి మాటలు చెప్పుతూనే మాల మాదిగల మద్య తెలివిగా చిచ్చుపెట్టిన రామచంద్రయ్యను ఆధునిక మనువుగారచయిత అవిచ్ఛరిస్తాడు. దళిత సమస్యను చిత్రించిన తొలి కథగా ఈ కథ సాహిత్య చరిత్రలో నమోదు అయ్యింది. 1927 జూలై 16 నాటి గోల్కొండ పత్రికలో అచ్చయిన "యౌవన భ్రాంతి" కథలో కొంత దళిత జీవిత పాఠ్యాల ప్రస్తావన కనిపిస్తుంది. కటంగూరి నరసింహారెడ్డి కథా రచయిత. ఇందులో విచల ప్రేమికుడైన సుదర్శనుడు అనే వాడి గూర్చి రాయబడిన కథ. ఇందులో ఎక్కడా ఆ యువకుడి కులం ప్రస్తావన కనబడకపోయినా రావు బహదూర



రాచిల్యా సాహిత్యం

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**36. రాచిల్యాంక విశ్వసాధ ఆస్తి - కథలు, సామాజిక స్పృహ\***

చిలుకమణ్ణి శారద  
సహాయ ఆచార్యులు  
తెలంగాణ సాంఘిక సంక్షేమ గురుకుల మహిళా విశాఖ  
వరంగల్ తూర్పు, రంగళాయిపేట, వరంగల్  
ఫోన్ : 90105 19559  
Email: sharadachilukamam@gmail.com

రాచిల్యాగా ప్రసిద్ధుడైన రాచిల్యాంక విశ్వసాధరాష్ట్ర 1922 అక్టోబరు 30వ తేదీన శ్రీకాకుళం లోని అతి సాధారణ కుటుంబంలో నీలాంబిక, నారాయణ మూర్తి దంపతులకు జన్మించారు. తల్లికి సంగీత సాహిత్యాలలో ప్రవేశం ఉండడం చేత బాల్యం నుండే రాచిల్యాంక సాహిత్య పర్యావేష్టన ఎదురైంది. చిన్న వయసులోనే రాష్ట్రం లెక్కన నవలలు చదివి పేరువాళ్ళ గురించి రాయాలనుకున్నాడు. "అందో బిచోరో"ను చదివి గట్టి కథలు రాయాలనుకున్నాడు. అయిన తన విద్యనూ చదివే సమయం చేశారు. అవి ఎన్నో పత్రికలలో ముద్రించబడ్డాయి. మొదట్లో కొన్ని తమాషా కథలు రాశారు. అయిన తన మనోహరమైన ఏట 1938లో "కేవలం నీలం" అన్న పేరుతో "విశోధిని" పత్రికలో అచ్చయిన కథ అయిన కొరకెక్క. ప్రేమ ఫలితం, ఆలోచన బొర్రు బొకే, మీరే అలోచించండి అనే కథలు విద్యార్థి దశలో అచ్చయిన కథలు. అలివాడ కాంతారాష్ట్ర కాలేజీలోని రాచిల్యాంక మంచి వారి పరిచయం రచయితగా ఆయనకు ఒక అడ్డునిచ్చింది. అది కేవలం రచయితగా గుర్తింపబడాలన్న కోరిక మాత్రమే నేపథ్యంగా అన్న కథారచయకు ఒక ప్రయోజనం, విజయం అందాల్సిన దృశ్యధానికీ దీంపం చేసింది.

1935-36 లో కథారచయ ప్రారంభించినా 1950 తర్వాతనే తీవ్ర వ్యాధికావడం కథారచయకుగా తీసుకోవడం ప్రారంభించారు. 1950 నుండి తీవ్రంగా అందో బిచ్చుకున్న రచనలు చేశారు. "రాచిల్యాంక గళం రాజీవదేవి కలం అనేమాటను సార్థకం చేస్తూ అనేక రచనలు చేశారు. చివ్విచిన్న ఏళ్ళ తేదీలలో యాభైలకు ఎక్కువ రచనలు చేయడం విశేషం

"రాచిల్యా రాచిల్యాంక తీవ్ర బొంబాళం ఎదుగు రచయిత. వివరణలలోనూ బాల్యకాలం విస్మయించు రచయిత. ప్రతీక కోసం కీర్తి కోసం సామాజికి రచయిత అంటారు" చిలుకమణ్ణి వ్రాసాడు.

రాచిల్యా రాచిల్యాంక కథలు చిట్టచివరి దాకం లభిస్తున్నాయి. నేటి సమాజంలో నిత్యము, పై తరగతుల వారి అన్యాయాలకు, కొద్దవారికు గురై చిట్టచివరినలు పడుతున్న దీనినీ ప్రజల తరువున తన ప్రతీకరణలో వారించారు. సమాజం అట్టమగం పొరల్లో అనుభవం భయపడుతూ ముచ్చల తీవ్రతం గడిచి అనేక అధోబాహ్యరతుల సమస్యలను, వాటివలన తరగో ముఖాన్ని సూటిగా గుండెలకు వారించా చిట్ట పై తీవ్రతలకు సారథుల సానుభూతికి మించిన ఏదీక ప్రతిభారంతుడు. శ్రీకాకుళం విజయనగరం ప్రాంతాల మాండలికంలో రచనలు చేసి పరిశుభం అభిప్రాయం "వికటిగన" చదివించిన అద్భుత రచయిత.



## 66. వర విక్రయం - స్త్రీ వ్యక్తిత్వ చిత్రణ

దిలీప్ కుశ్లీ శారద  
 తెలుగు వచనం అధ్యాపకులు  
 తెలంగాణ సాంఘిక సంస్కృతి గురుకులం  
 మహిళా క్రీడ కళాశాల  
 వరంగల్ - తూర్పు వరంగల్ జిల్లా  
 9010519559  
 sharadachilokamarr@gmail.com

అనాదిగా సామాజిక దురాచారాలు ఏవి ఉన్నా వాటి కర్మక పాదాల క్రింద నలిగిపోతూ స్త్రీ లేనది మన చరిత్ర వెలుతుంది. ప్రాచీన కాలం నుండి ఉన్న దేవదాసీ వ్యవస్థ కావచ్చు, చాళుఖివాహనాలు కావచ్చు, వరకట్న సమస్య కావచ్చు, సతీ సహనగుణముల వంటి ప్రారబ్ధమైన అచారాలు కావచ్చు ఇవన్నీ కూడా స్త్రీకి అస్తిత్వం లేకుండా చేశాయి. స్త్రీ అంటే ఒక వారసా ఎవరికి కచ్చిత గీతలో వారు ఉపయోగించుకునే తోగ వస్తువుగా ఐతరూలో అమ్మబడే అంగడి సరుకుగా వివర్ణమై తోనవుతూనే వస్తుంది. సంఘ సంస్కర్తలు, మహానుభావులు ఎంతమంది పోరాటం చేసినా వ్యవస్థ నేటికీ అలాగే కొనసాగడం దురదృష్టవశాత్తూ 19వ శతాబ్దం ప్రారంభంలో పైన చెప్పబడిన దురాచారాలు చాలా ప్రబలితాయి. రాజారామ్ మోహనాచార్యులు లాంటి సంస్కర్తలు వాటిని రూపుమాపడానికి ప్రయత్నించి కొంతమేర విజయం సాధించారు. వాని చాళుఖివాహన కన్యాశుల్కం, వరకట్నం మొదలైనవి. మాత్రం పెనుదూతలై స్త్రీ జాతిని పీకూకిస్తాయి.

