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Holistic Thought



**MULTIDISCIPLINARY
ANNUAL RESEARCH JOURNAL (PEER REVIEWED) OF
SREE NARAYANA COLLEGE, KOLLAM**



Sree Narayana College, Kollam
Affiliated to University of Kerala
NAAC 'A' Grade, ARIIA All India Rank II
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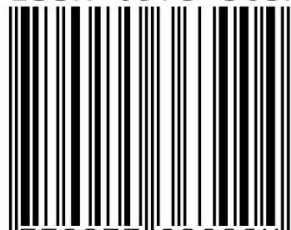
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Aim and Scope

Holistic Thought, a multi-disciplinary annual journal, publishes problem oriented, empirically-grounded analytical research papers, theoretical and philosophical essays, policy discussions in the field of both natural and social sciences, in as technical language as possible. Original articles will be published either as papers or reviews after review process. The journal also publishes essay in the field humanities and the languages. Holistic Thought fosters cross-disciplinary approach in research, seeks eminent scholars, serious researchers as well as innovative young writers as its contributors.

Holistic Thought

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Dear Readers,

Holistic Thought is a non-profitable peer reviewed multidisciplinary research journal published yearly by Sree Narayana College, Kollam and is devoted to all aspects of findings and research associated with multidisciplinary concept which covers areas of science, language, literature, art, history and culture. It gives us immense pleasure to publish the Volume 19 Issue 1 of Multidisciplinary Journal of Holistic Thought during this tough time of pandemic. In this current publication, papers are published within the areas of Science, Social Science, Literature, Computer Science and Arts. In an era of increasing academic engagement that includes several disciplines under one roof, it is imperative to understand the nuances of multidisciplinary research to engage with academia. The current COVID 19 epidemic, natural disasters (Floods), and human-induced crisis scenarios throughout time and space have presented both obstacles and possibilities to recover, re-strategize, and reinvent how each global citizen reacts to and lives through these events.

The current position of the world is very critical in this scenario as no one knows exactly about the transmission of the virus and how it might be stopped. To solve this humanity's biggest challenge, research must embrace multidisciplinary collaboration and we can hope for an effective scientific vaccine through this scientific approach. With this sudden shift away from the classroom in many parts of the globe, some are wondering whether the adoption of online learning will continue to persist post-pandemic, and how such a shift would impact the worldwide education market. The current journal issue exposes our readers to new and diverse disciplines, concepts, thoughts or perspectives. Even in this tough situation of lockdown, the college is able to publish this volume of Holistic Thought journal. Once again, congrats to all the contributors of the journal who made this a reality. We strongly believe that the world will survive this pandemic soon with greater punch.

Dr. R. Sunilkumar
(Chief Editor)

Dr. P. Nikhil Chandra
(Associate Editor)

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Fire Force Management with Fire Alarm Using Machine Learning Techniques

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Abstract:

The role of the Fire Force Management System with Fire Alarm is to take action depending on the anticipated fire scenario, building and use type, number and type of occupants, and criticality of Contents and mission, these systems can provide several main functions. First, they provide a means to identify a developing fire through either manual or automatic methods and second, they provide alerts and notifications. Another Common function is the transmission of an alarm notification Signal to the fire department of other emergency response organization.

The first step to halt a fire is to properly recognize the incident, uplift the inhabitant alarm, after that notify accidents response professionals. This is often the function of the fire detection and alarm Systems. Here Artificial Intelligence and Machine learning are implemented for the scientist user. This user deals with the detection of fire based on the images generated with surveillance camera set across the state. The whole functionality is split to five users such as Admin, Fire Officer, Data Scientist, Public and Surveillance Camera.

Keywords:- DFD,CFD, SURVEILLANCE CAMERA,MENU TREE

Introduction

A key aspect of fire force management system with fire alarms using Machine Learning techniques is to identify and develop fire emergencies in a timely manner, and to alert the fire emergency organizations. This is the role of the fire force management system with the fire alarm system. First, they Provide a means to identify a developing fire through either

manual or automatic methods and second, they Provide alerts and notifications. Another Common function is the transmission of an alarm notification Signal to the fire department of other emergency response organization. They may also shut down electrical, air handling equipment or special process *operations*, and they may be used to initiate automatic Suppression systems. This *section* will describe the Basic aspects of fire detection and alarm system

The first step to halt a fire is to properly recognize the incident, uplift the inhabitant alarm, after that notify accidents response professionals. This is often the function of the fire detection and alarm Systems. The public can register and add issues related to this department. Admin will be taking care of the overall administrations. Here Artificial Intelligence and Machine learning are implemented for the scientist user. This user deals with the detection of fire based on the images generated with surveillance camera set across the state. This proposed System ensures maximum security through various advanced methods in Artificial Intelligence. Admin, & Fire officer, Public, Data Scientist and Surveillance camera are the modules included in this work.

Existing System:-

The existing system is a manual entry for each user. so here each user needs to carried out in the hand written registers. It will be tedious job to maintain the record for the users. The human effort is more here. The retrievals of the information are not as easy as the records are maintained in the hand written registers. This application requires correct feed on input into the respective field suppose the wrong inputs are entered, the application resist to work. So, the user finds it if any error occurred.

Proposed System:-

To overcome limitation of this existing system, the proposed system is evolved. This project aims to reduce the paper work and saving time to generate accurate results for each user. The system provides good user interface. The best results can be generated by using this proposed system. As the development is done in PHP and Python there are no hidden costs in the process. In the backend the systems use MySQL database server.

Context Level DFD (Level 0)

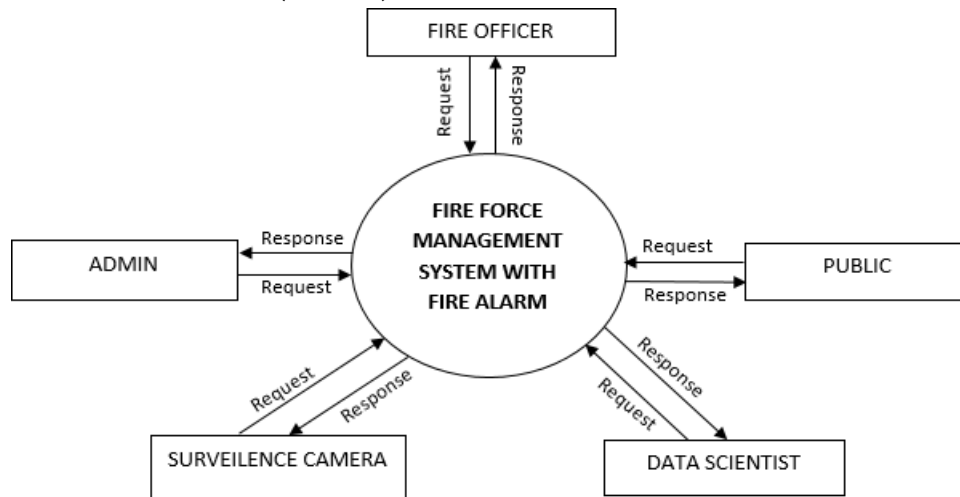


Figure.1 Context Flow Diagram

Level 1 DFD – ADMIN

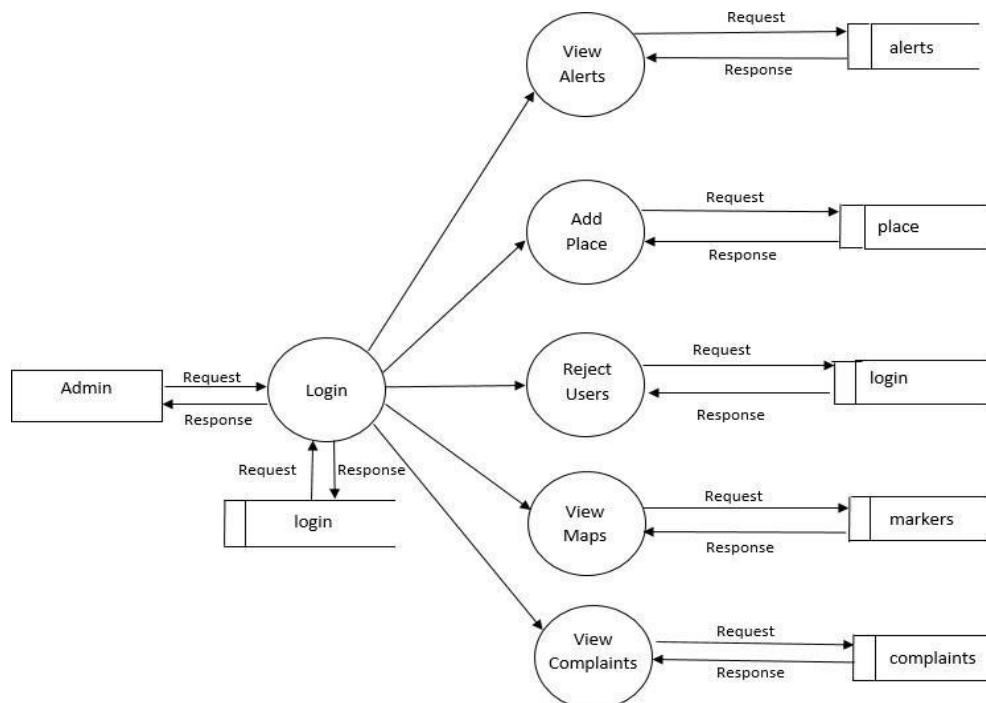


Figure .2: Data Flow Diagram for Admin

Level 1 DFD – DATA SCIENTIST

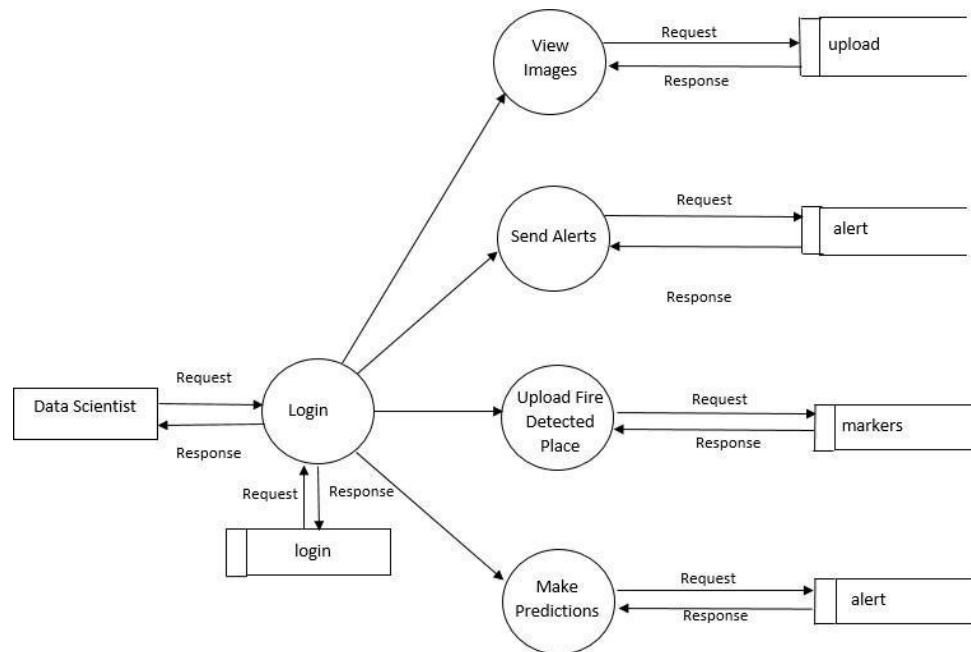


Figure 3: Data Flow Diagram for Data Scientist

Level 1 DFD–FIRE OFFICER

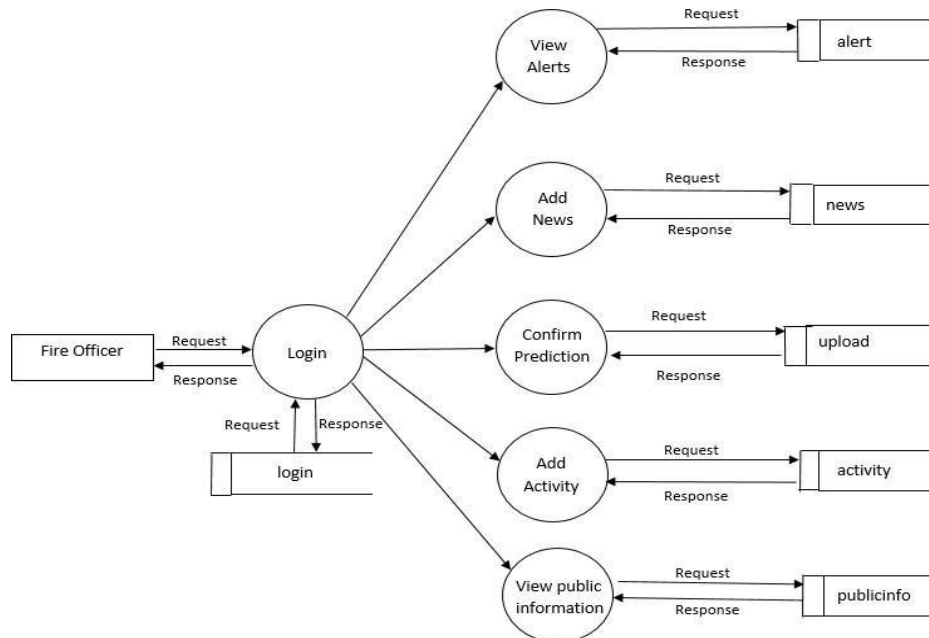


Figure 4: Data Flow Diagram for Fire Officer

Level 1 DFD – PUBLIC

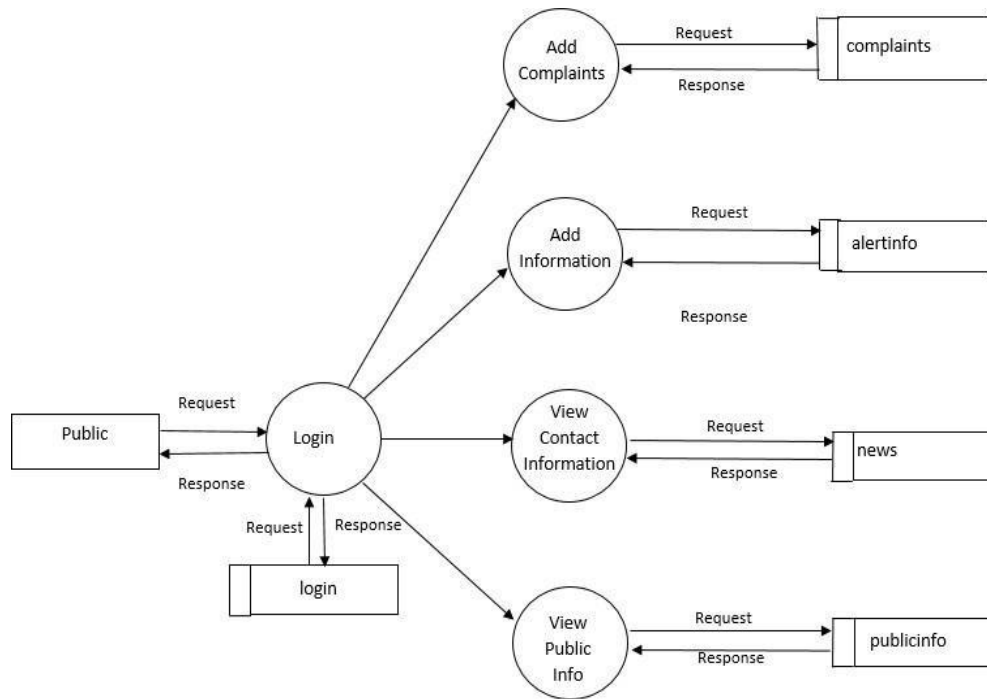


Figure 5: Data Flow Diagram for Public

Level 1 DFD – SURVEILLANCE CAMERA

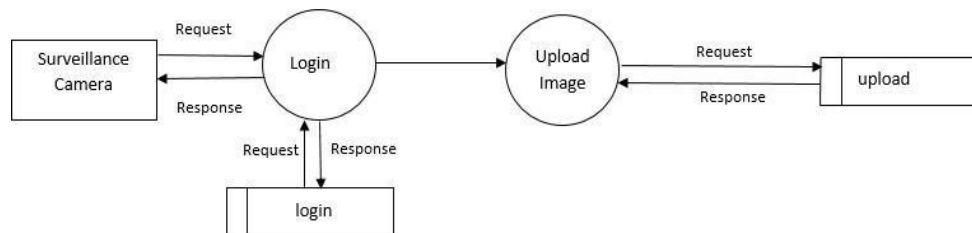


Figure 6: Data Flow Diagram for surveillance camera

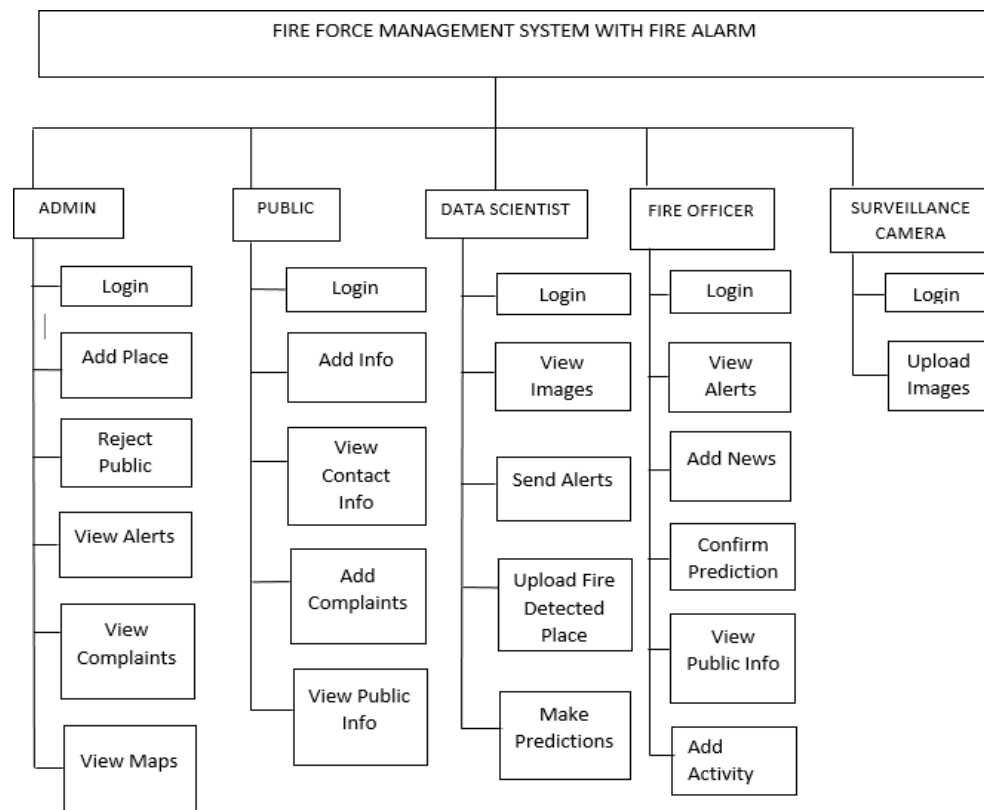


Figure 7: Structure Chart

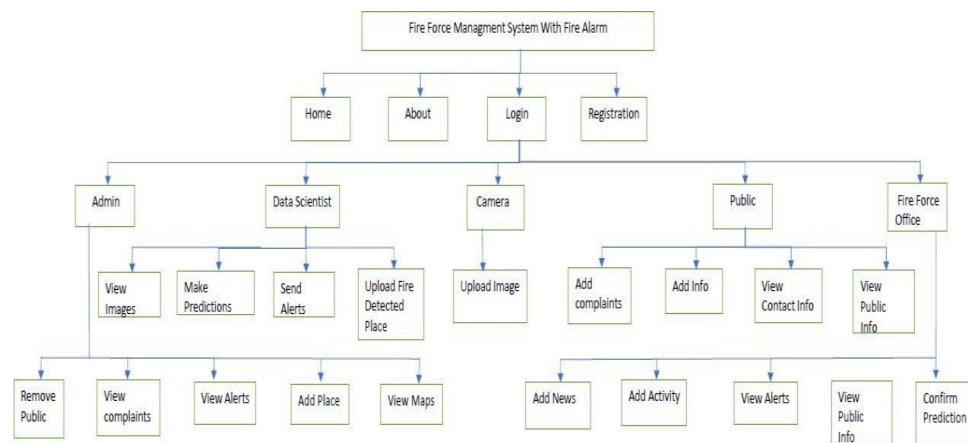


Figure 8: Menu Tree

Module Description

Modules

The Fire force management system with fire alarm is divided into 5 modules. The 5 modules included in this system are