కత్తి కన్నా కలం గొప్పదని నమ్మిన అనేక కవులు, రచయితలు తమ కలం ద్వారా ఈ దురాచారాలపై యుద్ధం చేశారు. సాహిత్యం అనేది చలనమైన మార్గమే అని నమ్మిన గురజాడ లాంటి గొప్పకవులు ఒక్కొక్క దురాచారాలపై తమ కవితా శరణును సంధించారు. పూర్ణమ్మ (చాళుఖివాహనం), కన్యాశుల్కం (దయ్యతు అశపడి దిన్న పిల్లలను ముసలివారికి ఇచ్చి కొనాం చేయడం, వేశ్యా వ్యవస్థ, వితంతువుల దుర్గత వేచితం) మొదలైనవి గురజాడ స్ఫురించిన అంశాలు. వీటి ద్వారా అయిన కొంత విజయాన్ని సాధించారు. చాళుఖివాహన నిరోధక చట్టం (శారద ఆక్ట్) రావడం వల్ల చాళుఖివాహనం కొంత నిరోధించబడ్డాయి. కాని అదే కాలంలో వేళ్ళుగిన మరొక సమస్య వరకట్నం భవం తీసుకొని పిల్ల నిష్కడం కన్యాశుల్కం అయితే ధనం ఇచ్చి పిల్లనిష్కడం వరకట్నం రెండింటినీ వాటితురాలు స్త్రీయే. సంతలో సతువులను వేలం చేసినట్లు వరుని తల్లిదండ్రులు దయ్యతు తీసుకొని వరునికి వివాహం చేసేవారు. అందుకే దానిని వరవిక్రయం అన్నారు. వరకట్నం ఇవ్వలేని స్త్రీలు దివ్యాంజలము గురి అయ్యేవారు పీటలపై పెళ్ళిళ్ళు కూడా అగిపోయే పరిస్థితి. అలాంటి పరిస్థితులలో బాళ్ళకూరి నారాయణరావుగారు వరవిక్రయం అనే నాటకం రాశారు. పౌరాణిక నాటకాలు చాలా ప్రచారంలో ఉన్న కాలంలో గురజాడ కన్యాశుల్కం, నారాయణరావుగారు వరవిక్రయం అనే సాంఘిక నాటకాలను రచించి లబ్ధి ప్రతిష్ఠలైనారు. ఈ రెండు నాటకాలు తర్వాత కాలంలో అంధ్ర వేదం అంతలా విరివిగా ప్రదర్శించబడ్డాయి. చలనచిత్రాలుగా కూడా నిర్మించబడ్డాయి.

వరవిక్రయం పది అంశాల నాటకం. వరకట్నం కేంద్రంగా ఈ నాటకం వరుస్తుంది. ఈ నాటకంలో పురుషోత్తమురావు కథానాయకుడు ఒక కుటుంబపెద్ద. ఎవరి సమస్యల పట్ల వారే ఉద్యమించాలి. ఎవరో వస్తారని ఎదురు చూడడం తప్ప అనే సంజెలం వేపద్దంగా ఈ నాటకం నడుస్తుంది. వరకట్న సమస్య స్త్రీలకు సంబంధించినది కాబట్టి వారి సమస్యను వారే పరిష్కరించుకోవాలని కథను పాత్ర ద్వారా రచయిత నిరూపిస్తారు. ఈ నాటకంలో ధర్మానికి నాలుగు పాదాలు అని చెప్పబడ్డాయి.



**Name of the Faculty:Dr. D.Swaroopa**

**Name of the Department: Telugu**



EL/2003/12253

# భావవీణ

కళలు, సాహిత్య, సాంస్కృతిక, భాషాభ్యయన పత్రిక

## BHAVA VEENA

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### పింగళి లక్ష్మీకాంతం

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### “కన్నతల్లి” కథలో - “తల్లి ప్రేమ వ్యవసాయం”

- శ్రీమతి దులం ప్రసాద

పిల్లీ కాలాళ అధ్యపకురాలు, టిఎస్ఆర్ డిగ్రీ కాలేజి, వరంగల్ తల్లి

- డా. టి.ఎం.ఎ. వెంకటేశ్వర్లు

అసోసియేట్ ప్రొఫెసర్, తెలుగు విభాగం ఆదిపతి, కాకతీయ విశ్వవిద్యాలయం, వరంగల్.

పెద్దంటే ఆకాశం కుమార్ సుప్రసిద్ధ కథారచయిత అనే విషయం అందరికీ తెలిసిందే. ఏడు దాసవ కథల్లో కన్నతల్లి కథ ఒకటి కాగా, ఈ కథలోని విషయంకాదు సరికే రించగా అందులో కన్నతల్లి ప్రేమ పర్యవసావాలను తెలియజేయటమే ఈ వ్యాసం ముఖ్యోద్దేశ్యం.