1. Admin Module
2. Fire Officer Module
3. Data Scientist Module
4. Public Module
5. Surveillance camera Module

Each module specifies the functional requirement of the system:

1. Admin Module

- Add Place
- Reject Public
- View Alerts
- View Complaints
- View Maps

2. Fire Officer Module

- View Alerts
- Add News
- Confirm Prediction
- View Public Information
- Add Activity

3. Data Scientist Module

- Send Alerts
- View Images
- Send & view student complaints
- Upload Fire Detected Place
- Make Predictions

4. Public Module

- Add Information
- View Contact Information
- Add Complaints
- View Public Information

5. Surveillance Camera Module

- Upload Images

Conclusion

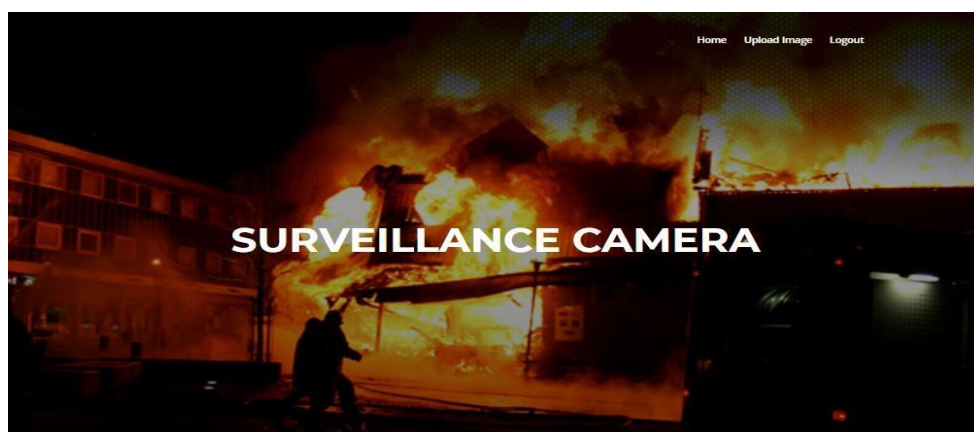
This work has been developed with much care and free of errors and at the same time it is efficient and less time consuming. The purpose of this work was to develop a web application for making fire force management easier and detecting fire in a faster and more efficient way.

This work helped me in gaining valuable information and practical knowledge on several topics like designing web pages using html and CSS, usage of responsive templates and management of database using My SQL. The entire system is secured. Also, the work helped me understanding about the development phases of a software and the software development life cycle.

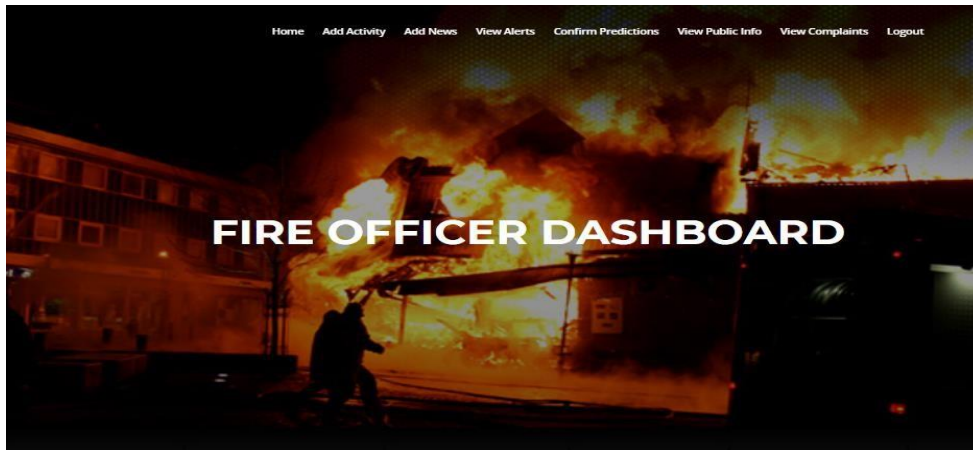
There is a scope for further development in this work to a great extent. A number of features can be added to this system like real time monitoring of fire engines in an area.

Future Enhancement

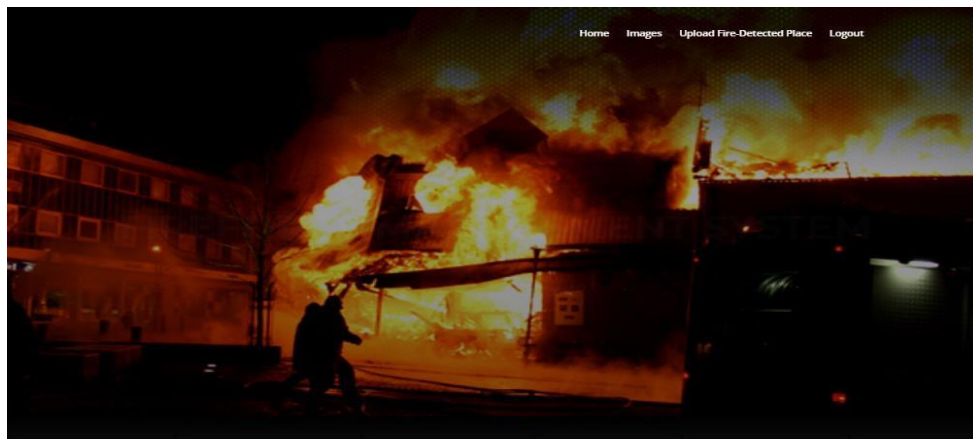
This website involves almost all the features needed for a fire force management system with fire alarm. The system is designed in such a way that future expansion or modification can be easily implemented. The future implementation will be providing a fire engine tracker which will be available all over the state.



Camera Page



Officer page

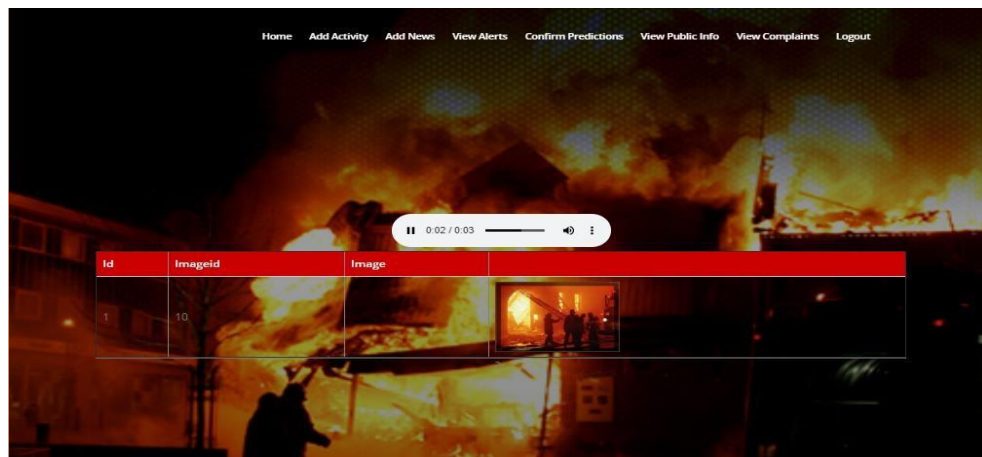


Scientist Page

The image shows a web application interface for user registration. The background is a fire scene. The title "User Registration" is centered at the top. Below it is a form with the following fields: Name (Reivan), Address (Newland, Punalur, Trivandrum), Phno (9090908761), Email (gopika.aydhiyil@gmail.co), Aadhar (6789045324609), Password (2000g9u0), and a Register button.

User Registration	
Name	Reivan
Address	Newland, Punalur, Trivandrum
Phno	9090908761
Email	gopika.aydhiyil@gmail.co
Aadhar	6789045324609
Password	2000g9u0
Register	

User Registration

**Fire Alert**

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Gender Disparity among Marginalised Community: A Study of Marine Fisherfolk in Kerala

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Abstract

Human rights are rights inherent to all human beings, regarding of race, sex, nationality, ethnicity, language, religion or any other status. Human rights include the right to life and liberty, freedom from slavery and torture, freedom of opinion and expression, the right to work and education, and many more. Everyone is entitled to these rights, without discrimination. These rights are interrelated, inter dependent and indivisible. It means that the improvement of one right facilitate the advancement of other rights. Also, human rights are inalienable; they should not be taken away, except specific situations and according to the procedure established by law. The present study focused on the Socio economic status of fisher women and the problems faced by them in Kerala.

Key words: Fisher folk, Marginalisation

Introduction

The human rights are those minimal rights which are available to every human being. Women and girls rights are human rights. They cover every aspect of life-health, education, political participation, economic well-being and freedom from violence, among many others. Women and girls are entitled to the full and equal enjoyment of all their human rights and to be free from all forms of discrimination- this is fundamental to achieve human rights, peace and security, and sustainable development. The protection and promotion of human rights is the first responsibility of governments. Achieving gender equality and empowering all women and

girls is one of the sustainable goals of the United Nations (UN) Sustainable Development Goal 5 (SDG 5). The UN recognizes ending discrimination against women as not only a basic human right but as a necessary condition for a sustainable future. It is very evident that significant progress toward gender equality and women's empowerment has happened in the past four decades. However, as a global community, we are still far away from being a gender-equal world. India is ranked 140th among 156 countries in the World Economic Forum's Global Gender Gap Report 2021. Further, the Gender Inequality Index (GII) also offers a picture of gender disparities in India in sectors such as health, empowerment and the labour market. As per the 2011 census, the ratio of women to men for Kerala is 1,084, which is high compared to the national figure of 940. Women constitute 52 per cent of the total population in Kerala. Children aged 0-14 years represent 23.44 per cent of the total population in Kerala, 48.91 per cent of whom are girls. In contrast to the national average of 11 per cent, 22 per cent of all households in Kerala are female-headed. In recent years there was an increase in women's employment in Departments such as Police and Excise. In 2017, 605 police constables were recruited (including a police battalion of women, commanded by a woman commandant) and another 154 were recruited in 2018. In Excise Department, 133 women were inducted for patrolling in 2018. After the pandemic substantial recruitment of health workers has been occurred, large number of the new health workforce being women.

Objectives

To study the status of Fisher women and the problems faced by them in Kerala

To identifies socio-economic background of fisher women in the study area

Methodology

The study has made use of empirical and analytical approaches. Both quantitative and qualitative techniques were used in the collection and analysis of data. Information had been gathered from secondary sources and primary sources and by interviewing the target groups. The secondary

data comprises books, journals, articles, government publications and websites. Primary data collected from 290 fisherwomen from Thiruvananthapuram district. Out of this 190 samples were selected from Anchuthengu, and 100 samples from Vettukad in Thiruvananthapuram District. Simple random sampling techniques were used for collecting data.

Development economists discovered that despite a common national strategy for the development of the whole economy, India was witnessing differential development at the regional levels. In this matter the case of Kerala has been unique. This was a state which achieved a high physical quality of life as reflected in birth rate, death rate, infant mortality rate expectation of life at birth, literacy rate, sex ratio and infrastructural development (Nair, 1993). Kerala baffled development economists with its high quality of life coexisting with low per capita income, high level of unemployment, a virtually stagnant production base and a level of nutrition/calories intake much lower than the standard norms prescribed by the Indian Council of Medical Research.

Problems faced by Women in Kerala

India is a country where women are given the status of a goddess. However, the problems they have to face just show the opposite of this concept. On hand they worship them as goddesses and on the other; they abuse them endlessly and consider them inferior. Indian women always had some problem or the other to face in society. People evolved and so did the problems; they did not go away but changed from one to another. In the early days there were severe issues like the Sati, no widow remarriage, devadasi system and more. While most of them are not prevalent now, there are new issues that women face. They may be not the same but they are still as severe as the early ones. They hinder the growth of a country and make the women feel inferior. Violence against women is a very grave issue faced by women in Kerala. It is happening almost every day in various forms. People turn a blind eye to it instead of doing something. Domestic violence happens more than that. There is also dowry related harassment, marital rape, genital mutilation and more. There is the issues of gender discrimination. Women are not considered

equal to men. They face discrimination in almost every place whether at the work place or at home.

Gender Disparity

Many studies reveal that both professional and non-professional women experience heavy stress due to gender bias. Although women have proved the best of their abilities in various fields of work at par with men, they still continue to have a grip over their household responsibilities. In spite of their hard work, women have been given second importance in their field of work. Patriarchy and gender inequality in society is the main cause of women's deprivation by way of health, food and nutrition, more susceptible to mortality and contributing to unbalanced male female ratio as well as in the sphere of education, employment, wages and that of political representation. Women are treated by men only as consumers, sex objects or reproductive machines as a result of which their status in the family and society has been demoted. Subsequently this has led to increasing violence and denial of human rights, liberty, equality, justice. The patriarchal family system that prevails in India gives more rights and authority to the male enabling them to enjoy more power over the female in the family. Women are considered inferior, secondary individuals to men. So they are suppressed, oppressed, harassed, subjugated and deprived of even their basic rights till date. Atrocities and crimes are committed against them by their own family members. They used to face innumerable problems in their post married life for their family in different dimensions such as a bride due to no or less dowry, as a wife not bearing a male child, as a widow responsible for her husband's death. Above all if they are working women, they are expected to accomplish all the activities from dawn to dusk to satisfy needs of all family members. So though women play a key role in the socio economic development of a country yet they are discriminated against almost in every walk of life right from the very earliest stage.

Dual Responsibility

Women's attitude towards their stereotyped (traditional) role is rapidly changing and their participation in different job sectors is increasing alarmingly due to low economic condition of family, advancement in the field of women education, granting of more liberty, rights and privileges to women. Managing both the family and job responsibility on the part of the women today are quite tough and challenging. It is very difficult for them to carry dual responsibilities at home and the workplace. It creates psycho-socio problems both in the family and professional field; despite the fact that it provides economic security. Thereby it had done more harm than good for which women are experiencing stress and frustration in life.

Illiteracy and Traditional Belief

Illiteracy and traditional beliefs and practices of family have prevented a great majority of women from access to health care and knowledge about their rights and privileges resulting high rate of maternal mortality and morbidity. In our society male members of the family are supposed to eat fresh and nutritious food in comparison to women because either they are the earning member or head of the family or they are supposed to be more important than female members. The high mortality rates among women as revealed by maternal death due to anemia, toxemia, hemorrhage and abortions indicate that women health in general and reproductive health in particular are neglected due to her illiteracy and ignorance about her health and balanced diet. Healthy women produces healthy child but from analysis of data of various studies it is observed that nutrient intake is significantly less among illiterate pregnant women. Illiteracy limits women's ability to earn money and participation in decision making in the male dominated families. Statistics shows that higher the female literacy level, lower is the fertility rate and birth rate. Maternal mortality are normally higher in states with a low literacy. Illiteracy and low educational status result in lack of information, knowledge. There is a saying that if you educate a boy you educate an individual but if you educate a girl you educate a family.

Social Stigma and Poverty Condition

Crime and violence against women are on the rise. This is only due to social stigma that women are weaker section of society. Poverty condition compels the poor women to sell their minor girl like commodity and give away their grown-up daughter into slavery to another family to perform household activities. They are subject to victim of STD. (Sexual Transmitted Disease) AIDS due to unprotected sex as they are able to protest. Due to financial constraints and acute poverty, young girls are often lured away by middle men and brokers with a false promise of being offered alluring jobs. In the process they are after cheated with sexual harassment which ultimately ends up in dubious condition. Lack of family and society support and consciousness of moral values create problems with the in-laws, dowry and torture for women. Lack of self confidence is the main cause of women problem. Women themselves are willing to aberrate the female sex. They are interested to participate in obscene picture and advertisement and wearing indecent and provocative clothes. They are quarrelling with parents for the dowry. They are creating conflict with in-laws instead of co-operating with them. The feeling of helplessness and frustration in women regarding their own problems must be taken care of without delay. Both the family and society should work together to eliminate such problems and give a woman the much needed self confidence and self respect. However during these few decades, industrialization, urbanization, westernization and spread of women education have brought about drastic changes in women's, lives but still they are facing multifarious and multidimensional problems. Despite so much hue and cry in the whole world for equal treatment of-both men and women in every aspect of life we are still lagging behind in achieving the goal.

Marginalized sections are a group which has remained for long totally excluded from the mainstream population and isolated and deprived of opportunities and facilities of life, right from ancient times. Fisher folk, being an occupational category belong to the marginalized group, steeped in illiteracy and living far removed from the mainstream population. Fisheries sector is an informal sector, fisheries plays a crucial role in the economic development fishing occupies an important role in Indian economy as it is a source of food protein, its major revenue of

employment, and recent years, it's become a major export industry. The role that women play in developing societies in preserving the social and cultural ethos intact can hardly be overemphasized. The responsibility of providing stable sustenance rests primarily with womenfolk. While men usually work outside the home as bread winners, women are considered the homemakers even if circumstances and opportunities warrant that they work outside the home for a living (Kurien, 2000). We intend to highlight the differing roles played by women in the fishing households and women in the fish consuming households in Kerala. Both play crucial roles in livelihood and food security.

Women in Fishing Communities

Women play an indispensable crucial role in maintaining the social and cultural foundations of the fishing communities in Kerala. In a multi-caste, multi-religious society these roles take varying socio-economic and cultural expressions. One common and strong taboo relates to women's involvement in actual fishing. This is considered to be "polluting" and consequently women in the fishing households never go to sea. The closest they may get to it will be for gathering shells and cockles on sea fronts with rocky fringes (Kurien, 2000). The women of the Muslim Mappila fishing communities of the northern region are largely confined to their roles as mothers and providers of the basic needs of the family within the four walls of the home. Very gradually, with increasing education and greater socialization they do involve, to a limited extent, in some post-harvest activities in the villages (Mathur, 1977). The Hindu Araya fisher folk and the Christian Mukkuva fisher folk permit their women participate in the economic activities relating to fish processing, buying and selling in distant markets (Ram, 1991).

The fisherwomen play an important role in the terms of their involvement in fish related activities such as fish vending, fish drying, prawn peeling, sorting, grading, packing and net making. About 46.35 per cent of women are involved in marine fishing activities and 49 per cent of them are involved in inland fishing activities.

Socio-Economic Profile

Kerala which has a high number of fishermen population, is a state in which all the three major religions have significant presence. Fishing is considered in Kerala an occupation of backward communities. The family characteristics of the samples in the study areas may now be examined. Family background is an important variable determining the income earning capacity and the consumption pattern of households. They have also an important place in determining the standard of living, educational level and health status of the population. Family size has an important determinant of the health status of an individual. The study reveals that there exists joint family system among the Coastal population. How many persons can be accommodated under a roof is a legitimate question to address in the case of marine fishermen community, the housing conditions of whom are reported as alarmingly congested. Marine Census of CMFRI in 2005 and HRDC report 2009 reveals that the household size of coastal population is higher than the total population.

The higher household size of fisher folk implies two things. One, the possibility of higher birthrate or fertility rate than the state's total population: and two, due to the non availability of land for new houses within stipulated distance from the shore and also because of financial reasons to build new houses, the congestion in already existing houses go on increase with family formation.

Educational Status

Education plays an important role in every phase of life as it enhances informed choices regarding issues in life especially health seeking. Education to women has a major impact on health and nutrition. This is a common say, "if you educate a man, you educate an individual, if you educate a woman, you educate a family". Studies reveal that literacy has a direct impact on nutritional status of women. The main dietary intake of food and nutrients increased with increasing educational level. Ignorance is the most important factor underlying malnutrition. The level of education affects the status of women. Literacy of women plays an important role in reducing fertility and child mortality. Literate women tend to marry at higher age and thus the age of marriage increases. Thus

education of women has significant impact on demographic process. Kerala's effort in making basic education facilities accessible to large majority of the people is well known. Primary and even upper primary schools exist in close proximity to all the fishing villages. Literacy movements in Kerala shows an increase in literacy rate of the general population

Occupational Profile

The economic condition of a household mainly depends on the occupation, level of employment and income of the working members of the household etc Poor quality of life is a reflection of low and unsteady income and nature of work. There is a reciprocal relationship between health and wealth. Financial difficulties foster poor health. Expenses involved in meeting treatment make the lower income group to forego treatment. The income stated by the fisher women need not be accurate. There is a tendency among women, especially the poor, to high light their poverty. However by cross checking with the amount they spend on food, medicine, etc, the approximate income was derived at. It was revealed that 79.1per cent of them had an average monthly income of more than Rs.12000.

Conclusion

Fish vending is a traditional occupation that has been a means of livelihood for thousands in India, with the majority of fish vendors being women. Fish vendors engage in their trade in various ways: they procure their fish directly from landing centers, where they participate in daily auctions of the catch; they buy from traders and merchants; or they buy from the wholesale markets of resale at retail/local markets. Vendors also carry out value addition by sorting, grading, cleaning and icing the fish. Women are thus the primary players in processing, marketing and selling the catch. After the fish has landed, it is the women who take charge of the catch and sell the fish for money and food, contributing to household incomes and food security, and to the local economy. Their labour is, however, often not recognized. Fish vendors operate as an important link between producers and the final consumers, making fish available to

consumers, making fish available to consumers in urban and remote rural areas, and enhancing food security in tangible, but unrecognized ways. Women have always played an important role in the fishing industry by way of taking care of many of the shore based activities after the fish is landed. These include handling of fish; salting, drying, marketing etc. increasing entrepreneurial activities in post harvest segment of fisheries for women may provide more and more employment opportunities. Women fish vendors also play an important role in the development of the economy. Fisherwomen should be provided adequate knowledge and training on awareness of natural disaster and its management. If India's fisheries sector to be satisfactory sustained then fisherwomen empowerment, both socially and economically is essential. Hence skills and use of appropriate technology will enable them to empower socially and economically.

Synthesis, characterization and antibacterial studies of curcumin metal complexes

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Abstract

Ca (II) and Ce(III) complexes of curcumin have been prepared from the metal chloride salts and commercially available curcumin in presence of pyridine catalyst. The prepared complexes were characterized using Infrared and UV spectroscopy. Anti-bacterial study of the synthesized complexes indicated that all the complexes possess antibacterial activity and particularly the Ce (III) complexes possess better anti-bacterial activity than the pure ligand against the gram negative bacteria *Salmonella typhimurium*.

Introduction

Curcumin, a major constituent of turmeric exhibits great promise as a therapeutic agent, and is currently in human clinical trials for a variety of conditions, including multiple myeloma, pancreatic cancer, myelodysplastic syndromes, colon cancer, psoriasis and Alzheimer's disease. The unique charge and bonding characteristics facilitate penetration into the blood brain barrier superior to other known non-steroidal anti-inflammatory drug (NSAID). Curcumin is a free radical scavenger and hydrogen donor, and exhibits both pro- and antioxidant activity [1].

Under physiological conditions (pH > 7.2), ~90% of curcumin degrades within 30 min into several products, namely, trans-6-(4'-hydroxy-3'-methoxyphenyl)-2,4-dioxo-5-hexanal, ferulic acid, feruloylmethane, and

vanillin. It is also susceptible to degradation on exposure to light. Curcumin also suffers from its poor bioavailability besides being susceptible to degradation in light. A more facile and convenient way to enhance the solution stability without compromising its therapeutic efficacy is binding to a metal ion. Binding of Curcumin to a metal ion via its β -diketone moiety significantly reduces the tendency of a Curcumin to undergo hydrolyses in aqueous medium, which could result in an improved therapeutic efficacy. By the suitable choice of the metal and the ancillary ligands in a ternary structure, the complex can be directed to targeting cancer cells without effecting the normal cells [2].

Antimicrobial studies of few metal complexes of Curcumin were already reported. A copper Curcumin was found to be useful for the development of a vaginal gel against viral infection. Also notable is an early report the inhibition of an HIV-1 and HIV-2 proteases and several Curcumin boron complexes. Antiarthritic/antirheumatic activity has been reported for vanadyl and gold complexes of curcumin. Reports were available on synthesis of Fe (II), Zn(II), Ni(II), Cu(II), Co(II) and Mn(II) complexes of curcumin and their extended applications [3].

Literature review suggests that there is great scope in curcumin metal complexes study in biomedical field. Based on the above mentioned literature review, we have selected Ca(II) and Ce (III) as the metal ions for complexation with the commercially available curcumin. The prepared complexes were characterised using FT-IR and UV spectral analysis. Also antibacterial studies of the prepared complexes were done against the gram negative bacterium *Salmonella Typhimurium* as the pathogen. An attempt was also made to correlate the various characterisation results with the antibacterial activity.

Experimental procedure

Materials: Commercial curcumin (96%) was purchased from Sreekumar Laboratory Supplies, Kollam. DPPH was purchased from Sigma-Aldrich. The metal salts, used for the synthesis of curcumin metal complexes are Calcium chloride (CaCl_2), silver nitrate (AgNO_3) and cerium chlorideheptahydrate($\text{CeCl}_3 \cdot 7\text{H}_2\text{O}$) were purchased from S.D. Fine Chem. Ltd., Pyridine (Analytical Grade, Merck) is used in catalytic amount during

the synthesis. Solvents were purchased from S.D. Fine Chem. Ltd.

Synthesis of curcumin metal complexes

Preparation of Curcumin-Ca Complex: The complex was synthesized by mixing curcumin with calcium chloride at a molar ratio of 1:1 in ethanolic solution. The ethanol solution of curcumin(0.54 m mol) and the metal salt of CaCl_2 (0.54 m mol) were prepared separately and to the curcumin solution catalytic amount of pyridine was added followed by metal salt solution with constant stirring on a magnetic stirrer. Stirring was continued for 4 hours. The metal complex precipitated was filtered and washed several times with cold ethanol to remove the residual reactant and dried. The complex was also synthesized by mixing curcumin with calcium chloride at a molar ratio 3:1 in ethanolic solution. Following similar procedure Curcumin-Ce complex was also prepared.

Antibacterial assay of curcumin and metal complexes The disc diffusion technique or Kirby- Bauer method was followed in the present investigation which is the most preferred to follow antibacterial activity against rapidly growing organism. These studies were performed in CEPC, Kollam. Culture of Gram negative bacteria *Salmonella Typhimurium* was obtained from CEPC, Kollam. Detailed procedure is provided below.

1. Test organisms: Test organisms were collected from Institute of Microbial Technology, Microbial Type Culture Collection Centre, (IMTECH), Chandigarh. The bacterial stains were maintained on their respective medium in the slants at $2-8^\circ\text{C}$.
2. Preparation of Muller Hinton Agar (MHA): Muller Hinton Agar (MHI) medium was used for bacterial culture. MHA was prepared and sterilized at 121°C for 15 minutes. After sterilization, required volume of the medium (20ml) was poured in a sterile petri dishes and allowed to solidified.
3. Inoculam preparation : Use pure culture as inoculam. Selected 3-4 similar colonies and transferred them in to about 5ml of suitable broth such as Tryptone Soya Broth (TSB), incubate at 37°C for 2-8 hours till light to moderate turbidity develops.

4. Method of Inoculation: Filter paper disc diffusion technique was applied for determining antibacterial activity. Dipped a sterile non-toxic swab on a wooden applicator into the standardized inoculum and rotated the soaked swab firmly against the upper side wall of the tube to express the excess fluid. Streaked the entire agar surface of the plate with the swab three times, turning the plates at 60° angle between each streaking. Allowed the inoculum to dry for 5-15 minutes with lid in place.
5. Drug (5 mg)(curcumin and its complexes) was dissolved in 10 mL DMSO (1%) to make concentrations of 0.5 mg/mL. Apply the disc (Hi media sterile 6mm disc) impregnated with the sample, approximately 30µl, using aseptic technique. Then placed the disc with centres at least 24mm apart.
6. Incubated immediately at 37°C and examined after 16-18 hours or later if necessary. Measure the zone showing complete inhibition and record the diameters of the zones to the nearest millimetre.

Results and Discussions

Curcumin metal complexes of Ce and Ca (1:1 and 3:1) prepared were characterized using FT-IR spectroscopy. Antibacterial studies were also performed with the prepared complexes. Observed colour and yield of the complexes calculated based on the amount of metal precursor taken is presented in table 1.

Table 1: Observed colour and Yield of the prepared complexes

Ligand: Metal Ratio	Colour	Yield (%)
Cur-Ce1:1	Red	80
Cur-Ce3:1	Red	78
Cur-Ca1:1	Yellow	85
Cur-Ca 3:1	Yellow	81

Optical photographs of the complexes were shown in Fig. 2. Both the complexes were found to be completely soluble in organic solvents like DMSO, DMF etc.

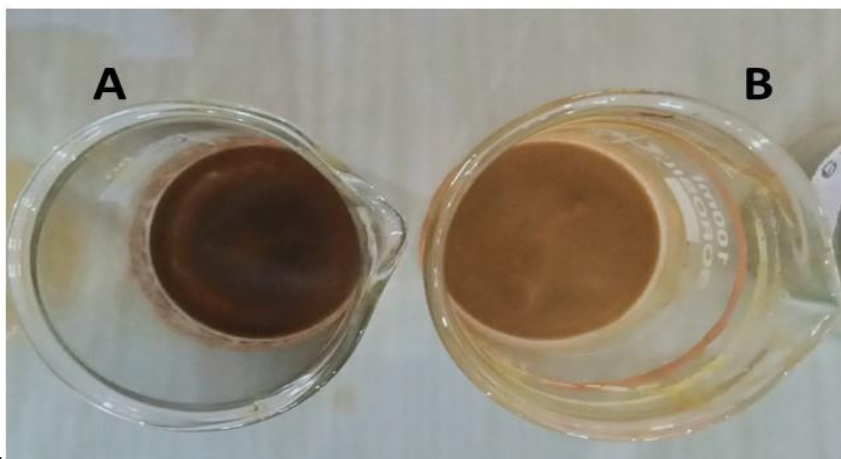


Fig.2 Optical photographs of A) Cur-Ce and B) Cur-Ca

FT-IR Spectra

The infrared (IR) spectra of curcumin show a strong band at 1619 cm^{-1} and a broad band in the range $2800 - 3500\text{ cm}^{-1}$ due to the stretching of the chelated carbonyl and the intramolecularly hydrogen-bonded enol functions, respectively. The absence of any band assignable to a normal α , β -unsaturated carbonyl group in the region $1640 - 1740\text{ cm}^{-1}$ indicates the existence of the compound entirely in the enolic form [4,6].

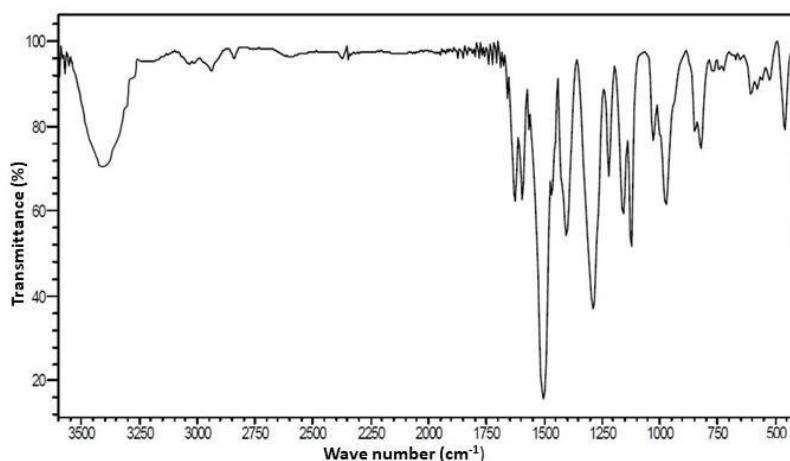


Fig.3 FT-IR spectrum of Curcumin-Ce complex

A representative FT-IR spectrum of Curcumin -Ce complex is provided in Fig.3. In the IR spectra of the metal complexes, the band at 1619 cm^{-1} of the ligand shifted to lower frequency 1595 cm^{-1} . However, spectra of both Ce and Ca the complexes exhibited bands at $\sim 3400\text{ cm}^{-1}$ slightly reduced in intensity due to the stretching of the OH group in the phenyl ring. This reduced intensity may be due to the replacement enolic proton by metal cation. This suggests that only the enol proton is replaced by metal ion and the phenolic OH is excluded from co-ordination.

Antibacterial activity

The results of antibacterial activity of commercial curcumin and their complexes are represented in Table 2. All the compounds were taken in the concentration 5mg/ml in DMSO. Results are compared with that of standard drug reported in literature [7]. The activity is expressed as diameter of zone of inhibition in mm.

Table 2- Inhibition zone distance of samples measured in mm

Sample	Zone of inhibition distance in (mm) Salmonella Typhimurium
Cur-Ce1:1 complex	8 mm
Cur-Ce3:1 complex	9 mm
Cur-Ca1:1 complex	No zone
Cur-Ca3:1 complex	6 mm
Curcumin	6 mm
Amikacin [40]	21 mm
DMSO	No zone

The results of the antibacterial activity of curcumin and their complexes revealed that the ligands and their complexes possess slightly less antibacterial activity to that of standard drug Amikacin [7]. Metal complexes possess better antibacterial activity than that of ligands, except in the case of Curcumin-Ca complex. Though we expected better antibacterial activity with Ca based complex based on literature (8), the result was disappointing only 6 mm inhibition zone distance was observed

with 3:1 complex. Exact reason is not known. Comparing the ligands, Curcumin-Ce (3:1) complex showed greater zone of inhibition (9 mm) towards *Salmonella typhimurium*. A high concentration of curcumin in the complex may have a higher antimicrobial effect (8).

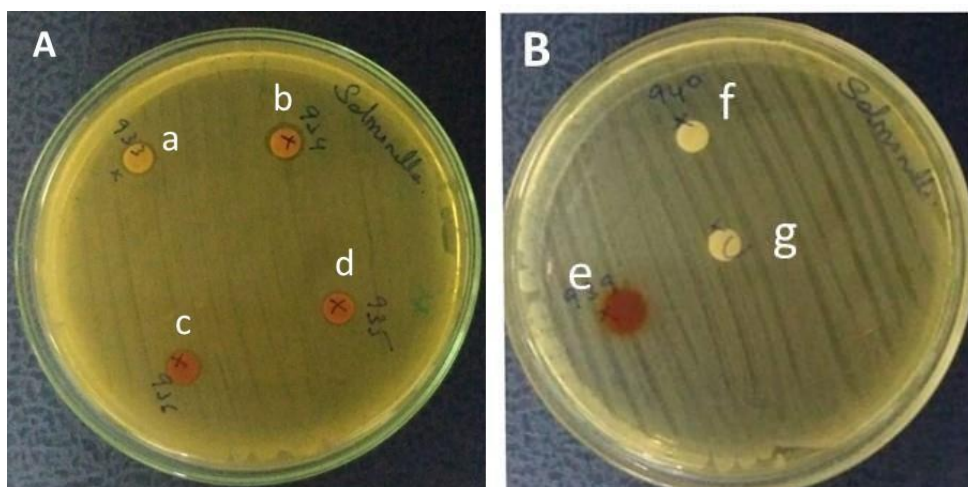


Fig 6 Inhibition zone against screened bacteria from disc diffusion method. A) and B) *Salmonella typhimurium*. a, b, c, d, e, f and g corresponds to disc impregnated with DMSO solutions of Ce 1:1 complex, Ce 3:1 complex, Ca 1:1 complex, Ca 3:1 complex, disc which is impregnated with DMSO as solvent, control and curcumin respectively.

Meanwhile, the antibacterial ability of free curcumin was not higher than that of their complexes. This could be explained that complex curcumin released more slowly than the free form, so the possibility of oxidation was slower. So, the antibacterial activity of the complexes was higher than that of free curcumin (8).

Conclusion

Curcumin metal complexes of Ce (III) and Ca (II) were prepared from respective metal nitrate precursors and curcumin. The complexes were characterized using FT-IR spectroscopy and the study revealed that the complexation of ligand to metal is via the enolic proton. Antibacterial studies were done via disc diffusion method. A common finding in antibacterial studies was that the studied metal curcumin complexes except Curcumin–Calcium complex exhibited a better activity (9 mm) against *Salmonella Typhimurium* than the free ligand (6 mm). Clearly, however, much more work is needed to establish more general trends and

the most effective metal–ligand combinations. Extension of the present study towards preparation of composites of biomedical applications incorporating the prepared complexes is on the way.

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Issues and Challenges of Lokpal and Lokayukta Act

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Introduction

The Lokpal is the first institution of its kind in independent India, established under the Lokpal and Lokayuktas Act 2013 to make inquiries and investigate into allegations of corruption against public functionaries who fall within the scope and domain of the above Act. The Lokpal of India is devoted to address concerns and aspirations of the citizens of India for clean governance. It shall make all efforts within its jurisdiction to serve the public interest and shall endeavor to use the powers vested in it to eliminate corruption in public life.

The Lokayukta is an authority at state level which deals with corruption and maladministration complaints prepared by the general public. This authority is constituted for a quicker redressed of public grievances. The concept of Lokayukta traces back to the ombudsman in Scandinavian countries. The Lokayukta is put into power when the Lokayukta act is approved in the state and works for the State governments and addresses the complaints of the people living in the state. The complaints can be against the integrity and effectiveness of the government or its administration which includes the people working in the government sector. The complaints can also be concerning any corruption faced by the people from the government administration.