కంటంబంబలో కన్నతల్లి పాత్ర అద్భుతమైనది. అమోఘమూ అనే విషయం కూడా అందరికీ తెలిసిందే. కాని ఈ కథ ద్వారా ఇంకా గొప్ప విషయాలు తల్లి పాత్ర ద్వారా దయలక మనకు తెలియజేయబడ్డాయి. కొడుకు బద్ధిం దిన తర్వాత దురదృష్టవశాత్తు భర్త చనిపోయినప్పటికీ, ఆ తల్లి ఎంతో ప్రేరణతో వ్యవసాయం నడుపు చేస్తూ, కొడుకును అభ్యుదానంగా పెంచుకున్న కన్నతల్లి పాత్ర ఈ కథయందు చాలా గొప్పదిగా మనకు కనబడుతుంది. ఒకవేళ కంటంబంబం యజమాని లేదా ఒక స్త్రీ యొక్క భర్త చనిపోయినా, స్త్రీలు కుంగిపోవడం మానేసి ప్రేరణగా ముందరవేసి ఏల్లల కోసం కష్టపడాలనే విషయాన్ని పాత్రలకు గ్రహిస్తారు. తల్లిగా తాను ఎంత క్రమపాతినా తన కొడుకు కోసమేనని భావించి కొడుకు శ్రేయార్థం కోరు తుంది. అటువంటి తల్లి పాత్ర సృష్టి, నిజ జీవితంలోని పాత్రలుగా మన కళ్ళకు కట్టినట్లుగా ఉంటుంది. అల్లారు ముద్దుగా పెరిగిన కొడుకు తల్లి కష్టం తీర్చడానికి సంపాదనకోసం దుబాయికి వెళ్ళానంటే, వద్దని వారిద్దరినీ దివలకు బలంపెట్టడం ఒక్కటికే సంపాదన తనకు కొడుకు తరిగి మూడు వెలలకే తరిగి వచ్చినా, తన కొడుకును ఎంతగా ఓదార్చుతుంది. బంధువులు, స్నేహితులు ఎవరైనా సరే బాగా సంపాదననే గౌరవిస్తారు. అదేరీతిని, తన కొడుకు

తన కళ్ళ ముందుంటే చాలు నడుకుంటుంది. కొడుకును ఎంతగానో ఓదార్చుతుంది. అతనికి మానసిక వద్దుల ప్రార్థనలు చేయడం చేసే వేసం చేస్తుంది. ఆ మూడవ వ్యక్తులతోనే తన భర్త చనిపోయినా కూడా తల్లి యాదృష్ట చాలా ప్రేరణతో జీవించి ప్రారంభించి కొడుకును పెంచుతూ, కష్ట పడుతూ మరణానంతరం సంపాదించింది. ఈ కథ ద్వారా పాత్రలకు, ప్రేరణలకు కనపడే ప్రేరణ కలుగుతుంది. వలస వచ్చి సంపాదనలేకపోతూ తరిగి వచ్చిన వారిని ప్రేరణపడాలి. దీన్ని సంపాదనే భద్రానం కావడం విషయం తల్లిపాత్ర ద్వారా తెలియపరచింది.

ఇక కథలో మరొకా వ్యవసాయదారులకు సంబంధించిన అనేక విషయాలు చెప్పబడ్డాయి. కొడుకు పెద్దయ్యాక కోసం మరొకా వ్యవసాయ దారులు ఏలా కంటంబంబలో తెలియజేయాలి రచయిత. పాదాల ఉదయాన్నే లేచి పనిచేయటం గతీ చేయడం, పచ్చి లాగింది. వాటిలో పాదాల వాగి దుస్తులూ, ప్రతి సెక్కల కోడికూయకముందే పిల్ల నుండి లేస్తారు. ఇలా రోజూవారీ దినవర్షాలు బదుగుతున్న క్రమంలో ఒక్కొక్కసారి అభ్యవసారం మేజకు పాతికే బలంను అభిలసం, మేకలను అమ్ముకుంటారు. తమ పాటలలో పాటలు ఇంకా వ్యవసాయం చేయడం తేలికైతే కొలుకు తిరుకొని పాటల పాగు చేస్తారు. చేతగాకుండా పాతే తమ పాటలను ఇతరు లకు కొలుకు ఇస్తారు. మరొక వ్యవసాయదారులు ఎప్పు గేదెలు, ఆవులు, బేగలు మొదలైన పనిచేయ వట్ట జారి, దయను కలిగి ఉంటారు. ఇలాంటి విషయాలు కన్న తల్లి కథలో యాదృష్ట పాత్ర ద్వారా పాత్రలకు తెలుసు

కంటంబంబం. అంతే కాక వ్యవసాయదారులు సమయానికి తమ పనిచేయటం చేక, పిల్లను ఆందిస్తారు. అందించ లేకపోతే ఈ కథలో కన్నతల్లి యాదృష్ట ముఖపడుతుంది. పాదాలంబం మనసాయాచారిత కంటంబంబలో ఒక





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# భావవీణ

కళలు, సాహిత్య, సాంస్కృతిక, భాషాస్వయంకర పత్రిక

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### పింగళి లక్ష్మీకాంతం

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### వలస కథల్లో ... స్త్రీ పాత్రల చిత్రణ

శ్రీమతి బాలం సర్వదా  
తెలుగు అధ్యాపకురాలు,  
శివసేనమ్మజూనియర్, వరంగల్ తహ్శీల్,  
సరిశోధకురాలు  
కాకతీయ విశ్వవిద్యాలయం, తెలుగు విభాగం

మానవుడు కనీసం గుర్రం గుర్తకడం వేల ఏళ్ళూ ప్రస్తావనం కొనసాగిస్తున్నాడు. నిజానికి మనదేశంలో కులవ్యవస్థతో వేల ఏళ్ళూ ప్రతి క్రామం స్థూలంవనకే కొనసాగుతుంది. పాిత్రామిక విధానంలో కుల వ్యత్యలు కూలిపోయాయి. తననం భార్యై, తనకం దుర్బల్యై బతుకునెరుపు కోసం, బుక్కెన బుక్కెకోసం కనకం చేతంబుకొని, కన్నవార్లను, కట్టుకున్న వాళ్ళను విడువలేక మనసు రంపకొని పుట్టేడు దు:ఖాన్ని నెత్తినేద పెట్టుకొని వలసలు వెళ్ళుతున్నాడు. తెలంగాణ పల్లెల్లో అర్ధికంగా దితికిపోయిన ప్రతి యువకీయవతులకు ముందుగా గుర్తుకు వచ్చేది, గర్భ కేవే.

పెద్దండీ అలోక కుమార్ గారు రాసిన 'పువ్వుల' కథలో వెంకట అనే వ్యక్తి తన భార్య సిద్దలను చదివి తాను మాత్రం దిటికాల్లో సంపాదనకోసం వెళ్ళినప్పుడు అతని భార్య అయిన సుజాత లండనిగా ఉంటూ కుటుంబంలోని అత్త, తోటికోడళ్ళు, ఇంకీ పక్కవాళ్ళు, ఉల్లెడిపువ్వులు మాట్లాడే విధిపోయివు మాటలు, తిట్లు విని ఎంతగానో కుమిలిపోతుంది. కొంత అందంగా, అభిరుచియంగా, తెలుపుగోటుగా మాట్లాడే స్వభావం, మమనలో ఉన్న స్త్రీ అయినందున అతర పురుషుల వలన సంఘర్షణలు లోనవుతుంది సుజాత. పట్టణ స్త్రీలతో ఎంతయెంతగా, మర్యాదగా వ్యవహరించిన కూడ సూచిపోతీ మాటలతో వెళ్ళిపోవేవాడు. ఏవైనా ఏదైనా అడిగినప్పుడు బుద్ధిలేకపోయినా, అప్పుడడిగిన బుద్ధిలేకపోయినా మంచిగా అలంకరించుకున్నా ఉల్లెడి పువ్వులు విదేశాలకు వెళ్ళిన వ్యక్తి యొక్క భార్యనుపేక్షించి అనేక రకాలూ మాటలం టుంటారు. అవ మాటలు వింటున్న సుజాత మర్దలకు లోనవుతూ మనోవేగంగా వలసను సొంతుకుంది భారలు పడేందర్లలోని ఇతరుల మాటలు ఈ క్రింది విధంగా ఉంటుంటాయని పాతరులు ప్రవేశిస్తారు.

భర్త ముప్పో పోయినదని అగుతలేదు  
పూటకో దీరకల్లి ఉప్పు తిరుగుతుంది  
లోముతల్లి కడవారవుతుంది.  
పచ్చిపోయే వాళ్ళతో విడవకుండా ముప్పుకూరుతుంది.  
చేతిలో నాలుగు పైసలు తనబడగానే కళ్ళు నెత్తికెత్తెయి.

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ఇంతకు ముందు మీత్రిలి దాని లెక్క ఉండేది  
ఇప్పుడు కళ్ళకు అద్దాలు... కాళ్ళకు చెప్పులు వచ్చినాయి  
నేకేందిమనోరాశిని మాపాలనా మానుంది తనదే నాయే అని రికరతాలూ మాట్లాడుతుంటుంటారు. 66



Name of the Faculty: Dr. P. Veena

Name of the Department:

Zoology



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### Studies on physicochemical variations of Budharam Lake in relation to seasonal variations and its productivity

**Veena Polasani, G Benarjee**

Hydrobiology and Fisheries Research Laboratory, Department of Zoology, Kakathiya University, Vidhyaranyapuri, Warangal, Telangana, India

#### Abstract

Water parameters and plankton diversity are very important for determining of fish production. The specific status of limnological characteristics and diversity of plankton in lake Budhram lake have been studied through seasonal surveys in two annual cycles 2015 - 16 and 2016 - 17. In the present study, water samples were collected from different locations of Lake Budhram, Mulugu district Telangana state, for physico-chemical analysis. The laboratory test of the collected water samples were performed for analysis of various parameters such as pH, Temperature, Total dissolved solids, Dissolved oxygen, Alkalinity, Total hardness, Chloride, phosphorus, BOD and COD the methods employed for the analysis as per standard methods recommended by APHA, WHO, ICMR. The obtained values are compared with the standard limits. The present study was intended to evaluate the seasonal variation on physico-chemical parameter and their relationship with plankton community of Budhram Lake. The nutrients dynamic of Budhram Lake exhibit considerable seasonal variation due to the rainfall and nutrient utilization of autotrophs. The phytoplankton groups are Chlorophyceae, Cyanophyceae, and Euglenophyceae. The highest plankton density was recorded during summer season while lower in monsoon season. The zooplankton groups are Rotifera, Cladocera, Copepoda, Ostracoda. Chlorophyceae appeared as the dominant group of phytoplankton in Lake Budhram during both the study years. During the first year of study period this group exhibited maximum density of (3221 org/L) followed by Bacillariophyceae (2664 org/L) Cyanophyceae (1435 org/L) and Euglenophyceae (216 org/L). Similarly chlorophyceae also registered maximum density of (3325 org/L) during second year period followed by Bacillariophyceae (2806org/L) Cyanophyceae (1520 org/L), and Euglenophyceae (227 org/L). Annual densities of zooplanktons during the first year Rotifera appeared as dominant group of zooplanktons with higher density (1283 org/L) during the second year of the study period followed by cladocera (579org/L) copepoda (602 org/L) and ostracoda (268org/L). During the first year of the study period Rotifera again contributed maximum density (1270 org/L) followed by copepod (539 org/L) cladocera (485 org/L) and ostracoda (161org/L). The minimum number of zoo planktons and was recorded in the rainy. Phytoplankton and zooplanktons have a nominal positive relationship. Phytoplankton was increased or decreased with the relation with zooplanktons.

**Keywords:** Lake Budharam, physico-chemical parameters, zooplanktons, phytoplanktons

#### Introduction

Water quality is very important in fish farming as poor quality water can affect the health and growth of the fish. It is most important that farmers pay attention to the water chemical and physical factors. Water may be considered as a Binder or matrix in which the dissolved gases inorganic substances minerals as well as organic matter prevails. In addition to dissolve substance the water matrix gives support to microorganism, plants and animal life forms and provides, a medium for a chemical exchange among these populations. The maintenance of good water quality is essential for both survival and optimum growth of culture organisms. The levels of metabolites in pond water that can have an adverse effect on growth or generally and order of magnitude lower than those tolerated by Fishes /prawns/shrimps for survival. Good water quality is characterized by adequate. Oxygen and Limited levels of metabolites each water quality parameters interacts with the influences other parameters, sometimes in complex ways. Concentration of any one parameter that would be harmless in one situation can be toxic in another. For example when aeration, and the gas

degassing problems occur carbon dioxide levels will generally become high while at the same time dissolved oxygen levels become low the result of this particular situation is that not only is there less oxygen available to the fish that fish are less able to use the oxygen and that is available the high carbon dioxide level of the water affects the fishes blood capacity to transport oxygen, aggravating the the stress imposed by low dissolved oxygen levels. Another excellent example of the complex interaction among water quality element is the relationship between the pH and toxicity of ammonia. The relationship between water quality factors and their effect on fish growth rate and helps is complicated for example, fish lack the means to control their body temperature and maintain it is independent of the environment. Environmental temperature changes affect the fishes rate of biochemical reactions, which leads to different metabolic and oxygen consumption rates. At the lower ranges of the species tolerable temperature range these rates decrease. As water temperature increase, fish became more active and consume more dissolved oxygen, while simultaneously