Corruption is more or less man kind of symptom similar to the chaotic personality of a child who did not receive a proper moral upbringing. It reflects the sick health of a disorderly society .India's parliament has

been steadily engaged in passing legislation, commencing with the extension of powers granted to the war time special staff in 1924 till the enactment, in 2014, of the lokpal and lokayukta act.

Lokpal and Lokayukta Act

Lokpal was one among the longest unfinished bills within the parliamentary history of India. Ever since the primary lokpal bill was presented in the fourth loksabha in the year 1968, number of times the different version of the lokpal bills were presented, however all these efforts went in vain. Apart from the public appeal, various governmental bodies and commissions in its reports had expressed the need to have the institution of lokpal. There were certain issues in the lokpal bill 2011 due to which this bill was referred to Department-Related Parliamentary standing committee on personnel, public grievances, law and justice for examination and report. Some of the key problems in the bill were the Lokpal bill provided that the lokpal had the jurisdiction to investigate group "A" offices. However, these offices at that time fell within the purview of Central Vigilance Commission, hereinafter referred to as CVC therefore; there would have been issue of dual jurisdiction over these officers.

The bill created an investigation wing under the lokpal. An earlier standing committee, in its report on Central Bureau of investigation, hereinafter referred to as CBI, had recommended against creating additional investigate agencies to tackle corruption, transnational terrorism or organized crimes.

The bill expanded the definition of public servant to include certain private persons under the lokpal, this provision differed from provisions under several other acts.

There were certain flaws in the prosecution and inquiring process. The lokpal could not prosecute any private persons who abet corruption. The seven year constraint on filing grievances may stop action of a two term Prime Minister, hereinafter referred to as PM, in the early years of his term. The punishment set for false and frivolous grievances is dissimilar from other like laws and bills.

The Lokpal bill will be selected by a committee comprising, inter alia, the Chief Justice of India. It will be essentially an administrative committee, a part of the executive. Just as the executive cannot encroach on the judicial domain, similarly the judiciary should not be inducted into executive functioning. If judges of the Supreme Court were to be members of administrative committees, a very anomalous situation may arise. The Lokpal's jurisdiction is restricted to cases of disproportionate assets amassed by public figures. The act is redundant as the prevention of corruption act is adequate to serve the same purpose. Lokpal does not cover day to day corruption.

The provision in the Lokpal Act fixing the age of retirement at 70 has the potential for misuse. It could prove to be too tempting a prize for some retiring members of the higher judiciary to resist, as the appointment of the Lokpal will be in the hands of the executive. It is settled law that the judiciary has no role in the investigation of offences.

The Lokpal has been granted unlimited discretion to delegate his powers, which include raids, search and seizure to any 'officer or employee'. Such a provision is in violation of administrative law whereby a power delegated cannot be sub-delegated. He will be authorised to attach "proceeds of corruption", an expression which is vague and undefined. It is bad in law to empower an executive authority to do so, which is the lawful function of an independent court of law, after examining all evidence. The whole Lokpal issue warrants a serious rethink.

The anti-corruption agitations in the year 2011 forced the government of India to hurriedly pass the Lokpal and Lokayukta Act in 2013, but, it turned out to be a law which could potentially discourage individuals from associating themselves with charitable organisations. The Lokpal and Lokayukta Act, 2013 is an act intended to regulate and control corruption in public institutions. Unfortunately, NGO's and charitable institutions which are voluntary organisations for public purpose and public good have also been included within the purview of this law.

Many charitable institutions receive funds from foreign sources and have high net worth individuals on their board and these individuals are reluctant to disclose their personal assets and make themselves

vulnerable and exposed to extortionists and other anti-social elements, merely because of their involvement with a charitable institution in a purely honorary capacity. Several charitable institutions are 'partly financed' by the Central Government and the term partly financed is neither defined explained where this particular sub-clause is concerned.

There was a lot of lobbying against the implementation of this law and currently, due to the amendment made to section 44 of the Lokpal Act by the Lokpal and Lokayukta (Amendment) Act, 2016, the public servants (furnishing of information and annual return of filling returns) Rules, 2014 and all the amendments made there to have become redundant. At present there is no requirement for public servant to file declarations of their assets and liabilities.

The high-decibel protests put a scare in the congress led United Progressive Alliance (UPA) government at the centre and resulted in the Lokpal and Lokayukta Act 2013. The legislation came into force on January 16, 2014, but before the UPA could appoint a Lokpal, it was unseated by the Bharatiya Janata Party led National Democratic Alliance (NDA) in the general election four months later. The NDA is now six months later. The NDA is now six months away from completing its own term, but there is now Lokpal. The 2014 act also called upon states to appoint a Lokayukta within a year of its coming to force. But now 13 temporary vacancies, seven states haven't ever had a Lokayukta.

The act defined public servant to include current and former Prime Ministers, union ministers, members of parliament, government employees and employees of public sector undertakings, and key employees of non-governmental organisations receiving more than Rs 10 lakh a year in foreign contributions, among others. Current public servants will also have to publicly declare their assets and liabilities and those of their spouse and dependent children India rank a lowly 81 out of 18 countries and territories on transparency. International's corruption perception Index. An anti-corruption plank was key to Narendra Modi's 2014 campaign, but the delay in appointing a Lokpal has given short shrift to it.

The amendment was regressive. “It’s impossible to catch people red handed taking bribes. One of the ways is through assets disproportionate to their known sources of income which are in the names of spouses and dependent children”, says Anjali Bhardwaj, an activist. Hazare says the government is scared of the Lokpal since it could investigate complaints of corruption.

Lokayuktas in different states do not all enjoy the same powers. For instance, the Maharashtra Lokayukta does not have a police wing under it to investigate graft complaints, unlike in Karnataka. There is widely held perception that Lokayuktas are not empowered enough and state Eurasia governments try to weaken them.

In 2016, Karnataka set up on an Anti-Corruption Bureau (ACB), which has been challenged by private petitioners in Court on the premise that it eats into the powers of the Lokayukta, which has joined the case as a respondent .The ACB was created under the condition that it shall not investigate officers and politicians holding certain offices unless prior sanction is given by the government.

The West Bengal Lokayukta law has reportedly been amended to exclude the CM from its purview for bureaucratic and police appointments. Moreover, the efficacy of Lokayukta in tackling corruption has been questioned in the contest of very few complaints being filled in the first place. Venkatesh Nayak of the commonwealth Human Rights initiative says most complaints made to the Lokayukta are to do with maladministration and non-availability of government services rather than corruption. People’s aversion to filling corruption complaints is not limited to Lokayukta alone. The Lokayukta institution, as has existed in several states mostly remains a toothless tiger. A report well summed up. “The institution of lokpal is still born while that of the Lokayukta in states are ineffective”.

In short, Corruption is a sinister epidemic that has a wide range of caustic effects on societies. It undermines democracy and the rule of law, leads to violations of human rights, distorts markets, erodes the quality of life and allows organized crime, terrorism and other threats to human security to flourish. This evil phenomenon is found in all countries – big

and small, rich and poor – but it is in the developing world that its effects are most destructive. Corruption hurts the poor disproportionately by diverting funds intended for development, undermining a Government's ability to provide basic services, feeding inequality and injustice and dispiriting foreign aid and investment. Corruption is a key element in economic deficit and a major obstacle to poverty alleviation and development.

Notes

- The word "Lokpal" is derived from the Sanskrit word "loka" meaning people and "pala" meaning protector or caretaker. Together it means "protector of people".
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- The aim of passing such a law is it to eradicate corruption at all levels of the Indian polity
- Lokapal - the word "Lokpal" has been derived from the Sanskrit word "loka" which means people, and "pala" meaning protector—ergo, "protector of the people".
- Lokayukta may investigate any action taken by the public servant if it is referred by the state government. It is tasked with speedy redressal of public grievances. The complaint will not be taken up if there is any alternate remedy. The procedure of investigation, etc, is the same as that of the Lokpal.
- Ombudsman is a Scandinavian word. It means an officer or

commissioner. In its special sense, it means a commissioner who has the duty of investigating and reporting to Parliament on citizens' complaints against the Government. An Ombudsman has no legal powers except power of inquiry. In simple words, Ombudsman is an officer of Parliament whose main function is to investigate the complaints or allegations against the administration. The main object of the institution of Ombudsman is to safeguard the citizens against misuse of the powers of the administration.

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Biochemical and Cytological Characterization of *Gymnema Sylvestre* (R.Br) Accessions

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Abstract

Genetic diversity assessment is very important to identify groups with similar genotypes and to conserve, evaluate and utilize the genetic resources. During the last twenty years, the classical methods to evaluate genetic diversity have been complemented by molecular techniques. Molecular markers are more promising tools to study genetic variation as any change in the protein sequence would be brought about by a mutation in its DNA sequence. Protein electrophoresis is increasingly being utilized as an additional approach for species identification and as a useful tool for tracing back the evolution of various groups of plants. For analyzing the genetic diversity and interrelationships among the different accessions of *G. sylvestre*, molecular marker systems involving SDS - PAGE protein polymorphism was employed. The total protein content of different accessions of *G.sylvestre* clearly indicates that protein concentration varied with accessions. The activities of polyphenol oxidase and peroxidase enzymes were also found varied in different accessions. The cytotoxicity studies revealed that increasing concentration of the plant extract and consequently increasing toxicity there was an inhibitory effect on cell division leading to chromosomal abnormalities.

Keywords: Genetic Diversity, Molecular Marker, *Gymnema sylvestre*, Protein Content, Cytotoxicity.

Introduction

Plants represent unlimited sources of natural products. Biologically active compounds are accumulated in plants especially as secondary metabolites that have been used as a source of major phytopharmaceuticals ranging from anticancer activity, phosphodiesterase inhibition to cytotoxicity against HIV infected cells. There has been an explosive demand for herbal plants and extracts which can be used to improve human health and well being. In recent times focus on plant research has increased all over the world and a large body of evidence has collected to show immense potential of medicinal plants used in various traditional systems. The extraction cost of metabolites influences the market value of metabolite based drugs. Hence there is a need for identification and characterisation of elite genotypes with quality and yield. In the present scenerio, the assessment of genetic and chemical diversity is the most eminent approach for identification and characterisation of chemotypes. Molecular markers have provided a powerful approach to analyze genetic diversity and evolutionary relationships among and within germplasm accessions in many crop species. Molecular markers assisted genetic analysis provides a means to locate and select genes controlling important agronomic, pest resistance, stress tolerance, and food quality traits .Electrophoretic analysis of proteins offers an efficient and cost effective method towards cultivar identification (Sammour, 1999). Protein polymorphism serves as genetic markers as they are direct products of active genes and are quite polymorphic and generally heritable. The polymorphism observed in the protein profiles reflects the changes in the active part of the genome.

Biochemical markers such as proteins and isozymes have served as an important tool to detect genetic relationships in plants (Mukhlesur et al., 2004). Isozymes are good estimators for elucidating the possible mechanisms leading to the formation of genetic variability in plant populations (Zeidler, 2000). It is widely used in the studies of inter and intra-specific variation. They also show lower levels of polymorphism in a population where the expression of various isozymes differs both temporally and spatially which can correctly identify several levels of taxa,

accessions and individuals since the assumption of homology can be more accurate than for same genomic DNA markers (Smila et al., 2007).

The present study conducted in various accession of *Gymnema sylvestre*. (Plate -1 fig 1) It is a slow growing large perennial and medicinal woody climber distributes throughout in India. *G. sylvestre* is a potent antidiabetic plant and used in folk, ayurvedic and homeopathic systems of medicine. It is also used in the treatment of asthma, eye complaints, family planning, snakebite, urinary complaints, stomach problems, piles, chronic cough, breathing troubles, colic pain, cardiopathy, constipation, dyspepsia and hemorrhoids, hepatosplenomegally. In addition, it also possesses antimicrobial, antihypercholesterolemic, anti-inflammatory and sweet suppressing activities and it also acts as feeding deterrents to caterpillar. (Potawale et.al,2008).The present study was conducted to assess the genetic diversity in *Gymnema* accssions using polypeptide markers and to quantify the protein content Another goal of this study is the isolation and assay of isozymes(polyphenol oxidase and peroxidase) as well as to evaluate the cytotoxicity of the plant extract.

Materials and methods

Plant material

Three different accessions of *Gymnema* were collected from three different districts of Kerala state, Thiruvananthapuram, Kollam and Alappuzha. The plant was taxonomically identified by referring to standard flora (Gamble, 1967; Sasidharan, 2004). The collected plants were grown initially in pots and maintained under identical growth conditions at green house of botanical garden in SN College ,Kollam.

1) Estimation of total Protein

Estimation of total protein in the leaf by Bradford method.

2) Protein profiling

To study the protein profile from young leaf blades from tillering or flowering stage, well known SDS-PAGE (Sodium dodecyl Sulphate Polyacrylamide Gel Electrophoresis) system was used.

Data analysis

Relative molecular weight of polypeptide bands were calculated by comparing bands of the protein molecular weight marker.

3) Isozyme analysis

Fresh leaf extract is used for this analysis.

Isolation and assay of peroxidase

Guaiacol is used as the substrate for the assay of peroxidase. The rate of formation of guaiacol dehydrogenation product is the measure of the peroxidase activity and can be assayed at 436nm. 1gm of plant tissue is weighed and grinded in 20ml of 0.1M Phosphate buffer pH 6. Homogenate was filtered through a cheese cloth and centrifuged at 10000rpm for 10minutes supernatant was collected from centrifugation tube. For assay, 2 ml of 0.1M Phosphate buffer of pH 7, 1ml of 20mM Guaiacol, 0-5 ml of 10mM Hydrogen peroxide and 0.5 ml enzyme from fridge is used as the test solution. 3 Ml, 1M Phosphate buffer of pH 7 and 0.5 ml enzyme is used as the blank solution. OD is measured.

Isolation and assay of polyphenol oxidase

Phenol oxidases are copper containing enzymes which catalyze the oxidation of certain phenolic substrate to quinones, which are autoxidized dark brown pigments. Polyphenol oxidase is very stable at low temperature. 0.1M Citrate phosphate buffer was prepared by dissolving 4.2g of 0.2M citric acid in 100ml distilled water and 3.56g of 0.2M dibasic sodium phosphate in 100ml distilled water. 0.5% catechol prepared by dissolving 50mg in 10ml phosphate buffer.

Isolation of enzyme

1 g of fresh leaf tissue grinded in 10ml chilled 0.1M Citrate phosphate buffer of pH 7. Homogenate filtered through a cheese cloth and centrifuged at 10000 rpm for 20 minutes at 5°C. Supernatant was collected and stored in refrigerator. for assay, 2.5 ml

0.1 M citrate phosphate buffer, 1 ml catechol (0.5%) and 0.5 ml of enzyme is the test solution. 3 ml citrate phosphate buffer and 1 ml of catechol is the blank solution. OD is measured at 420nm.

4) Cytological studies

Extracts of *Gymnema* leaves were prepared using a homogenizer and diluted various concentrations as needed and stored in labeled bottles. The locally available Onion bulbs (*Allium cepa*, $2n=16$) of equal size were chosen as the test material. The bulbs were grown in pots containing sand and sufficient water was given. When fresh roots came out and developed up to 2-3 cm long, the bulbs were taken out, washed and kept in bottles containing different concentrations of *Gymnema sylvestre* leaf extract (25%, 50%, and 100%). Distilled water was used as the control. Cytological preparations were made according to haematoxylin squash technique devised by Marimuthu and Subramanyam (1960) & mitotic index was calculated.

Results and discussion

Estimation of protein

The amount of total proteins varied in different accessions and ranged from 13.405 to 10.98 mg /gm tissue. The highest total protein content was detected in accession collected from Thiruvananthapuram and the lowest in accession from Kollam (Table.1).

Locations	Protein content (mg/gm tissue)
Trivandrum	13.405
Kollam	10.071
alappuzha	10.98

Polypeptide polymorphism

The total foliar proteins resolved on SDS-PAGE showed blue coloured bands with distinct qualitative and quantitative variations at intra specific level in terms of number, protein and band intensity. A total of 34 bands were scored among the three *Gymnema sylvestre* accessions studied. Of these 34 bands, 32 were polymorphic and 2 were monomorphic. 94.11% polymorphism was observed in the protein profile. Each region expressed different proteins which act as representative of the expression of a

particular gene of the studied *Gymnema* species. Among the three accessions of *Gymnema*, that from Trivandrum showed maximum number of protein bands and accession from Alappuzha showed minimum number (9) of protein bands. (fig: 2). Unique banding patterns observed among the three accession of *Gymnema* species acts as fingerprint of the selected accessions. Such finger printing is useful in differentiating the accessions and act as biochemical markers for identifying the accessions. These banding profiles will also facilitate the identification of the medicinally important *Gymnema* accessions in plant systematic studies. Similar to the present study, the similarity and variation among the plant species using SDS-PAGE have been carried out by many researchers (Smila et al., 2007; Johnson et al., 2009; Babu Nanthini et al., 2011; Johnson et al., 2012). The present study explores the existing polymorphic proteins through SDS-PAGE to facilitate the characterization of *Gymnema sylvestre*. Bands that consistently show up on each samples are very likely representative of the polypeptides, that characterize the plant. Additional bands are occurring due to change in environmental conditions of the different locations from which the samples were collected. Gardiner et al (1986) and Gardiner and Ford (1987) stated that electrophoresis can also be used to compare plants of different geographical origin and also to provide taxonomically useful descriptors that are substantially free from environmental influence. In the present investigation, the total protein polymorphism across three accessions is comparatively low.

Isolation and assay of isozymes

Peroxidase enzyme activity

Guaiacol is used as substrate for the assay. The accession from Thiruvananthapuram showed highest activity, reaching up to 0.28 Eu/gm tissue. The activity of the remaining accessions was 0.16 Eu/gm tissue (Kollam) and 0.08 Eu/gm tissue (Alappuzha). Result indicated that peroxidase activity were varied in different accessions used. (Fig. 3). An increase in peroxidase activity has been reported as an early response to different stresses and may provide cells with resistance against formation of H_2O_2 which is formed when plants are exposed to stress factors and so cause change in plant metabolism (Castillo, 1992). Peroxidase is also

involved in a large number of biochemical and physiological processes and may change quantitatively and qualitatively during growth and development (Zhi, 2003). In biotechnology and associated research areas (enzymology, biochemistry, medicine, genetic, physiology, histo-and - cytochemistry), peroxidase have conquered a prominent position and it remains the major enzyme used to evaluate the heat processing of plants (Adams JB, 1977). The investigation of this enzyme may be interest not only for its negative effects on color and flavour degradation of pigme but has a positive impact on its medicinal value. Despite the variety of pl peroxides sources, there is no previous work on peroxidase from *Gymnema sylve* leaves.

Polyphenol oxidase

The polyphenol oxidase activities in the accessions were found between 0.12 - 0.8 gm tissue. The highest activities of polyphenol oxidase was found in Thiruvananthapuram accession whereas the lowest activity of the enzyme was fo in the accession collected from Kollam (Fig.4). Polyphenol oxidase, a co r containing enzyme, oxidized phenolics to highly toxic quinines and is involved in terminal oxidation of diseased plant tissue and is attributed for its role in dise s resistance. (Barilli, 2010). The enzyme has been shown to exist in multiple and i r convertible forms and is widely distributed in plant kingdom. It is well known that the enzyme plays an important role in the browning reaction in fruits and vegetables. It has been suggested that the polyphenol oxidase enzyme might be associated with many important physiological functions such as growth and differentiation (Nitesh et al., 2010).