## A Study on Various Home-Based Strategies to Strengthen Immunity Against Covid-19

P. Veena, DR.G. Benerjee, CH Krishna

Department of Zoology, Kakathiya University

District: Warangal, State: Telangana, Country: India

**Abstract:** The immune system plays a central role in protecting against infection, but due to its complexity and therefore the multiple ways during which it deals with viruses, the best advice is to consume a healthy, diverse, and well-balanced diet which can provide the nutrients required to understand a healthy gut microbiome, which can also benefit the system. The nutrients we get from food especially plant-based food like fruits, vegetables, herbs, and spices are essential to keeping our system functioning properly. For instance, research shows that spices like Clove, Oregano, thyme, cinnamon, and cumin contain antiviral and antimicrobial properties. The increased intake of turmeric, coriander, and garlic also improve our system, they have strong antioxidants and antiviral properties. Furthermore the zinc, folate iron, Selenium, copper, and vitamins A, C, E, B6, and B12 we get from food or helps in the system. We should maintain a healthy lifestyle of exercise, meditation, and regular sleep. Adequate sleep will help to support immune functioning. Simply going for a daily stroll or sneaking during a Yoga class a couple of times a week will keep our body physically fit and help the system. However good food practices are always recommended by the subsequent them and minimize the danger of contamination maintain proper hygiene, wash vegetables and fruits before eating wash rinse, and disinfect objects and surfaces whenever before and after use. keep cooked foods to stop harmful microbes. Consume unsaturated fats found in fish, nuts, soy, vegetable oil canola, vegetable oil, and sunflower instead of saturated fats found in butter fatty, meat coconut, and Palm oils, cheese, ghee, and cream. We should drink 8 to 10 glasses of water every day. To maintain effective stress reduction techniques keep our system healthy. Avoid alcohol and cigarette smoking also help our system.

**Keywords:** Immune system, antioxidants, anti-viral properties.

### I. INTRODUCTION

The immune system consists of organs, cells, tissues, and proteins. Together, these perform bodily processes that repel pathogens, which are the viruses, bacteria, and foreign bodies that cause infection or disease. When the system comes into contact with a pathogen, it triggers an immune reaction. The system releases antibodies, which attach to antigens on the pathogens and kill them. Incorporating specific foods into the diet may strengthen a person's immune reaction. Read on to get 15 foods that boost the system.

The immune system is the body's defense mechanism. It forms the second line of defense, after physical barriers just like the skin and therefore the mucous membranes. It is located throughout the body and includes the thymus, the spleen, bone marrow, and a huge network of lymph nodes. It is made from many cells, proteins, tissues, and organs. The main function of the system is to stop and fight infection. A good system is important for the correct functioning of the body. A weakened system can cause symptoms like frequent sickness, allergies, fatigue, digestive issues, delayed growth, and slow development. A low immune function is often thanks to emotional stress, sleep deprivation, vitamin deficiencies, lack of workout, overexposure to harmful ultraviolet (UV) sunrays, excessive use of antibiotics, exposure to environmental toxins, poor dietary habits, and inadequate hygiene. Boosting the immune system is possible through lifestyle changes and some simple home remedies as recommended by Ayurveda. The metabolic activity of immune cells is enhanced after a viral infection, such as the one driven by COVID-19. Dietary approaches that support a healthy gut microbiome can benefit the system and ensure an honest nutritional status that might help the host affect pathogens. Although the system is usually working to stop pathogens from invading the body, also as eliminating those pathogens and generating an immunological memory, the metabolic activity of immune cell types is enhanced following a virus infection like COVID-19. That heightened activity is amid a better demand of energy and nutrients, which come from diet, to satisfy the immune cells' requirements. In a new comprehensive review, Prof. Philip Calder from the University of Southampton provides an update on the role of nutrition in supporting the system as a part of the present fight against COVID-19.

**IMPORTANCE ,THREATS AND CONSERVATION STRATEGIES OF  
TELANGANA STATE BIRD, PALAPITTA.****Polasani. Veena, Challa. Krishna (S.A Biology)**Department of zoology, Telangana social welfare Degree college, Warangal East  
Dist: warangal, State : Telangana, Country : India.

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**ABSTRACT:**

Birds are excellent indicators of the state of our natural world. This year's State of India's Birds report, which was recently released, highlights 942 bird species that need conservation priority. Of these, 178 classified as High Conservation Priority and 14 species. Surprisingly the Indian Roller, or called the palapitta in Telugu or the Blue Jay, has been recommended for International Union for Conservation of Nature (IUCN) Red List reassessment. The palapitta (also known as the Blue Jay) is Telangana's state bird and sighting it on Dussehra day is considered auspicious. People believe it as auspicious to see Palapitta (*Coracias benghalensis*) on Dussehra day. Poachers and traders take advantage of the common belief that they capture the birds starting a month before the festival. They tie their legs with thread, trim their wings and stick them with glue to stop them from flying. More cruelly they do not even feed these birds till the day of Dussehra and kept in small cages for public viewing. Even though they leave them after Dussehra, most of these birds die in captivity or immediately after being released. The State Animal Welfare Board and the Telangana State Biodiversity Board along with Humane Society International (HSI) are trying to end this cruelty. Telangana government has decided to take bold step to save the state bird, Palapitta. The government had directed temple managements not to entertain display of Palapittas during Dussehra on the temple premises or environs. They clarified that these birds are protected under Schedule IV of the Wildlife Protection Act, 1972 and any violation of this protection will attract a penalty of Rs. 25,000 and up to three years of imprisonment. The State of India's Birds report is a periodic assessment of the distribution range, trends in abundance, and conservation status for most of the bird species in the country. This comprehensive, national-level assessment report based on observations, observation trends and distribution by over 30,000 birdwatchers from across the country points the way towards the conservation needs of India's birds. Ashwin Viwarathan of Bengaluru-based Nature Conservation Foundation says, "Rapid reforestation of grasslands, landscapes and a natural ecosystem is the reason for the decline in the number of Indian rollers. Rollers eat rodents and small insects which means these too are on a sharp decline. The birds have a great association with the grasslands where cows and goats graze. With the steady approach of planting trees, we are destroying the grazing lands and the ecosystem."

**Keywords:-** Biodiversity, Conservation, Ecosystem.**INTRODUCTION :**

The **Indian roller (*Coracias benghalensis*)** is a bird of the family Coraciidae. It is 30–34 cm (12–13 in) long with a wingspan of 65–74 cm (26–29 in) and weighs 166–176 g (5.9–6.2 oz). The face and throat are pinkish, the head and back are brown, with blue on the rump and contrasting light and dark blue on the wings and tail. The bright blue markings on the wing are prominent in flight. The sexes are similar in appearance. Two subspecies are recognised. Indian rollers are distributed across Asia, from Iraq and the United Arab Emirates in south-western Asia through the Indian Subcontinent, including Sri Lanka, Lakshadweep islands, and the Maldivian Islands. The main habitat of these

birds includes cultivated areas, thin forests, and grassland. They can also be found in parks and cities.





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**A Study On Harmful Effects Of Invertebrate And Vertebrate Pests  
And Their Biological Control In Indian Agriculture.**

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**Dr.P.veena**

Department of zoology, Tswrde Warangal East and Ch.Krishna,SA (Bio  
Science).Dist: Warangal,Telangana.

**Corresponding Author- Dr.P.veena**

**Email- veenachalla2012@gmail.com**

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**Abstract**

Biological control is a method of restricting effects of harmful animals, pathogens and plants using other useful organisms, e.g. microorganisms, insects and plants that inhibit the harmful organisms. The method takes advantage of basic ecological interactions between organisms, such as predation, parasitism, pathogenicity and competition. Today, biological control is used primarily for controlling pests in crop cultivation. Advantages of biological control are that no artificial substances are added, and that pathogens / animals that develop resistance against biological control agents are rare. Biological control is an important component of integrated pest management. Biological control is the beneficial action of parasites, pathogens, and predators in managing pests and their damage. Biocontrol provided by these living organisms, collectively called "natural enemies," is especially important for reducing the numbers of pest insects and mites. Use of natural enemies for biological control of rangeland and wild land weeds (e.g., Klamath weed, St. Johnswort) is also effective. Plant pathogens, nematodes, and vertebrates also have many natural enemies, but this biological control is often harder to recognize, less well understood, and/or more difficult to manage. Conservation, augmentation, and classical biological control are tactics for harnessing natural enemies' benefits. Biocontrol (for vertebrates in particular, the manipulation of habitat conditions) should not be employed a priori, because, if done improperly, the treatment can create more problems than it cures. In fact, it can cause more problems than the use of poisons. With repeated poisoning of vertebrate pests there is concern about the possibility of subtle and undesirable physiological and behavioral responses, or of carcinogenic and mutagenic effects on both the target species and on non target populations. However, when a habitat is modified, there is little doubt but what it will produce more pronounced interactions with other species of animals than would usually result from population reductions caused by either chemosterilents or toxicants. Observations indicate that natural biomes have a well-established, stable, animal-soil-vegetation complex which usually is not delicately balanced. A natural change (e.g., by disease) or man-caused change (e.g., by shooting), in the density of a native species of browsing, grazing, seed-eating, or predatory mammal does not precipitate a dramatic "balance-of-nature" type chain reaction of responses by other components of the biological community. There are two broad approaches to reducing the density of troublesome populations of rodents,



## Studies on Fish Fauna of Certain Lakes in Relation to Seasonal Variations of their Productivity

Polasani Veena<sup>1</sup>, Dr. G. Benerjee<sup>2</sup>

<sup>1</sup>Research Scholar in Kakathiya University, Warangal 506 009, Telangana, India

<sup>2</sup>Professor, Fisheries Research Laboratory, Department of Zoology, Kakathiya University, Dist: Warangal 506 009, Telangana, India

**Abstract:** Water physico chemical parameters and planktons density are an essential factors for fish productivity. In Lake Jakaram have been studied through seasonal surveys in two years 2015-16 and 2016-17. The present study was aimed to assess the seasonal variation on physico-chemical parameters such as temperature, pH, alkalinity, dissolved oxygen, BOD and COD and their relationship with zooplankton and phytoplankton community. The seasonal variation of nutrients like nitrate, phosphate was recorded to determine the utilization of nutrients by phytoplankton in aquatic environment. The results revealed that physico chemical parameters showed significant difference among the seasons. The statistical analysis of physico-chemical parameter showed well-defined seasonal variation, relatively high temperature, high value of dissolved oxygen and highest production range of alkalinity were observed which are favourable factors for the production of air breathing fishes. The maximum of temperature was recorded during summer season it showed a significant inverse relationship with dissolved oxygen positive relationship with PH. Dissolved oxygen shows a negative relation with alkalinity, total hardness, nitrate, phosphate, chlorides. The correlation analysis exposed that physico-chemical parameter and nutrients are effective dynamics to control the seasonal variations on plankton diversity therefore the present study reveals that Lake Jakaram has rich in plant and community due to presence of high nutrient content and consisting appropriate environmental factor zooplanktons (species) in lake Jakaram during the study period holds a key position in the food web as it was directly related to the consumption of organic energy produced by phytoplanktonic photosynthesis and then by transforming it to the higher trophic levels of heterotrophs such as fish. Some Zoo plankton population was decreased due to unfavourable condition. Plankton diversity and physico-chemical parameters of water or important criteria for evaluating the suitability of water for culture practices. Therefore, structure of different fish food organisms assumes greater significance to fishery management. Seasonal variation of the plankton population of Jakaram Lake Malugu district was carried out during June 2015 to may 2017. phytoplankton density was slightly higher during summer. Chlorophyceae appeared as the dominant group of phytoplankton in Lake Jakaram during both the study years. During the first year of study period this group exhibited maximum density of (2851 org/L) followed by Gymnophyceae ( 1805 org/ L), Bacillariophyceae (2726 org/ l) and Euglenophyceae (416 org/ l). Similarly chlorophyceae also registered maximum density of (3168 org/l) during second year period followed by Gymnophyceae( 1516 org/L), Bacillariophyceae (2687 org/ l),and euglenophyceae( 180 org/ l). Annual densities of zooplanktons during the first year copepoda appeared as dominant group of zooplanktons with higher density (7619 org/ l) during the first year of the study period followed by cladocera( 3775 org/ l) Rotifera (4230 org/ l) and ostracoda (2202 org/l). During the second year of the study period copepod again contributed maximum density (9547 org/l) followed by Rotifera (4614 org/ l) cladocera (3498 org/L and ostracoda (2226 org/L). The minimum number of zoo planktons and was recorded in the rainy. Phytoplankton and zooplanktons have a nominal positive relationship. Phytoplankton was increased or decreased with the relation with zooplanktons

**Keywords:** Lake Jakaram, physico chemical parameters, phytoplanktons, zooplanktons

### 1. Introduction

Water is essential natural resources for all living organisms, whether unicellular or multicellular. Biological production in any aquatic body gives direct correlation with its physico-chemical status, which can be used as trophic status and fisheries resources potential (Jhingran, et al.1969). Life in aquatic environment is largely governed by physico-chemical characteristics and their stability. The maintenance of a healthy aquatic ecosystem is dependent on the physico-chemical properties of water and biological activity. The polluted state of water resources has led to a steady decline in an aquatic productivity. Therefore, limnological investigation is needed. So that monitoring of the lake water is necessary step to mark the trend pattern of pollutants and their effect on living organisms.

In freshwater system the zooplankton forms are important group and constitute basic link of the food chain, planktons are very sensitive to the environment they live and any alteration in the environment leads to changes in the environment in the plankton communities in terms of

tolerance abundance, diversity and dominance in the habitat (Mathivonam, 2007). The plankton study is very useful tool for the assessment of water quality in any type of water body and also contributes to an understanding of the basic nature and general economy of the water body. Plankton being the primary producer from the lowest trophic level in the food chain of freshwater ecosystem and plays a key role in fish culture. The density and diversity of the plankton are greatly influenced by the different physico-chemical parameters of water (wet zel, 1975).