PLATE-1

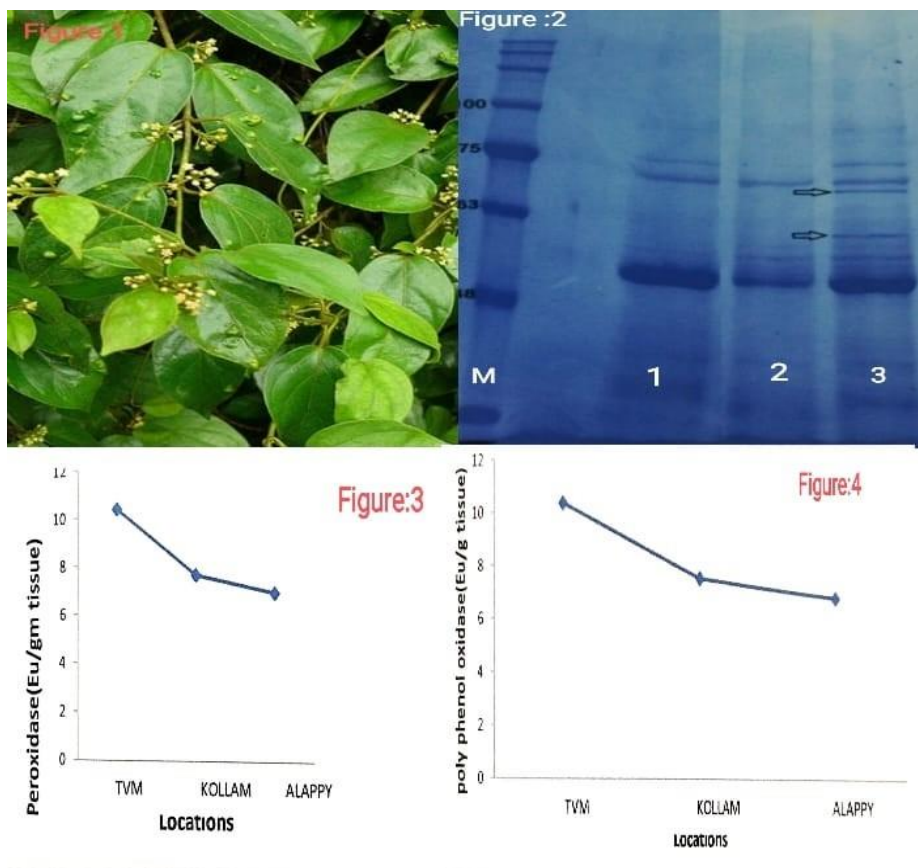


PLATE -1: **Figure 1-** Habit of *Gymnema sylvestre*, **Figure 2-** SDS-PAGE profiling of foliar proteins in *Gymnema sylvestre*. figure legends: M-Marker protein, 1, 2 and 3- Accessions of *G. Sylvestre* from Kollam, Alapuzha and Trivandrum. **Figure 3-** Graphical representation of peroxidase in accessions collected from different locations. **Figure 4-** Graphical representation of poly phenol oxidase activity in accessions collected from different locations

Cytotoxicity studies

Disturbances of mitosis

Good root growth was achieved in the control. At tested concentrations, root growth was highest at the 1% concentration of all the extracts while it was least at 50%. Inhibition of root growth was concentration dependent. In the entire samples restricted root growth implying toxicity was noted. All the tested extracts induced disturbances of the mitotic spindle

disturbances at various concentrations. In the control roots, besides typical stages of mitosis, stickiness, abnormal metaphase and polyploidy occurred. The lowest (25%) concentration induced three additional types of mitotic disturbances, including chromosomal bridges, polyploidy and c-mitosis (Fig. 7). Delayed anaphase and C-mitosis were the most common effects followed by chromosomal breaks and bridges. On the other hand, 50% concentration caused as much as four mitotic abnormalities that were not observed in the control (Fig. 6) that is sticky metaphase (Fig. 6. 3 & 6. 7), fragmentation (Fig 6. 4), laggard chromosome (Fig. 6. 5), delayed progression of prophase to metaphase (Fig. 6. 2 & 6. 8). The maximum abnormalities was observed after the treatment with higher concentration of leaf extract, mostly due to high number of chromosome bridges and sticky chromosomes, as well as appearance of irregular anaphase (Fig. 5. 1 & 5.4), laggards (Fig. 5.7), vagrant chromosomes (Fig. 5. 5, 5. 9 & 5. 11)

The stickiness of the chromosome observed in here may due to any upset in the spindle formation (Borah and JantaTalukar, 2002). However Onyenwe (1983) opined that stickiness may result from DNA depolymerization, partial dissolution of nucleoprotein, breakage and exchange of folded units of chromatids and the stripping off of the protein coat of DNA. Single, double and multiple chromatin bridges were found. Chromosomal bridge formations have been attributed to chromosome breakage, stickiness and reunion of broke ends. The stickiness in turn ensured gluing together of chromosomal ends, leading to the formation of connecting bridges (Bada et al., 1992). Such chromosomal bridges eventually result in inhibition of cytokinesis causing mitotic arrest. In the roots treated with 100 percentage extract increase in the number of all mitotic abnormalities was mainly the result of huge c-metaphases enhancement and moderate number of chromosome bridges (Fig.5).

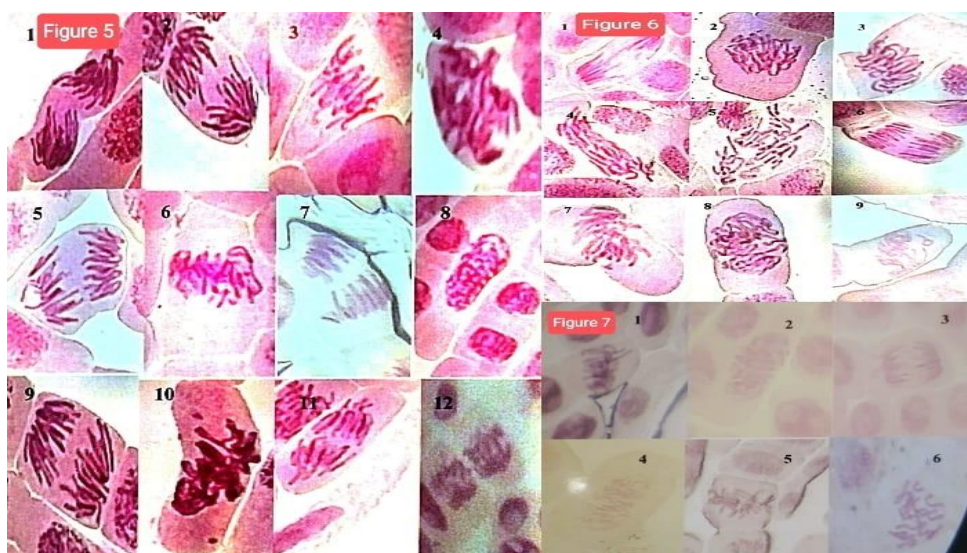


PLATE-2 **Figure 5:** 1) Irregular anaphase 2) Chromosome fragmentation 3) Sticky metaphase 4) Delayed anaphase 5, 9 & 11) Vagrant chromosomes 6) Abnormal metaphase 7) Laggards 8) Abnormal spiralization 10) Chromosome stickiness 12) Chromosome bridge.

Figure 6: 1) Chromosomal Bridge 2&8) Delayed progression of prophase to metaphase 3&7) Sticky metaphase 4) Fragmentation 5) C-mitosis 6) Laggard chromosome 9) Abnormal metaphase.

Figure 7: 1) Abnormal Metaphase 2) Thickiness 3) Chromosomal Bridge 4) Polyploidy 5) Disrupted Metaphase 6) C- Mitosis

Mitotic index

Leaf extract treatment induced progressive decrease in mitotic index as function of increased concentration. All the tested concentration of the extract diminished the number of dividing cells in *A. cepa* root meristem. The most pronounced effect was noticed in low (25%) concentration, while the least after incubation in high (100%) concentration. Additionally, proportion of mitotic phases (mainly prophases and telophases) in MI value changed with concentration. The highest mitotic index value in treated group was 10.36 at very low concentration (25%) whereas the lowest value (6.95) was found in the highest concentration. The results shows in table 2.

Table 3: Mitotic index at different concentration

Concentration (%)	Mitotic index
25	10.36
50	7.65
100	6.95

Conclusion

In this particular study, the protein profiles revealed a greater number of polymorphic markers; the variability generated using polypeptide profile was high. In the result of total protein content it clearly indicates variation in different accessions. In the case of peroxidase and polyphenol, the results also varied with different accessions. Finally the cytotoxicity studies shows that with increasing concentration of the plant extract and consequently increasing toxicity and also the result indicates the presence of various types of chromosomal abnormalities.

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Synthesis, Characterization and Biological Studies of Transition Metal Complexes of Mn(II), Cu(II) And Zn(II) With An Azo Dye (E)-4-((2,6-Dihydroxyphenyl) Diazenyl) Benzoic Acid

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Abstract

The present work includes the synthesis and characterization of complexes of (E)-4-((2,6-dihydroxyphenyl) diazenyl) benzoic acid with metal ions Mn(II), Cu(II) and Zn(II) and characterized by elemental analysis, spectroscopic data including FT-IR, ¹H-NMR and Electronic spectra. It has been found that the azodye behaves as a neutral bidentate N, O donor which chelates with the metal ions Cu(II) and Mn(II) in 1:2 and with Zn(II) in 1:1 stoichiometry. Magnetic moment and electrolytic conductance data confirms this. The azodyes and complexes were screened for antimicrobial activity. The ligand and the complexes show better antimicrobial activity.

Key words: 4-amino benzoic acid, resorcinol, antimicrobial activity NMR spectra

Introduction

Many of the metal complexes are deeply colored and are used as dye and pigment before they were recognized as co-ordination compounds.¹ The structure and constitution of metal complexes of azo dyes are extensively studied by co-ordination chemists. It was Morgan and his students, who made significant contribution on the importance of co-ordination chemistry in dyeing technology. Variation in color or shade, resulting from

changes in metal ion present in the bath, as on the fiber during dyeing supports the formation of co-ordination compounds.^{2,3}

The azo dyes having a donor group in the ortho position to the azo group, are generally chelating agents. Stability and unstability refers to the position of equilibrium, ie, to the equilibrium constant. This constant is a measure of enthalpy and entropy changes and hence a thermodynamic property. The thermodynamic stability of metal chelates is influenced by the basicity of the ligand, chelate ring size, number of chelate rings per ligand and nature of metal. The stability of metal complexes increases with increase in basic strength.⁴ It is found that the chelate ligands form stable complexes than those formed by their mono-dentate analogues. The chelate stability arises largely from favorable entropy changes.⁵ In this work we have prepared an azo dye from resorcinol and 4-amino benzoic acid; (RABA). The complexes of Zn(II), Mn(II) and Cu(II) were prepared using RABA.

Experimental

Preparation of Ligand

The ligand used for the present study is resorcinol azo benzoic acid [RABA]. 3.425g of 4-aminobenzoic acid was dissolved in 14ml 1:1 HCl. Then it is cooled. This solution was diazotized by using a cooled solution of 1.725g of NaNO₂ in 10ml of water. This solution was filtered and cooled. Prepared another solution by dissolving 2.75g of resorcinol in 22.5ml 2%NaOH. Into this the diazotized mixture was added with constant stirring. The red precipitate obtained was allowed to attain room temperature. It was suction filtered and dried over anhydrous CaCl₂ in a decicator.

Preparation of Complexes

The complexes are synthesized by a general method. Methanolic solution of the metal salt(0.01mol) and ligand(0.01mol) are mixed. The ligand solution is added gradually in small portions with good stirring to the metal salt solution when sudden color change was occurred indicating the complex formation. Then it was kept under reflux for 2-3 hours, on a water bath for completion of reaction. Afterwards, the solid complexes formed

were filtered, washed with ethanol to remove excess ligands. It was then dried in vacuum decicator.

Materials and methods

All the chemicals used are of analytical grade and purchased from Merck. The complexes were analyzed for metal and halide content by standard methods [8]. The electrical conductance of the complexes in methanol and DMF (10⁻³ m solution) were measured at room temperature using a Systronics direct reading conductivity meter. The Infrared spectra of the ligands and complexes were recorded in the range of 4000-400 cm⁻¹ on a Perkin Elmer spectrum 65 IR spectrophotometer. Electronic spectra of the ligands and the complexes in methanol were measured in the range 200-900 nm on Perkin Elmer Lamda 25 UV-Visible spectrophotometer. The Elemental analyses (C, H, N) were carried out on a Vario EL-III CHN Elemental analyzer at the SAIF, Cochin University of Science and Technology. The magnetic moments were measured at room temperature on a Sherwood Scientific magnetic susceptibility meter.. The proton NMR spectrum of the ligand and zinc complex was recorded in Bruker, AscendTM 400 NMR spectrometer at 400MHz.

Results and Discussion

The complexes reported here are stable, colored and non-hygroscopic amorphous solids. They are partially soluble in acetone and methanol, and completely soluble in DMSO, but insoluble in water, chloroform and ethanol.

The microanalytical data are shown in the table 1 given below. The experimental values are in good agreement with the theoretical values. Based on the elemental analysis , the empirical formulae of Zn(II), Mn(II) and Cu(II) complexes can be formulated as [Zn(RABA)(H₂O)₂]CH₃COO⁻, [Mn(RABA)₂(H₂O)₂] and [Cu(RABA)₂] respectively.

Table 1

Compound	Carbon %		Hydrogen%		Nitrogen %		Oxygen %		Metal %	
	Cal	Obs	Cal	Obs	Cal	Obs	Cal	Obs	Cal	Obs
RABA	60.47	60.54	3.88	3.81	10.85	10.91	24.81	23.5	-	-
[Zn(RABA)(H ₂ O) ₂] CH ₃ COO ⁻	43.53	43.57	3.63	3.67	7.81	7.78	26.79	26.71	18.24	18.27
[Mn(RABA) ₂ (H ₂ O) ₂]	51.58	51.52	3.64	3.61	9.26	9.30	26.45	26.47	9.08	10.01
[Cu(RABA) ₂]	54.03	54.10	3.12	3.08	9.70	9.63	22.16	22.21	11.00	10.98

The magnetic moment value calculated for Mn(II) and Cu(II) complexes are 6.12 BM and 1.81 BM respectively. The magnetic moment value supports octahedral structure for Mn(II) complex and square planar structure for Cu(II) complex. The molar conductance of the complexes (10⁻³ molar concentration) were carried out in DMSO indicated that Mn and Cu complexes are non-electrolytes⁶. But Zn(II) complexes act as 1:1 electrolyte. The values are presented in the table 2 below.

Table 2

Complex	Molar Conductance in DMSO (ohm ⁻¹ cm ² mol ⁻¹)	Assignment
[Zn(RABA)(H ₂ O) ₂] [Mn(RABA) ₂ (H ₂ O) ₂] [Cu(RABA) ₂]	65 27 32	1:1 electrolyte Non-electrolyte Non-electrolyte

UV-Visible Spectra

Table 3

Compound	λ_{\max} (nm)	Assignment
RABA	393	n \rightarrow π^*
	259	$\pi\rightarrow\pi^*$
[Mn(RABA) ₂ (H ₂ O) ₂]	394	n \rightarrow π^*
	259	$\pi\rightarrow\pi^*$
	648	d \rightarrow d transition
[Cu(RABA) ₂]	390	n \rightarrow π^*
	259	$\pi\rightarrow\pi^*$
	597	² B _{1g} \rightarrow ² E _g
	684	² B _{1g} \rightarrow ² B _{2g}

Table 3 shows the ligand is characterized by two absorption bands in the UV region. A high intensity band at 393nm is attributed to $n \rightarrow \pi^*$ transition and low intensity band at 259nm is attributed to $\pi \rightarrow \pi^*$ transition of azo group. The absorption bands in the complexes are shifted and new bands are appeared due to $d \rightarrow d$ transition. The band at 648nm in Mn(II) complex suggests an octahedral geometry to the complex. The bands at 597nm and 684nm in Cu(II) complex suggests a square planar geometry to the complex.⁷

FT-IR Spectra

The IR spectral data of the ligand RABA and complexes with Zn(II), Mn(II) and Cu(II) are in agreement with an expected range. The band at 1477cm^{-1} in the ligand is attributed to azo group. This is shifted to 1417cm^{-1} in Zn complex, 1412cm^{-1} in manganese complex and 1420cm^{-1} in copper complex suggesting a coordination of metal ion to nitrogen of azo group. The band at 1242cm^{-1} in the ligand is attributed to C-O stretching. This is shifted to 1236cm^{-1} in Zn complex, 1241cm^{-1} in manganese complex and 1229cm^{-1} in copper complex. The carbonyl absorption of ligand and complexes are given by the bands at 1602cm^{-1} (in ligand), 1597cm^{-1} (in Zn complex), 1596cm^{-1} (in Mn complex) and at 1601cm^{-1} (in Cu complex).

Table 4

RABA ($\bar{\nu}\text{ cm}^{-1}$)	Zn(RABA)(H ₂ O) ₂]CH ₃ COO- ($\bar{\nu}\text{ cm}^{-1}$)	[Mn(RABA) ₂ (H ₂ O) ₂] ($\bar{\nu}\text{ cm}^{-1}$)	[Cu(RABA) ₂] ($\bar{\nu}\text{ cm}^{-1}$)	Assignment ($\bar{\nu}\text{ cm}^{-1}$)
1477	1417	1412	1420	$\bar{\nu}\text{N}=\text{N}$
1242	1236	1241	1229	$\bar{\nu}\text{C}-\text{O}(\text{chelated})$
1602	1597	1596	1601	$\bar{\nu}\text{C}=\text{O}(\text{free})$
–	778	728	768	$\bar{\nu}\text{M}-\text{N}$
–	690	667	653	$\bar{\nu}\text{M}-\text{O}$

NMR Spectra

Proton NMR spectra of the ligand RABA shows the following signals: Multiplet of aromatic proton of the benzoic acid part at 7.6 -8.1 ppm. Multiplet of aromatic proton of the resorcinol part at 6.3 -6.6 ppm. Singlet

signal due to $-\text{OH}$ of $-\text{COOH}$ group at 12.39 ppm. Singlet signal due to $-\text{OH}$ of resorcinol part at 10.89 ppm.

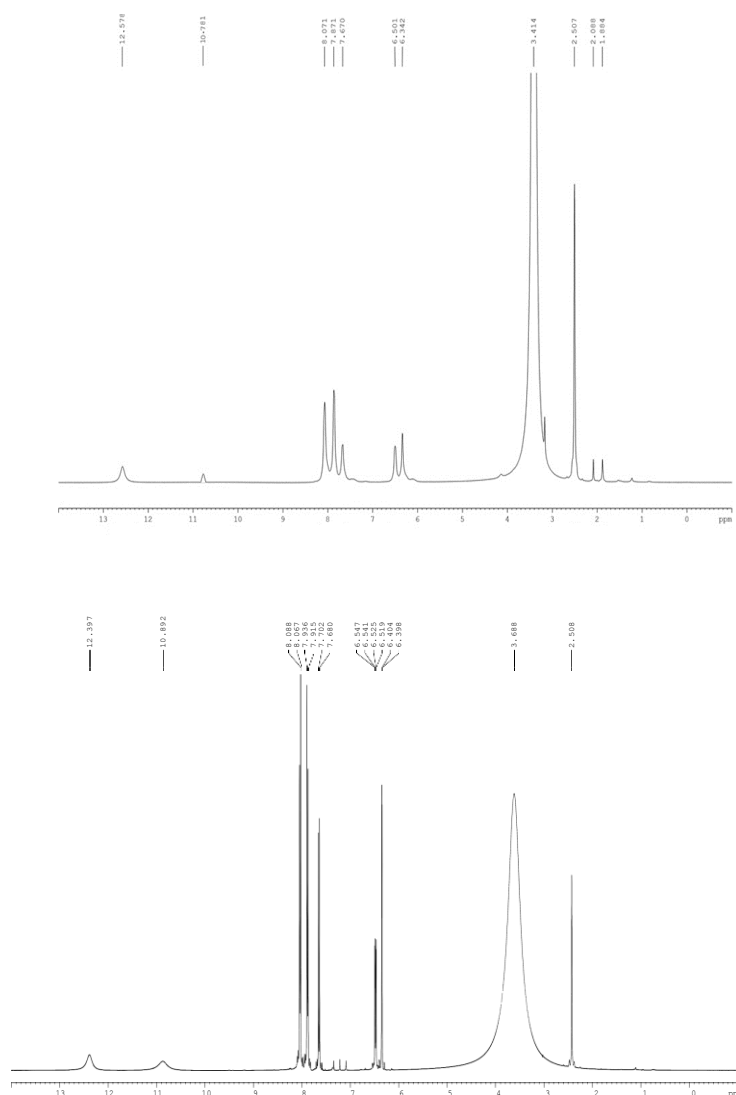


Fig:1 NMR Spectrum of zinc complex, $[\text{Zn}(\text{RABA})(\text{H}_2\text{O})_2]\text{CH}_3\text{COO}$ Fig:1NMR Spectrum of ligand (RABA)

The Proton NMR spectrum of the $\text{Zn}(\text{II})$ complex shows the following signals: Multiplet of aromatic proton of the benzoic acid part at 7.6 -8.1 ppm. Aromatic proton of the resorcinol part shows a multiplet at 6.3 -6.5 ppm. Singlet obtained due to $-\text{OH}$ of $-\text{COOH}$ group at 12.57 ppm. Singlet signal of $-\text{OH}$ (resorcinol part) is obtained at 10.79 ppm. From the spectra

of the ligand and the complex we can confirm that one of the –OH group in the resorcinol is coordinated to the metal. The less intense peak at 10.78 ppm indicates the second –OH group of the resorcinol remain unchanged in its position. It is not coordinated to the metal.

On the basis of these observations and discussions it can be suggested that RABA is acting as a bidentate ligand. The Zn(II) and Cu(II) complexes have co-ordination number four and assumes tetrahedral and square planar geometry respectively and Mn(II) complex has co-ordination number six and assume octahedral geometry.

The proposed structures for the complexes are shown in Fig. 3, 4 and 5.

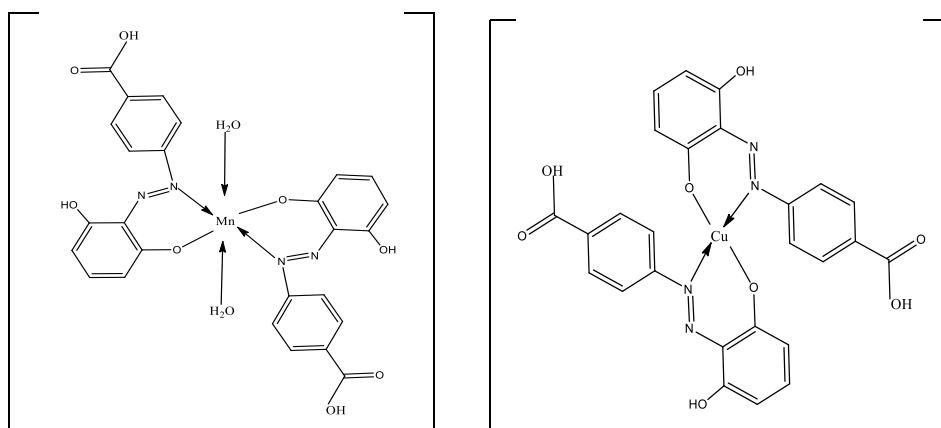


Fig:3 Proposed structure for [Mn(RABA)₂(H₂O)₂] Fig:4 Proposed structure for [Cu(RABA)₂]

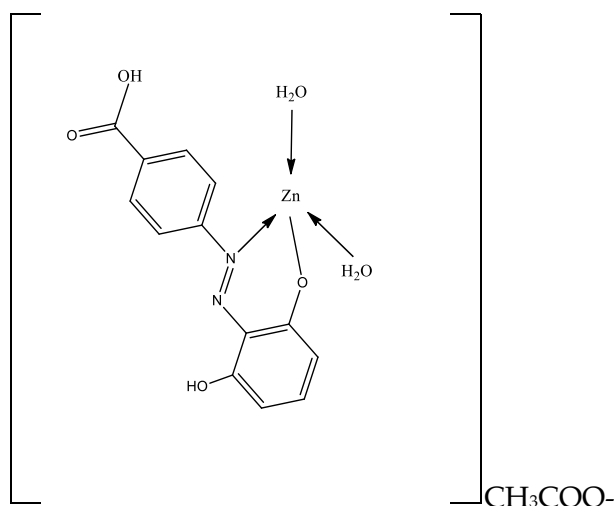


Fig:5 Proposed structure for [Zn(RABA)(H₂O)₂]CH₃COO⁻ Fig:

Antibacterial Activity

The invitro biological screening effect of the investigated compounds were tested against the bacteria *Staphylococcus aureus* by using Agar-well diffusion method by taking DMSO as solvent. The result indicates that the $[\text{Mn}(\text{RABA})_2(\text{H}_2\text{O})_2]$ shows greater antibacterial activity than RABA against *Staphylococcus aureus*. Stock concentration 10mg/ml.

Organism: *Staphylococcus aureus*

Sample	Concentration ($\mu\text{g/mL}$)	Zone of inhibition (cm)
Ligand RABA	Streptomycin (10 μg)	3.5
	250	Nil
	500	Nil
	1000	1.0

Sample	Concentration ($\mu\text{g/mL}$)	Zone of inhibition(cm)
Mn complex $[\text{Mn}(\text{RABA})_2(\text{H}_2\text{O})_2]$	Streptomycin (10 μg)	3.5
	250	Nil
	500	Nil
	1000	1.3

Antifungal Activity

The antifungal activity was determined by Agar well diffusion method. Concentration of Stock: 10mg/ml

Organism: *Candida albicans*

Sample	Concentration ($\mu\text{g/mL}$)	Zone of inhibition (cm)
Ligand RABA	Clotrimazole	1.5
	250	Nil
	500	Nil
	1000	1.0

Sample	Concentration ($\mu\text{g/mL}$)	Zone of inhibition (cm)
Mn complex [Mn(RABA) ₂ (H ₂ O) ₂]	Clotrimazole	1.5
	250	Nil
	500	Nil
	1000	1.3

The result indicates that the [Mn(RABA)₂(H₂O)₂] shows greater antifungal activity than RABA against *Candida albicans*.



Antibacterial activity of ligand (RABA)

Antibacterial activity of [Mn(RABA)₂(H₂O)₂]

Antifungal activity of ligand (RABA)

Antifungal activity of [Mn(RABA)₂(H₂O)₂]

Conclusion

An azo dye is prepared from resorcinol and 4-amino benzoic acid; (RABA). The complexes of Zn(II), Mn(II) and Cu(II) were prepared using RABA. Characterization of the ligand and complexes has been done on the basis of analytical and physico chemical methods. From their spectral and magnetic data it is concluded that the manganese complex possess

octahedral geometry having the formula $[\text{Mn}(\text{RABA})_2(\text{H}_2\text{O})_2]$ and copper complex possess square planar geometry having formula $[\text{Cu}(\text{RABA})_2]$. Tetrahedral geometry is assigned for the zinc complex $[\text{Zn}(\text{RABA})(\text{H}_2\text{O})_2]$ on the basis of conductance measurements, IR and NMR spectral studies. The ligand and metal complexes were screened for their biological activities against *Staphylococcus aureus* and *Candida albicans*. The ligand and the complexes show better antimicrobial activity.

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The Qualitative Analysis of Phytoconstituents of *Sida Rombifolia* L.

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Abstract

Malvaceae family member *Sida rhombifolia* is frequently used in Ayurvedic medicine to treat infectious infections, fever, diarrhoea, and as a diuretic. It has been discovered that the plant contains a number of bioactive chemicals with therapeutic properties. Today's medications used to treat a variety of disorders are often based on plants and plant-based products. Many species of *Sida*, also referred to as "Bala," are known to have analgesic, anti-inflammatory, hypoglycemic, and hepatoprotective properties. In the current study, *Sida rhombifolia* leaves were subjected to phytochemical screening utilising six different solvents, including acetone, alcohol, chloroform, petroleum ether, and benzene. Standard techniques were used to screen the qualitative phytochemical content of the extracts made from powdered plant components. phytochemicals examined were discovered in different solvent extracts of *Sida rhombifolia* L. This research proved that the chosen plant species is a potent source of helpful medicines. However, additional research in this area is necessary for a full investigation, including qualitative, to characterize its chemical structure and evaluate its biological activities.

Introduction

In the Family Malvaceae, *Sida rhombifolia*, often known as arrowleaf sida, is a perennial or occasionally annual plant that is indigenous to the tropics and subtropics of the Old World. For the treatment of infectious infections,

fever, diarrhoea, and diuretics is frequently used in Ayurvedic medicine. *S. rhombifolia* is a woody, variable-year or perennial bush that grows to a height of about 1.5 metres. It has symmetrical hairs and sharp branches. The leaves have a short petiole, are rhomboid-lanceolate to pointy, unpleasant at the top and bottom, and measure up to 5 mm by 18 mm in size. According to reports, the plant has a number of bioactive chemicals with therapeutic properties. Particularly in warmer locations, it is a global species. It is a little shrub or woody herbaceous plant with stems that are upright. It is employed as an emollient and demulcent for conditions affecting the stomach, including as discomfort, indigestion, flatulence, and gastritis. It has also been demonstrated to have hepatoprotective and restorative properties (CSIR,1999 and ICMR 2005). Different *S. rhombifolia* morphological components have been the subject of numerous biological activity studies. When hyper bilirubinemic rats were given aqueous extract of the leaves, this plant's potential as a source of novel medications for those with the condition was demonstrated (Mohd FF 2012). It is said that *Sida rhombifolia* can treat a variety of diseases, including rheumatism, seminal weakness, and diarrhoea (Rainsford KD, 1980).

Materials and Methods

Collection of plant material

Five separate places throughout Kollam were used to collect the *Sida rhombifolia*, L. Plant pieces were collected and dried in the shade for ten days. To prevent microbiological contamination, there was continuous monitoring. To create a fine powder, the dried plant material was taken and pounded in a mortar and pestle. To obtain finer particles, the powder was again run through a 2 mm screen. The powdered samples were kept in a clean glassware container and kept at a low temperature until analysis was required. (Das *et al.*, 2010).

Preparation of plant extracts

A sample weighing 5 grammes was obtained, dried and pulverised. It was put in acetone, petroleum ether, chloroform, ethyl alcohol, benzene, and distilled water individually. 24 hours of continuous stirring while the mixture was mixed and extracted on a stirrer. The extracts were centrifuged for clarity after extraction, filtered through Whatman No. 1

filter paper, and then kept for additional phytochemical research. (Das *et al.*, 2010).

Qualitative test for phytochemical detection

Numerous phytochemical components, including carbohydrates, alkaloids, saponins, phytosterols, glycosides, phenols, tannins, flavonoids, steroids, and terpenoids were analysed using the protocols outlined below (Harborne, 1998).

A. Test for Carbohydrates

Benedict's test: - In order to confirm the presence of carbohydrates, the test solution was combined with a few drops of Benedict's reagent (an alkaline solution containing cupric citrate complex) and heated in a water bath. The production of a reddish-brown precipitate was then seen.

Fehling's Test: - Filtrates were heated with Fehling's A & B solutions after being hydrolysed with dilute HCl, neutralised with alkali, and hydrolysed presence of reducing sugars is shown by the precipitation of red colour.

Molisch's Test: - Two drops of an alcoholic -naphthol solution were applied to filtrates in a test tube. The violet ring that forms at the junction denotes the presence of carbohydrates.

B. Test for Alkaloids

Wagner's Test: - A portion of the extract was subjected to 3–5 drops of Wagner's reagent, which is a solution of 1.27g of iodine and 2g of potassium iodide in 100ml of water, to detect the presence of alkaloids by looking for the development of a reddish-brown precipitate (or coloration).

Mayer's Test: - Mayer's reagent was used to process the filtrates (Potassium Mercuric Iodide). Alkaloids are present when a precipitate with a yellow hue form.

C. Test for Saponins

Foam Test: - A test solution and water mixture were agitated to create froth, which should remain stable for 15 minutes. This outcome suggests that saponins are present.

Froth Test: - Using 20ml of distilled water as a dilution, the extracts were shaken in a graduated cylinder for 15 minutes. Saponins are present when a layer of foam measuring 1 cm thick forms.

D. Test for Phytosterols

Salkowski's Test: - Chloroform was used to process and filter the extracts. Conc. Sulphuric acid was added to the filtrates in little amounts, agitated, and left to stand. Triterpenes are present if they have a golden yellow appearance.

E. Test for Glycosides

Liebermann's test: - 2ml of acetic acid and 2ml of chloroform were combined with the crude extract. Ice was used to chill the concoction. A carefully diluted H₂SO₄ solution was added.

The presence of the steroidal nucleus, which is the glycine part of the glycoside, was shown by a colour shift from violet to blue to green.

Salkowski's test: - Two millilitres of chloroform were combined with crude extract. Afterward, 2ml of concentrated H₂SO₄ was cautiously added and gently shaken. The glycone part of the steroidal ring, which gives the substance its reddish-brown colour, was present.

Keller Killiani Test :- A few drops of glacial acetic acid and ferric chloride solution were added to the test solution before being blended. Concentrated sulfuric acid was applied, and the development of two layers was watched. A positive test for glycosides would show a lower layer that is reddish brown and an upper layer that is acetic acid that turns bluish green.

Tannins, alkaloids, sugars, terpenoids, steroids, and flavonoids are some of the chemical compounds found in medicinal plants that have defined physiological effects on humans. Medicinal plants contain some organic compounds which provide definite physiological action on the human body and these bioactive substances include tannins, alkaloids, carbohydrates, terpenoids, steroids and flavonoids (Edoga, 2005; Mann, 1978).

The primary or more accurately secondary metabolism of living things produces these chemicals. Secondary metabolites are incredibly diverse

chemically and taxonomically and have unknown purposes. They are extensively employed in a variety of fields, including veterinary medicine, agriculture, scientific research, and numerous others (Vasu, 2009).

F. Test for Phenols

Ferric Chloride Test: - Three to four drops of a ferric chloride solution were added to the extracts. Phenols are present when a bluish black colour forms.

G. Test for Tannins

Gelatin Test: - A sodium chloride-containing 1% gelatin solution was added to the extract. The presence of tannins is shown by the formation of white precipitate.

Braymer's test: - 10% alcoholic ferric chloride solution was used to treat 2ml of the extract. Tannins can be detected by the formation of blue or greenish coloured solutions.

H. Test for Flavonoids

Shinoda test: - A small amount of magnesium ribbon pieces was combined with crude extract. HCl was added drop by drop. After a little while, a pink scarlet colour emerged, indicating the presence of flavonoids.

Alkaline reagent test: - 2% NaOH solution was dissolved in 2ml of crude extract. When a few drops of diluted acid were added, a bright yellow colour that had formed went colourless, indicating the presence of flavonoids.

I. Test for Steroids

Liebermann Burchard test: - A few drops of acetic anhydride were added to the crude extract before it was heated and cooled. Then, concentrated sulfuric acid was introduced from the test tube's sides, and the development of a brown ring at the intersection of two layers was watched for. Positive results for steroids are indicated by the upper layer's green colouring.

J. Test for Phlobatannins

Precipitate test: The presence of phlobatannins was determined by the formation of a red precipitate after boiling 2 mls of extract with 1 ml of 1% aqueous hydrochloric acid.

K. Test for Quinones

HCl Test: - The production of a yellow precipitate was monitored after a little amount of extract was treated with concentrated HCL.

L. Test for Oxalate

Acid Test: - There were a few drops of glacial ethanoic acid added to the 3ml portion of the extracts. Oxalates are present when there is a greenish black colour.

Results and Discussion

Phytochemical screening in the extracts of distilled water, alcohol, chloroform, petroleum ether, and benzene, but they were completely absent from the acetone extract. Phytochemicals were screened qualitatively in several *Sida rhombifolia*, with the following findings. Alkaloids were absent from other extracts and only present in the petroleum ether extract. Contains phenols in all five extracts excluding extract of chloroform. acetone, distilled water, and alcohol extracts all contain tannins. All other extracts lack flavonoids, while they are found in distilled water, alcohol, and chloroform extracts. Only extracts of alcohol and chloroform reveal the presence of steroids. phytochemicals such phytosterols, glycosides, phlobatannins, and quinones and oxalate weren't present in any of the extracts. Alkaloids were remarkably present in petroleum ether and benzene extracts, but not in any other extracts, according to the data. Alcohol extract demonstrated the presence of steroids. Alkaloids, steroids, flavonoids, and phenols were found in the extracts of *Sida rhombifolia*, L., according to phytochemical analysis. In petroleum ether and benzene extracts, alkaloids are also present that have some metabolic functions and regulate growth in biological systems. Particularly the steroidal alkaloids, they have a role in animal defence mechanisms and are utilised as medicines.

Conclusion

Carbohydrates were detected by phytochemical screening in the extracts of distilled water, alcohol, chloroform, petroleum ether, and benzene, but they were completely absent from the acetone extract. The qualitative phytochemical study has revealed that the extract is positive for saponins, flavonoids, alkaloids, phenols, and the same extract tests negative for glucose, tannins, glycosides, cardiac glycosides, terpenoids, steroid and phytosteroids, phlobatanins, and anthraquinones. The assessment of flavonoid, tannin, and total phenol concentration is part of the quantitative analysis of phytochemicals. The findings imply that *Sida rhombifolia* leaf extract has a significant number of phytochemicals useful in the complementary and alternative medicine and pharmaceutical industries.

Phytochemicals	Distilled Water	Acetone	Alcohol	Chloroform	Petroleum ether	Benzene
Carbohydrates	+	-	+	+	+	+
1. Benedict's test	+	-	+	+	+	+
2. Molisch's Test	+	-	+	+	+	+
3. Fehling's Test	+	-	+	+	+	+
Alkaloids	-	-	-	-	+	-
1. Wagner's Test	-	-	-	-	+	-
2. Mayer's Test	-	-	-	-	-	-
Saponins	+	-	-	-	+	+
1. Foam Test	+	-	-	-	+	+
2. Froth Test	+	-	-	-	-	+
Phytosterols	-	-	-	-	-	-
1. Salkowski's Test	-	-	-	-	-	-
Glycosides	-	-	-	-	-	-
1. Liebermann's Test	-	-	-	-	-	-
2. Salkowski's test	-	-	-	-	-	-
3. Keller Killiani Test	-	-	-	-	-	-

Phenols 1. Ferric Chloride Test	+	+	+	-	+	+
Tannins 1. Gelatin Test	+	+	+	-	-	-
2. Braymer's test	+	+	+	-	-	-
Flavonoids 1. Shinoda test	+	-	+	+	-	-
2. Alkaline reagent test	+	-	+	+	-	-
Steroids 1. Liebermann Burchard test	-	-	+	+	-	-
Phlobatannins 1. Precipitate test	-	-	-	-	-	-
Quinones 1. HCl Test	-	-	-	-	-	-
Oxalate 1. Acid Test	-	-	-	-	-	-

Table 1. Result of phytochemical screening of *Sida rhombifolia*, L.