The maintenance of a healthy aquatic ecosystem is dependent on the physico-chemical properties of water and biological activity. Further water condition play a very important role in the production of a breathing fishes. The polluted state of water resources has led to steady decline in aquatic productivity. Therefore, limnological investigation is needed. The maintenance of healthy aquatic ecosystem is dependent on the physico-chemical properties of water. So that monitoring of the lake water is necessary step to mark the trend pattern of pollutants and their effect on living organisms. Aquatic biodiversity, is threatened primary by



## A Study on Various Home-Based Strategies to Strengthen Immunity Against Covid-19

P. Veena, DR.G. Benerjee, CH Krishna

Department of Zoology, Kakathiya University

District: Warangal, State: Telangana, Country: India

**Abstract:** The immune system plays a central role in protecting against infection, but due to its complexity and therefore the multiple ways during which it deals with viruses, the best advice is to consume a healthy, diverse, and well-balanced diet which can provide the nutrients required to understand a healthy gut microbiome, which can also benefit the system. The nutrients we get from food especially plant-based food like fruits, vegetables, herbs, and spices are essential to keeping our system functioning properly. For instance, research shows that spices like Clove, Oregano, thyme, cinnamon, and eunin contain antiviral and antimicrobial properties. The increased intake of turmeric, coriander, and garlic also improve our system, they have strong antioxidants and antiviral properties. Furthermore the zinc, folate iron, Selenium, copper, and vitamins A, C, E, B6, and B12 we get from food or helps in the system. We should maintain a healthy lifestyle of exercise, meditation, and regular sleep. Adequate sleep will help to support immune functioning. Simply going for a daily stroll or sneaking during a Yoga class a couple of times a week will keep our body physically fit and help the system. However good food practices are always recommended by the subsequent them and minimize the danger of contamination maintain proper hygiene, wash vegetables and fruits before eating wash rinse, and disinfect objects and surfaces whenever before and after use, keep cooked foods to stop harmful microbes. Consume unsaturated fats found in fish, nuts, soy, vegetable oil canola, vegetable oil, and sunflower instead of saturated fats found in butter fatty, meat coconut, and Palm oils, cheese, ghee, and cream. We should drink 8 to 10 glasses of water every day. To maintain effective stress reduction techniques keep our system healthy. Avoid alcohol and cigarette smoking also help our system.

**Keywords:** Immune system, antioxidants, anti-viral properties.

### I. INTRODUCTION

The immune system consists of organs, cells, tissues, and proteins. Together, these perform bodily processes that repel pathogens, which are the viruses, bacteria, and foreign bodies that cause infection or disease. When the system comes into contact with a pathogen, it triggers an immune reaction. The system releases antibodies, which attach to antigens on the pathogens and kill them. Incorporating specific foods into the diet may strengthen a person's immune reaction. Read on to get 15 foods that boost the system.

The immune system is the body's defense mechanism. It forms the second line of defense, after physical barriers just like the skin and therefore the mucous membranes. It is located throughout the body and includes the thymus, the spleen, bone marrow, and a huge network of lymph nodes. It is made from many cells, proteins, tissues, and organs. The main function of the system is to stop and fight infection. A good system is important for the correct functioning of the body. A weakened system can cause symptoms like frequent sickness, allergies, fatigue, digestive issues, delayed growth, and slow development. A low immune function is often thanks to emotional stress, sleep deprivation, vitamin deficiencies, lack of workout, overexposure to harmful ultraviolet (UV) sunrays, excessive use of antibiotics, exposure to environmental toxins, poor dietary habits, and inadequate hygiene. Boosting the immune system is possible through lifestyle changes and some simple home remedies as recommended by Ayurveda. The metabolic activity of immune cells is enhanced after a viral infection, such as the one driven by COVID-19. Dietary approaches that support a healthy gut microbiome can benefit the system and ensure an honest nutritional status that might help the host affect pathogens. Although the system is usually working to stop pathogens from invading the body, also as eliminating those pathogens and generating an immunological memory, the metabolic activity of immune cell types is enhanced following a virus infection like COVID-19. That heightened activity is amid a better demand of energy and nutrients, which come from diet, to satisfy the immune cells' requirements. In a new comprehensive review, Prof. Philip Calder from the University of Southampton provides an update on the role of nutrition in supporting the system as a part of the present fight against COVID-19.





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## IMPACT OF COVID-19 ON ENVIRONMENTAL CLIMATE, PEOPLE LIVELIHOOD, AND THEIR HEALTH

**Veena Polasani, Dr. G. Benerjee, C.H. Krishna**

Dept of zoology, Kakathiya University, Warangal, Krishna Challa, Telangana,  
India.

### ABSTRACT

Covid-19 pandemic shows many impacts on the environment are observed or could also be anticipated because the pandemic has limited to our Environmic activities, consumption and movement, pollutant emissions and natural resources use have slowed, and therefore the rate of environmental change has fallen in most areas. But CO<sub>2</sub> concentration within the atmosphere still rises and there's the increased use of plastics, notably in packing. Activities to conserve ecosystem and biodiversity are restricted resulting in a rise in illegal waste dumping hunting and logging, for example. As people lose their livelihoods, increased poverty will likely cause more people to show to unsustainable harvesting of natural resources. The lockdown has led to the postponement of important negotiations on global environmental governance within the expected global climate change and biodiversity 'super year'. The lockdown has several years affected life and livelihood across rural India. Agriculture and allied sectors employ quite half the workforce within the country. A majority of India's farmers (85%) are small and marginal farmers with but two hectares of land quite 9 million active fishers directly depend



Name of the Faculty:Dr. P. Sujeetha  
Name of the Department:English



## Influence of Brechtian Theory on Girish Karnad's Dramas

**P. Sujetha**  
Lecturer of English  
TSWRDC, Warangal East

### Abstract:

*People often say that drama is the most important part of sacred books. The goal of theatre has been to entertain and please the audience since the beginning of time. Plays have been written by both Indian and Western playwrights to teach and entertain. But how do these plays change the people who watch them? Aristotle is the most well-known theorist who says that the purpose of drama is "catharsis," but many others have also argued for dramatic ends. This study looks at how Brechtian theory, which is different from Aristotelian principles, affected Girish Karnad's plays Hayavadana and Yayati. From a postcolonial point of view, Bertolt Brecht's "Epic Theatre," which describes the purpose of theatre as "anti-cathartic," is more important than Aristotle's "mimetic theory." He says that the purpose of drama is not just to make people feel sad or scared, but also to make them think about where the play came from and what it means. Karnad, who is influenced by Brechtian theatre, changes it to fit the Indian culture and adds new things to it. This paper looks at how Girish Karnad updated old myths and how Brechtian ideas affected the plays listed above.*