Conclusion

The introduction of innovative, biologically safe, and efficient pharmaceuticals is essential for living an eco-friendly lifestyle. The presence of phytochemicals in *Sida rhombifolia* L., raises the possibility that the plant may be a source of ideas that could result in the creation of novel therapies. To characterise the chemical structure, assess the biological activities, and conduct a full analysis that includes qualitative or semi-qualitative analysis, further research is still required in this field. For this valuable plant species to be used effectively in medicine and pharmaceutical sciences, its full potential must be explored.

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സ്ത്രീസ്വതാവിഷ്കാരം - കെ.ആർ. മീരയുടെ 'മീരാസാധു' എന്ന നോവലിൽ

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പ്രബന്ധസംഗ്രഹം

ഫെമിനിസം അല്ലെങ്കിൽ സ്ത്രീവാദം ഇന്ന് വിപുലമായി വിനിമയം ചെയ്യപ്പെടുന്നൊരു പദമാണ്. സ്ത്രീസ്വാതന്ത്ര്യത്തിന്റെയും അവകാശത്തിന്റെയും സൂചകമായിട്ട് ഫെമിനിസം എന്ന പദത്തെ വിലയിരുത്തുന്നുണ്ടെങ്കിലും സ്ത്രീജീവിതത്തോടും അനുഭവത്തോടും സംസ്കാരത്തോടും പ്രവൃത്തികളോടും അത് വളരെയേറെ ബന്ധപ്പെട്ടു നിൽക്കുന്നുണ്ട്. ഈ പ്രസ്ഥാനത്തിന്റെ നിരുപണശാഖയാണ് ഫെമിനിസ്റ്റ് സാഹിത്യസിദ്ധാന്തം. സമൂഹത്തിലും സാഹിത്യത്തിലും സ്ത്രീയുടെ സ്ഥാനം, സ്വാതന്ത്ര്യം, അവകാശങ്ങൾ എന്നിവയ്ക്കെല്ലാം ഫെമിനിസം പ്രാധാന്യം നൽകുന്നു. പുരുഷന്റെ കൃത്രിമതയായിരുന്ന സാഹിത്യത്തിൽ പുരുഷനിർവചനങ്ങൾക്കുള്ളിൽ അകപ്പെട്ടുപോയിരുന്ന സ്ത്രീത്വത്തെക്കുറിച്ചും ആദർശാത്മകപരിവേഷങ്ങളിൽ അവതരിപ്പിക്കപ്പെട്ട പുരുഷസ്വത്വത്തെയും യാഥാർത്ഥ്യത്തിൽ നിന്ന് അകലെയൊന്നെന്നും സ്ത്രീകൾ പുരുഷന്റെ പൊയ്മുഖങ്ങൾ തിരിച്ചറിയുന്നതിനോടൊപ്പം സ്വയം തിരിച്ചറിയപ്പെടേണ്ടതുണ്ടെന്നും സമൂഹത്തെ ബോധ്യപ്പെടുത്തുകയായിരുന്ന സ്ത്രീപക്ഷ എഴുത്തുകാരികൾ.

എഴുത്തുകാരികൾ

സമകാലികസാഹിത്യത്തിൽ ഏറെ ചർച്ച ചെയ്യപ്പെടുന്ന ഉത്തരാധുനിക എഴുത്തുകാരിയാണ് കെ.ആർ. മീര. മീരയുടെ 'മീരാസാധു' എന്ന നോവലിനെ സ്ത്രീവാദത്തിന്റെ അടിസ്ഥാനത്തിൽ പഠനവിധേയമാക്കാൻ സാധിക്കുമോ എന്ന അന്വേഷണമാണ് “സ്ത്രീസ്വതാവിഷ്കാരം -

കെ.ആർ. മീരയുടെ 'മീരാസാധു' എന്ന നോവലിൽ'' എന്ന പ്രബന്ധത്തിലൂടെ നടത്തുന്നത്.

സ്ത്രീ എന്നെന്നും അവളുടെ സ്വത്വം എന്നെന്നും തിരിച്ചറിഞ്ഞ് അത് സമൂഹത്തെ ബോധ്യപ്പെടുത്താനും പുരുഷന്റെ കടന്നാക്രമണങ്ങളോട് പ്രതിഷേധിക്കാനും പ്രതികരിക്കാനും സ്ത്രീയെ പ്രാപ്തയാക്കുകയാണ് സ്ത്രീപക്ഷസാഹിത്യങ്ങൾ. സ്ത്രീയനുഭവങ്ങൾക്ക് മേലുള്ള സ്ത്രീയുടെ കാഴ്ചപ്പാടുകൾക്ക് പ്രസക്തിയേറുന്ന ആധുനികാനന്തരതയിൽ സ്ത്രീയുടെ ഉടലെടുത്ത് പുരുഷാധിപത്യ സങ്കല്പങ്ങളോടുള്ള നിരാകരണമാണ്. മലയാളസാഹിത്യത്തിൽ ആധുനികഭാവങ്ങൾ കണ്ടെത്തിക്കൊണ്ടിരിക്കുന്ന കെ.ആർ. മീരയുടെ കൃതികളിലെല്ലാം നിറഞ്ഞു നിൽക്കുന്നത് സ്ത്രീസ്വത്വത്തിന്റെ മുഴുവൻ ആധികളാണ്.

ഉത്തരാധുനിക എഴുത്തുകാരിയായ കെ.ആർ. മീരയുടെ 'മീരാസാധു' എന്ന ലഘുനോവൽ ഭദ്രമായ രൂപശില്പവും സാർവ്വജനീനമായ ജീവിതാനുഭവങ്ങളുടെ ആവിഷ്കരണവും കൊണ്ട് വ്യത്യസ്തത പുലർത്തുന്നു. 'തുള്ളസി' എന്ന അതിശക്തമായ നായികാകഥാപാത്രത്തെ മുൻനിർത്തി, സ്ത്രീസമൂഹം അനുഭവിക്കുന്ന സംഘർഷങ്ങളും അതിനോടുള്ള അവരുടെ പ്രതികരണങ്ങളുമാണ് അവതരിപ്പിക്കാൻ ശ്രമിക്കുന്നത്. 'മീരാസാധു' എന്ന നോവലെറ്റിനെ അടിസ്ഥാനമാക്കി, സ്ത്രീസ്വത്വാവിഷ്കാരത്തെക്കുറിച്ചുള്ള പഠനമാണ് ഈ പ്രബന്ധത്തിലൂടെ ലക്ഷ്യമാക്കുന്നത്.

മനുഷ്യന്റെ മാനസികവും വൈകാരികവും കായികവുമായ സൂക്ഷ്മാംശങ്ങൾ ആവിഷ്കരിക്കുന്നതാണ് സാഹിത്യം. മർദ്ദിതരും പീഡിതരുമായ സാധാരണ ജനങ്ങളുടെ ചിത്രമായിരുന്നു വിശ്വസാഹിത്യം മുതൽ അനുവാചകരെ കൂടുതൽ ആകർഷിച്ചത്. സ്ത്രീവർഗ്ഗം, അടിമകൾ, ദളിതർ തുടങ്ങിയ ഏതൊരു പീഡിതവർഗ്ഗവും ആശ്രയം കണ്ടെത്തുന്നത്, സാഹിത്യകൃതികളിലാണ്. അതിൽ ഏറ്റവും പ്രധാനം സ്ത്രീതന്നെയാണ്. തന്റെ അവഗണിക്കപ്പെടുന്ന വ്യക്തിത്വത്തിനും ആത്മാഭിമാനത്തിനും വേണ്ടി നിരന്തരം പോരാടുന്ന സ്ത്രീകഥാപാത്രങ്ങളെ തുടക്കം മുതൽ സാഹിത്യത്തിൽ കാണാൻ സാധിക്കും.

സ്ത്രീകളെക്കുറിച്ച് നിലനിൽക്കുന്ന മൂല്യരഹിതമായ ധാരണകളെ എതിർക്കുന്ന വ്യത്യസ്തമായൊരു കാഴ്ചപ്പാടാണ് ഫെമിനിസം. നിരന്തരമായ പരാമർശങ്ങൾ കൊണ്ട് വിധേയമായ ഒരു ചിന്താപദ്ധതിയാണിത്.

സ്ത്രീസമൂഹത്തെ പുരോഗതിയുടെ വെളിച്ചത്തിലേക്ക് കൊണ്ടുവരിക എന്നതായിരുന്നു ഫെമിനിസത്തിന്റെ ലക്ഷ്യം. സമൂഹം സ്ത്രീകൾക്ക് ഏർപ്പെടുത്തിയ നിയന്ത്രണങ്ങളിൽ നിന്നും നിയമങ്ങളിൽ നിന്നും പുറത്തുക്കടക്കാനുള്ള വെമ്പലുണ്ടായതിന്റെ ഫലമായാണ് ഫെമിനിസം എന്ന ആശയം രൂപപ്പെട്ടത്. 'ഫെമിനിസ്റ്റ്' എന്ന പദം 'തന്റെ സ്വാതന്ത്ര്യം പടപൊരുതി തിരിച്ച് പിടിക്കാൻ കെൽപ്പുള്ളവൾ' എന്ന അർത്ഥത്തിൽ ആദ്യമായി പ്രയോഗിച്ചു കണ്ടുന്നത് 1895 ഏപ്രിൽ 25-ാം തീയതി പ്രസിദ്ധീകരിച്ച 'അമിനീയം' എന്ന ആനുകാലികത്തിലാണ്. ലിംഗസമത്വത്തിന്റെ അടിസ്ഥാനത്തിൽ സ്ത്രീകളുടെ അവകാശത്തിനുവേണ്ടിയുള്ള വാദം എന്നാണ് ഓക്സ്ഫോർഡ് ഇംഗ്ലീഷ് ഡിഷണറി ഫെമിനിസത്തെ നിർവചിക്കുന്നത്.

ഫെമിനിസം അഥവാ സ്ത്രീവാദം വിപുലമായി വിനിമയം ചെയ്യപ്പെടുന്ന ഒരു പദമാണ്. സ്ത്രീസ്വാതന്ത്ര്യത്തിന്റെയും അവകാശത്തിന്റെയും സൂചകമായി ഫെമിനിസം എന്ന പദത്തെ വിലയിരുത്തുന്നുണ്ടെങ്കിലും സ്ത്രീജീവിതത്തോടും അനുഭവത്തോടും സംസ്കാരത്തോടും പ്രവൃത്തികളോടും അത് വളരെ ബന്ധപ്പെട്ടു നിൽക്കുന്നുണ്ട്. യഥാർത്ഥത്തിൽ അടിച്ചമർത്തപ്പെട്ട സ്ത്രീവിഭാഗത്തെ ഉയർത്തേഴുന്നേൽപ്പിച്ച കാഹളമാണ് ഫെമിനിസം. സ്ത്രീയുമായി ബന്ധപ്പെട്ട എല്ലാ പ്രവൃത്തികളും അവസ്ഥകളും പാർശ്വവൽക്കരിക്കപ്പെടുന്നു. ഇവയോടൊക്കെയും കലാപത്തിൽ നിന്നുമാണ് ഫെമിനിസത്തിന്റെ ഉത്ഭവം എന്നു പറയാം. പുരുഷാധിപത്യലോകത്തുനിന്നും സ്ത്രീയെ സ്വതന്ത്രരാക്കുകയും സമൂഹത്തിൽ സ്ത്രീയുടെ സ്വത്വം സ്ഥാപിക്കുകയുമായിരുന്നു ഫെമിനിസത്തിന്റെ പരമമായ ലക്ഷ്യം.

യഥാർത്ഥത്തിൽ, പുരുഷനോടല്ല, പുരുഷാധിപത്യവ്യവസ്ഥകളോടാണ് ഫെമിനിസ്റ്റുകൾ പോരുതുന്നത്. പുരുഷാധിപത്യത്തെ ഉന്മൂലനം ചെയ്ത് ആ സ്ഥാനത്ത് സ്ത്രീയെ പ്രതിഷ്ഠിക്കുകയല്ല മറിച്ച്, ആണും പെണ്ണും എന്ന ലിംഗവിവേചനമില്ലാതെ മനുഷ്യനായി മാത്രം കാണുന്ന ഒരു പുതിയ ലോകത്തെയാണ് ഫെമിനിസം വിഭാവനം ചെയ്യുന്നത്. തങ്ങൾക്ക് അനുഭവിക്കേണ്ടിവരുന്ന നിഷേധങ്ങൾക്കും അസ്വാതന്ത്ര്യത്തിനും എതിരെ പ്രതികരിച്ചുകൊണ്ടാണ് സ്ത്രീ തന്റെ സ്വത്വം നിർണ്ണയിക്കുന്നത്.

കെ.ആർ. മീരയുടെ കൃതികളിലെ സ്ത്രീപക്ഷചിന്ത

ഉത്തരാധുനികതയുടെ ആഖ്യാനപരിസരങ്ങളിൽ നിന്നുകൊണ്ട് സമകാലീന സാമൂഹിക സാംസ്കാരിക ഇടങ്ങളെ ശക്തമായ ഭാഷയിൽ ആവിഷ്കരിക്കുന്ന മലയാളസാഹിത്യത്തിലെ ശ്രദ്ധേയമായ എഴുത്തുകാരിയാണ് കെ.ആർ.മീര, സ്ത്രൈണത, ലൈംഗികത, ശരീരം എന്നിവയെക്കുറിച്ചുള്ള സ്ത്രീയുടെ സ്വതന്ത്രമായ കാഴ്ചപ്പാടുകൾ മീരയുടെ രചനകളിൽ ആവിഷ്കരിക്കപ്പെടുന്നു. പുരുഷനോടുള്ള എതിർപ്പുകൾക്കും സമരസപ്പടലുകൾക്കുമപ്പുറം സ്വന്തം സ്വത്വം ഉറപ്പിച്ചെടുക്കുന്ന ഉൾക്കരുത്താർന്ന സ്ത്രീകഥാപാത്രങ്ങളെയാണ് അവരുടെ കൃതികളിൽ കാണുവാൻ സാധിക്കുന്നത്. ഭാവാത്മകതയും വൈകാരികാനുഭൂതിയുമാണ് മീരയുടെ എഴുത്തിനെ ആകർഷകമാക്കുന്നത്. പ്രണയം, ഏകാന്തത, കാത്തിരിപ്പ്, സമകാലിക സാമൂഹികാവസ്ഥകൾ, മതം, സ്ത്രീസ്വകാര്യതകൾ, സ്ത്രീപുരുഷ വീക്ഷണവിപര്യങ്ങൾ എന്നിങ്ങനെ ഒരേ സമയം ലളിതവും ആർജ്ജവമാർന്ന വിഷയങ്ങൾ അവരുടെ കഥാപരിസത്തെ ബഹുസ്വരമാക്കുന്നു. സ്ത്രീത്വത്തിന്റെ സംഘർഷങ്ങളും പ്രതിസന്ധികളും പുതുമുറ്റാണ്ടിന്റെ മൂല്യച്യുതികളും പങ്കുവയ്ക്കുന്ന മീരയുടെ കഥകളും നോവലുകളും പ്രകോപനപരമായ ഉള്ളടക്കങ്ങൾ ആലേഖനം ചെയ്യുന്നു.

സ്ത്രീയനുഭവങ്ങൾക്ക് മേലുള്ള സ്ത്രീയുടെ കാഴ്ചപ്പാടുകൾക്ക് പ്രസക്തിയേറുന്ന ആധുനികാനന്തരതയിൽ സ്ത്രീയുടെ ഉടലെഴുത്ത് പുരുഷാധിപത്യസങ്കല്പങ്ങളോടുള്ള നിരാകരണമാണ്. പുരുഷവീക്ഷണങ്ങളെക്കൂടി അംഗീകരിച്ചുകൊണ്ടും ഉൾക്കൊണ്ടുമുള്ള രചനാരീതിയിൽ സ്ത്രീയുടെ വിധേയത്വമനോഭാവത്തിനു പിന്നിൽ മറച്ചുവയ്ക്കപ്പെട്ടിരിക്കുന്ന ഉൾക്കരുത്തിന്റെ പ്രോജക്ഷനതയെയാണ് മീര തന്റെ കഥാപാത്രങ്ങളിലൂടെ ആവിഷ്കരിക്കുന്നത്.

സ്ത്രീസ്വത്വാവിഷ്കാരം - മീരാസാധു എന്ന നോവലിൽ

പ്രണയം, വിവാഹം, കുടുംബം, സദാചാരം തുടങ്ങിയവയെ സ്ത്രീപക്ഷത്തുനിന്ന് വീക്ഷിക്കുകയാണ് 'മീരാസാധു' എന്ന ലഘുനോവലിലൂടെ കെ.ആർ. മീര ചെയ്യുന്നത്. സ്ത്രീയെക്കുറിച്ചുള്ള മിഥ്യാധാരണകൾക്ക് പിന്നിലെ യാഥാർത്ഥ്യങ്ങൾ വെളിപ്പെടുത്താനാണ് എഴുത്തുകാരി ഈ നോവലിലൂടെ ശ്രമിക്കുന്നത്. സ്വന്തം ഉത്തരവാദിത്വങ്ങൾക്ക് പുറമേ മനസ്സിന്റെ ആഗ്രഹങ്ങൾക്കും സ്വപ്നങ്ങൾക്കുമനുസരിച്ച് ജീവിക്കാനുള്ള

സ്വാതന്ത്ര്യം സ്ത്രീക്കുമുണ്ട് എന്ന സത്യാവസ്ഥ വെളിവാക്കുന്ന രചനയാണ് 'മീരാസാധു'. ആസക്തിയും പ്രണയവും ഭക്തിയും കമ്പോളവൽക്കരണവും പുരാവൃത്തവും മിത്തുകളും ഇതിൽ നിറഞ്ഞുനിൽക്കുന്നു. തുളസി എന്ന കേന്ദ്രകഥാപാത്രത്തെ മുൻനിർത്തിക്കൊണ്ട്, വൃന്ദാവനത്തിലെ പതിനായിരത്തോളം വരുന്ന അഗതികളായ സ്ത്രീജീവിതങ്ങൾ അനുഭവിക്കേണ്ടിവരുന്ന പീഡനങ്ങളും ദുരിതങ്ങളുമാണ് ഈ നോവലിൽ പ്രതിപാദിച്ചിരിക്കുന്നത്.