**Keywords:** Brechtian theory, Hayavadana, Yayati, Aristotle's mimetic theory, Karnad, theatre etc.,

The Indian English theatre of the 20th century is a mix of eastern and western ideas. It is a result of the British Empire and western education. Great dramatists like Nissim Ezekiel, Asif Currimbhoy, Mahesh Dattani, Vijay Tendulkar, and Girish Karnad gave Indian play a new lease on life. All of these playwrights have made important contributions to modern culture by looking at the myths and history of Indian society. Girish Karnad, one of these great playwrights, is a multitalented artist who has done well as an actor, director, poet, screenwriter, and translator, as well as a writer. He started to develop his dramatic range during a time of direct conflict between the country's cultural past and its colonial past, between the appeal of Western ways of thinking and our own traditions, and between the different futures that became



**P. Sujetha**, Telangana Social Welfare Residential Degree College, Women, Warangal East, Telangana, India.

**K. Vagdevi**, Gokaraju Rangaraju Institute of Engineering & Technology, Hyderabad, Telangana, India.

**Abstract:**

Education is the backbone for any nation's development. Education is a vital and powerful weapon to eradicate socio-economical hindrances in the society. India has witnessed a challenging scenario during the recent pandemic times. Many children were deprived of minimal education when Covid 19 struck across the nation. During this time came new education policy 2020 that brought with it some promising ideas as well as challenging ones. After a span of 34 years the Indian Government has proposed NEP 2020 that happens to be the third amendment in the education policy. Generally, any education system must prepare their students future ready and employable so that they can achieve their goals at individual level, then at community level, next at nation level which in turn leads to the development of a strong nation. The New Education Policy 2020 has proposed to replace 10+2 model of curriculum with the new 5+3+3+4 model system that is supposed to be implemented. This paper talks about the promising benefits of the NEP 2020, its challenges and gives a few recommendations.

**Introduction:**

India is known as land of education, values and ethics from time immemorial. Indian education system has seen a sea change from Gurukul system that existed in ancient India to British education system. Many a times changes, modifications were being made and accepted by the education system. The Education System under NEP 2020 is fixed by 20230. The old curriculum 10+2 model is changed to 5+3+3+4 in the NEP 2020. To bring about the new model into force both the central and state governments will invest 6 % of country's GDP towards the development of education sector.

**Four Stages in New Education Policy 2020**

The NEP 2020 is divided into four phases 5+3+3+4, this model is made mandatory to follow by all the government and non-government educational institutions across the country.

What are these four stages?

1. Foundation Stage
2. Preparatory Stage
3. Middle Stage
4. Secondary Stage

**Foundation Stage**

This stage is fixed for 5 years. The children between 3 to 5 years fall under this stage, in which 3 years of pre-school education is imparted in Anganwadi. In class 1, 2 language skills are enhanced and these skills are evaluated and focused in the development.

**Preparatory Stage**

This stage is fixed for 3 years. Age group of children between 8 to 11 years come under this stage. During this stage students are given special focus on strengthening scientific and mathematical skills. Children are exposed to arts, science, mathematics, etc through various experiments. At the same time knowledge on regional language is given importance and development in this area is focused.

**Middle Stage**

This stage is fixed for 3 years. Children from 6<sup>th</sup> to 8<sup>th</sup> class fall under this stage. They are given knowledge especially subject-based is taught along with computer coding classes. During this stage, children are given choice of vocational internships and vocational testing that paves way to enhance inculcate employability skills.



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### Themes and Techniques in James Joyce's *Clay*

Ms. P. Sujeetha

Lecturer in English

TSWRDC

Warangal, Telangana, India

[p.s.jeeth@gmail.com](mailto:p.s.jeeth@gmail.com)

#### Abstract

James Joyce, a prolific Irish writer of his age. 'Clay' from *Dubliners* is known for its varied themes and techniques. It renders captivating opportunities for the readers to present his/her own perception of symbolism to 'Clay'. Joyce has displayed a double level of symbolism structure which he explicitly managed to handle paradoxical symbolic element simultaneously. The title 'Clay' itself has a symbolic meaning – in the human world it has less worth but this unworthy element has the capacity to mould to any given shape. Maria, the protagonist is a symbolic representation of Clay at one level and Mother Ireland at another level. Themes of poverty, triggered social relationships are shown through the technique of symbolism.

Keywords: Symbolism, Maria, Themes, Techniques, Clay

Introduction

Symbolism as a Technique in clay



Name of the Faculty:Flora Maria Bandari

Name of the Department:English



**A Critical Examination of the Scientific Significance of Roopa Pai's *The Gita for Children* in the Context of Contemporary Living  
Seeking Answers to Post-Pandemic State of Risks and Uncertainties**

**Flora Maria Bandari**

Department of English, GITAM, Hyderabad

<p><b>Article History</b></p> <p>Received: 12 July 2023 Revised: 10 September 2023 Accepted: 15 Oct 2023</p> <p><b>CC License</b> CC-BY-NC-SA 4.0</p>	<p><b>Abstract</b></p> <p>Roopa Pai's <i>The Gita for Children</i> retells the Bhagavad Gita, an ancient text from Hindu Philosophy. One key aspect to consider is the current post-pandemic state of uncertainties. The global health crisis has disrupted our lives, instilling fear and raising existential questions. Through a critical lens, this paper explores how Pai's <i>The Gita for Children</i> addresses these concerns and provides valuable insights that help find meaning in an uncertain world. This paper analyses how the teachings and principles of the Bhagavad Gita presented in the book resonate with scientific perspectives and contribute to readers' understanding of contemporary life. This paper explores Pai's writing on four specific subjects. These categories are the central concepts of the Bhagavad Gita - 1. The spiritual Notion of 'Atman' (the Soul): Law of Conservation of Matter, 2. Process of 'Gnana' (Calculative Knowledge): the Theory of Evolution, 3. Analysing 'Krodha' (Anger): The Theory of Anger and Anger Management, and 4. Importance of 'Karma' (Path of Action): Newton's Third Law of Motion. By scrutinizing the scientific underpinnings of these four subjects, this study contributes to a better understanding of the potential value of the Bhagavad Gita as a source of inspiration for solving real-world problems. The interconnection of the selected theories with the psychological and metaphysical essence of human life is revealed through the critical evaluation of Pai's selected narrative.</p> <p><b>Keywords:</b> Bhagavad Gita, Lord Krishna, Arjuna, Conversation, Conservation of Matter, Atman, Evolution, Gnana, Anger, Krodha, Newton's Law, Karma</p>
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