വൃന്ദാവനം എന്നു കേൾക്കുമ്പോൾ ശരാശരി ഭാരതീയന്റെ മനസിലുണരുന്ന കാൽപ്പനിക മനോഹരവും ഭക്തിനിർഭരവുമായ ചില ചിത്രങ്ങളുണ്ട്. നമ്മുടെയെല്ലാം ഭാവനകളിലെ സങ്കല്പചിത്രങ്ങളെയെല്ലാം തകർത്ത് തരിപ്പണമാക്കിക്കൊണ്ടാണ്, കെ.ആർ. മീര ഐ.ഐ.ടി യിൽ നിന്ന് ഒന്നാം റാങ്കോടെ ബിരുദമെടുത്ത തുളസി, വൃന്ദാവനത്തിലെ അഗതികളായ മീരാസാധുക്കളിൽ ഒരുവളായതെങ്ങനെയെന്ന് അവതരിപ്പിക്കുന്നത്. വൃന്ദാവനത്തിൽ അയ്യായിരത്തിലധികം ക്ഷേത്രങ്ങളും പതിനായിരത്തോളം അഗതികളായ സ്ത്രീകളുമുണ്ട്. വെള്ളസാരിയുടുത്ത്, തലമുണ്ഡനംചെയ്ത്, രാപ്പകലില്ലാതെ കൃഷ്ണനെ ഭജിച്ച് ജീവിതം തള്ളിനീക്കുന്ന ഇവർ, ലൈംഗികചൂഷണങ്ങളിൽ നിന്നും കൊടിയദാരിദ്ര്യത്തിൽനിന്നും വിഭജനങ്ങളിൽ നിന്നും ഓടിപ്പോരേണ്ടിവന്നവരാണ്. ഇങ്ങനെ വ്യത്യസ്ത ഇടങ്ങളിൽ നിന്നും ജീവിതം നഷ്ടമായ സ്ത്രീകൾ നിവൃത്തികേടുകൊണ്ട് മീരാസാധുക്കളുടെ വേഷമണിഞ്ഞ് ജീവിതം തള്ളിനീക്കുന്നു. വൃന്ദാവനത്തിലെ അഗതികളായ വിധവകൾ മാത്രമാണവർ. ദർശ്യമതികളും കന്യകമാരും ഇവിടെ രാധാമയിമാരാണ്. ജീവിതസൗഭാഗ്യങ്ങൾ വലിച്ചെറിഞ്ഞ്, മീരാസാധുവാകാൻ തീരുമാനിച്ച തുളസി അതിശക്തമായ നായികാകഥാപാത്രമാണ്. "എനിക്ക് രാധയാകണ്ട, മീരയായാൽമതി. രാധ പതിനായിരത്തിൽ ഒരുവൾ മീര ഒന്നേയുള്ളൂ." അതാണ് മീരാസാധുവിന്റെയും കരുത്ത്. ഉപേക്ഷിക്കപ്പെട്ടവളുടെ വേദന പകയായ് മാറുമ്പോൾ അതിന് കാളകൂടത്തേക്കാൾ വീര്യമുണ്ടാവുമെന്ന് മീരാസാധുവിലൂടെ കാട്ടിത്തരികയാണ് കെ.ആർ. മീര.

കീഴടങ്ങി നിൽക്കുമ്പോൾ തോൽക്കാത്തവരും പൊരുതുമ്പോൾ പൂർണ്ണമായി ജയിക്കാത്തവരുമായ സ്ത്രീകളുടെ നീണ്ടനിര മീരയുടെ കഥാലോകത്തുണ്ട്. അത്തരത്തിലുള്ള സ്ത്രീകഥാപാത്രമാണ് തുളസിയും. പുരുഷാധിപത്യത്തിന്റെ പരിധിക്കുള്ളിൽ താമസിക്കുന്ന എല്ലാ സ്ത്രീകളെയും അവൾ പ്രതിനിധീകരിക്കുന്നു. എട്ടുവർഷമാത്രം നീണ്ടുനിന്ന

ദാവത്യം അവളുടെ സിരകളിൽ വിഷവും പകയും നിറയ്ക്കുന്നു. വൃന്ദാവനത്തിലെ മീരാസാധുവാകുന്ന തുളസിയെത്തേടി പന്ത്രണ്ട് വർഷങ്ങൾക്ക് ശേഷം ഭർത്താവ് മാധവൻ എത്തുമ്പോൾ സ്വയം പീഡിപ്പിച്ച് വേദനിപ്പിക്കുന്ന തുളസി, തന്റെ പ്രതികാരം പൂർത്തിയാക്കുന്നത് ഭിക്ഷാപാത്രം അയാളുടെ മുന്നിലേക്ക് നീട്ടുകൊണ്ടായിരുന്നു. അയാൾ തളർന്ന് നിലം നിലംപതിക്കുമ്പോൾ ആത്മസംതൃപ്തിയോടെ തന്റെ താമസസ്ഥലത്തേയ്ക്കു മടങ്ങുന്നു.

ഐ.ഐ.ടി. യിലെ റാങ്ക് ഹോൾഡറായ തുളസി സമ്പന്നകുടുംബത്തിലെ അംഗവും കേരളത്തിലെയൊരു ഐ.ജി. യുടെ മകളുമാണ്. നേരത്തേപരിചയമുള്ള സുഹൃത്ത്, വിനയനുമായി നിശ്ചയിച്ചുറപ്പിച്ച വിവാഹത്തലേന്ന് തന്റെ കൂടെ ഇറങ്ങിവരുമ്പിടം അവളുടെ മനസ്സിനെ ആകർഷിക്കാൻ മാധവൻ കഴിഞ്ഞിരുന്നു. കൃഷ്ണനെപ്പോലെ ഇരുപത്തിയേഴു കാമുകിമാർ അയാളുടെ ജീവിതത്തിൽ വന്നിട്ടുണ്ടെന്നറിഞ്ഞിട്ടും, അവൾ മാധവനെ തന്നെ വിവാഹം ചെയ്യാൻ തീരുമാനിക്കുന്നു. തുളസിയെപ്പോലെ നിശ്ചയദാർഢ്യമുള്ളവരായിരുന്നില്ല മറ്റ് ഇരുപത്തിയേഴ് കാമുകിമാരും. അവരിലൊരാൾ പോലും മരണപര്യന്തം വരെ അയാളെ മാത്രം ധ്യാനിച്ചുകഴിയുമെന്നും മാധവൻ വിശ്വാസം ഉണ്ടായിരുന്നില്ല. അതുകൊണ്ട് മാത്രമാണ് തുളസിയെ വിവാഹം ചെയ്യാൻ അയാൾ തീരുമാനിക്കുന്നത്. എത്ര കാമുകിമാർ വന്നുപോയാലും തുളസി മാത്രമാണ് എന്റെ സ്ത്രീ എന്ന മാധവന്റെ പൊള്ളയായ വാക്കുകൾ അവൾ വിശ്വസിക്കുന്നത് മാധവനോടുള്ള ആത്മാർത്ഥമായ പ്രണയം മൂലമാണ്. സ്ത്രീയുടെ ഏറ്റവും വലിയ ബലഹീനത സ്നേഹമാണ്. അതുകൊണ്ടാണ് തുളസി വിനയനിൽ നിന്നും മാധവനിലേക്ക് ചേക്കേറിയത്.

പ്രണയത്തിന് ശാരീരികവും മാനസികവുമായ തലം മാത്രമല്ല ദിവ്യവും നിഗൂഢവുമായ തലം കൂടി നൽകുന്നു. മാധവനുമായുള്ള ദാവത്യജീവിതം തുടക്കത്തിൽ മധുരമുള്ളതായിരുന്നു. മധുവിധുവിന്റെ ആദ്യദിനങ്ങളിൽ ഒരു സ്ത്രീയെ എങ്ങനെയൊക്കെ ആനന്ദിപ്പിക്കാമെന്ന് അവൾക്ക് അയാൾ കാട്ടിക്കൊടുത്തു. രതി ഒരനുഷ്ഠാനമായിരുന്ന മാധവന്റെ നെഞ്ചിൽ തുവൽപോലെ അവൾ വാടിക്കിടന്നു. അയാളുടെ സാമീപ്യത്താൽ, നോട്ടം കൊണ്ട് സുന്ദരിയും സ്പർശം കൊണ്ട് ദേവതയുമായെന്ന് പലപ്പോഴും അനവൾക്ക് അനുഭവപ്പെട്ടു. സ്നേഹിക്കപ്പെടാത്തവരും സ്നേഹിക്കാത്തവരുമായ സ്ത്രീകളെക്കുറിച്ചും സ്നേഹമറിയാത്ത സ്ത്രീകൾ പ്രസവിച്ച കുട്ടികളെക്കുറിച്ചോർത്തും അവൾ ദുഃഖിച്ചു.

എന്നാൽ സ്വന്തം വാൽ വിഴുങ്ങിയ സർപ്പത്തെപ്പോലെയാണെന്നു അവളുടെ പ്രേമം. സ്വയം വായിലാക്കാൻ ശ്രമിച്ച് അതു വട്ടംകറങ്ങി. മാധവന്റെ ജീവിതത്തിലേക്ക് ഇരുപത്തിയേഴ് കാമുകിമാർക്കുശേഷം എത്തിയ തുളസി, താനാണയാളുടെ അവസാനലക്ഷ്യമെന്നു വിശ്വസിച്ചു. പക്ഷേ അവൾ രണ്ടു കുഞ്ഞുങ്ങളുടെ അമ്മയാവുന്നതിനിടെ മാധവന്റെ ജീവിതത്തിൽ ഒരു യുവനടിയും അവർക്ക് പിന്നാലെ ഒരു രാഷ്ട്രീയനേതാവും ഒരു പ്രതപ്രവർത്തകയും പിന്നാലെ ഒരു ചാനൽ അവതാരകയും ഒടുവിലൊരു നർത്തകിയും പ്രവേശിച്ചു കഴിഞ്ഞിരുന്നു. തുളസിയുടെ പരിഭവങ്ങളും പ്രതിഷേധങ്ങളും മാധവൻ അസൂയയെന്ന് ചിരിച്ചുതള്ളി. തന്റെ വിധിയെ പഴിച്ച് രണ്ട് മക്കളുമായി അയാൾക്കൊപ്പം കഴിഞ്ഞുകൂടാനേ അവൾക്ക് നിവൃത്തിയുണ്ടായിരുന്നുള്ളൂ. ശാരീരികമോ വൈകാരികമോ ആയ മോശംബന്ധത്തിൽ കുടുങ്ങിയ സാധാരണ സ്ത്രീയുടെ പ്രതിനിധിയാണ് തുളസി. അവൾ ഉയർത്തുന്ന ഓരോ പ്രതിഷേധവും, ശാന്തമായ വാക്കുകളാൽ അയാൾ നിശബ്ദമാക്കുന്നു. വ്യക്തമായ തെളിവുകളുടെ പശ്ചാത്തലത്തിൽ പോലും അയാൾ സ്നേഹിക്കുന്ന ഒരേയൊരു സ്ത്രീ താനാണെന്ന് വിശ്വസിക്കാൻ അവൾ ആഗ്രഹിക്കുന്നു. ഒരിക്കലും തന്റെ വിധിയെ ഓർത്ത് അവൾ കണ്ണുനീർ പൊഴിക്കുന്നില്ല.

ഗാർഹികാന്തരീക്ഷത്തിന്റെ നാലുചുവരുകൾക്കുള്ളിൽ ജീവിക്കുന്ന സ്ത്രീക്ക് തനതായ വ്യക്തിത്വമുണ്ടെന്ന് അംഗീകരിക്കാൻ പുരുഷലോകം തയ്യാറാകുന്നില്ല. ഐ.ഐ.ടി. യിൽ നിന്ന് ഒന്നാംറാങ്കോടെ ബിരുദമെടുത്ത തുളസി, മാധവന്റെ എല്ലാ ആവശ്യങ്ങളും നിർവഹിക്കുകയും അയാളുടെ കുട്ടികളെ പോറ്റുകയും ചെയ്യുന്ന വീട്ടമ്മയായി മാറുന്നു. ഇന്ത്യയ്ക്ക് അഭിമാനമാകേണ്ട ബ്രയിനും ഒരുപക്ഷേ ഭാവിയിലെ ഒരു നോവൽ ജേതാവുമാകേണ്ടവളാണ് തുളസിയെന്ന് പറഞ്ഞ മാധവൻ തന്നെ വിവാഹശേഷം അവളെ നാലുചുവരുകൾക്കുള്ളിൽ തളച്ചിടുന്നു. ആ ജീവിതം അവൾ സ്വയം അംഗീകരിക്കുന്നുണ്ട്. സാമ്പത്തികസ്വാതന്ത്ര്യത്തിന്റെയോ കുടുംബപിന്തുണയുടെയോ അഭാവത്തിൽ അവൾക്ക് മുന്നിൽ കൂടുതൽ മാർഗ്ഗങ്ങളുണ്ടായിരുന്നില്ല. ആദ്യകാലത്ത്, അയാളുടെ പരസ്ത്രീബന്ധങ്ങളെ ചോദ്യം ചെയ്യുമ്പോൾ ഭ്രാന്തുപിടിപ്പിക്കുന്ന സ്നേഹലാളനുകളും രതിസുഖവും കോരിച്ചൊരിഞ്ഞ് അവളുടെ സംശയങ്ങളെ ഇല്ലാതാക്കാൻ ശ്രമിക്കുന്നു. അതേ സമയം ഡൽഹിയിലെ മിടുക്കനായ ജേണലിസ്റ്റായി മാധവൻ വളർന്നു കഴിഞ്ഞിരുന്നു. പണം, പ്രശസ്തി, ചാനലിലേക്കുള്ള മാറ്റം അതോടൊപ്പം അനവധി സ്ത്രീകളെയും

അയാൾ സമ്പാദിച്ചിരുന്നു. തുളസിയും മകനും വിസ്മയത്തോടെയായിരിക്കാണ്ടിരുന്നു. പിണക്കവും പരിഭവവും ശകാരവും മാധവനെ കൂടുതൽ അകലെയാക്കുകയും വീട്ടിലേക്കുള്ള വരവു തന്നെ വല്ലപ്പോഴുമാവുകയും ചെയ്തു. നിത്യച്ചിലവിനുപോലും പണം തികയാതെവന്ന ഘട്ടത്തിൽ, പൂർണ്ണഗർഭിണിയായ തുളസി ഉപേക്ഷിക്കപ്പെട്ടവളും വിവരം കെട്ടവളും വിരുപയുമായി ഭർത്താവിനെ അന്വേഷിച്ചു പോകുന്നുണ്ട്. അവനെക്കുറിച്ചുള്ള മതിപ്പായിരുന്നു അവളുടെ ആത്മവിശ്വാസം. പക്ഷേ അവളെ കണ്ട മാത്രയിൽ ഒരു അകന്നബന്ധുവിനെപ്പോലെ പെരുമാറിയതും ജാത്യതയോടെ ചിരിച്ചതും അവളുടെ അഭിമാനത്തെയാണ് മുറിപ്പെടുത്തിയത്.

ഡൽഹിയിലെ ഫ്ളാറ്റിന്റെ കിടപ്പറയിൽ മാധവന്റെ കാമുകിമാരുടെ പ്രേമലേഖനങ്ങൾക്കിടയിൽ ശവം തീനിയുറുമ്പുകൾ അരിച്ചുകൊണ്ടിരുന്ന കറുത്തപാമ്പിന്റെയും അത് പാതിവിഴുങ്ങിയ ചുണ്ടെലിയുടെയും ചിത്രം തുളസിയുടെയും മാധവന്റെയും പ്രണയബന്ധത്തിന്റെയും അതിന്റെ പരിണതിയുടെയും രൂപങ്ങളായി മാറുന്നു. ഈ വിഴുങ്ങിക്കൊണ്ടിരിക്കെ ചത്തുപോകുന്ന അവസ്ഥ. ഗർഭിണിയും ഏകാകിയുമായിരുന്ന വേളയിൽ ആ കാഴ്ച അവളിൽ ഉണ്ടാക്കിയ മനഃസംഘർഷം വളരെ വലുതായിരുന്നു. മാധവന്റെ കൊടിയ അവഗണന സഹിക്കാനാകാതെ, അച്ഛൻ ക്ഷമാപണം ചോദിച്ച് കത്തെഴുതുകയും അദ്ദേഹം അവളെ നാട്ടിലേക്ക് കൊണ്ടുപോവുകയും ചെയ്യുന്നുണ്ട്. പ്രസവശേഷം പൊള്ളയായ സ്നേഹം അഭിനയിച്ച് മാധവൻ അവളെ വീണ്ടും ഡൽഹിയിലേക്ക് കൂട്ടിക്കൊണ്ട് പോകുന്നതോടെ അവളുടെ ജീവിതം വീണ്ടും ഉറുമ്പരിച്ചു തുടങ്ങിയിരുന്നു. അറിവും വിദ്യാഭ്യാസവും കഴിവുകളും സമൂഹത്തിൽ മാനുഷമായ സ്ഥാനവുമുള്ള സ്ത്രീകൾ പോലും ദാമ്പത്യം എന്ന തടവറയ്ക്കുള്ളിൽ അകപ്പെട്ടുപോകുന്നതിന് മുഖ്യകാരണം അവളുടെ അധികാരി എന്ന ബോധം പുലർത്തുന്ന പുരുഷനാണ്.

സ്ത്രീയുടെ മനസ്സിനെയോ വിചാരങ്ങളെയോ പരിഗണിക്കാതെ അവളെപ്പോലും പുരുഷന്റെ നിഴലാണെന്ന തോന്നൽ ഉളവാക്കുന്ന ഒരു സാമൂഹിക സ്ഥാപനമാണ് കുടുംബം. അവിടെ സ്ത്രീയെ വെറുമൊരു ശരീരം മാത്രമായി കാണുന്ന പുരുഷപ്രതിനിധിയാണ് മാധവൻ. അയാളുടെ പരസ്ത്രീബന്ധങ്ങളെ പ്രതിഷേധത്തോടെയാണെങ്കിലും അതെല്ലാം സഹിച്ച് തുളസി അവനോടൊപ്പം കഴിയുന്നത് അയാളോടുള്ള ആത്മാർത്ഥമായ പ്രണയം മൂലമാണ്. ഒടുവിൽ തന്റെ ഭർത്താവ് മറ്റൊരു സ്ത്രീയെ ഗർഭിണിയാക്കുകയും നിർബന്ധിച്ച് ഗർഭം അലസിപ്പിക്കു

കയും ചെയ്ത വാർത്ത നിർവികാരതയോടെ കേട്ടിരിക്കുന്ന തുളസി അയാളോട് കലഹിക്കുന്നുണ്ട്. അവിടെയും തന്റെ ഭാഗത്തെ ന്യായീകരിക്കുന്ന മാധവൻ, അവളാണ് തന്നെ ഉപയോഗിച്ചതെന്ന മറുപടിയാൽ അതിനെയും നിസ്സാരവൽക്കരിക്കുകയാണ്. സ്ത്രീയുടെ സ്ത്രൈണത എന്ന കല്പന സമൂഹം നിർമ്മിച്ചു കൊടുക്കുന്നതാണ്. സമൂഹം കേന്ദ്രീകൃതമാകുമ്പോൾ സ്ത്രീയുടെ സ്ത്രൈണതയ്ക്ക് നിർവ്വചനം കൊടുക്കുന്നതും സമൂഹം തന്നെയാണ്. ഓരോ സാഹചര്യത്തിലും എങ്ങനെ പെരുമാറണമെന്ന് പോലും പുരുഷൻ നിർണ്ണയിക്കുന്നു. ലൈംഗികതയെ കുറിച്ച് ആൺകോയ്മാസമൂഹങ്ങൾ സൃഷ്ടിക്കുന്ന മൂല്യമണ്ഡലം വ്യക്തികളുടെ സാമൂഹ്യവിന്യാസത്തിലെ ഉച്ചനീചത്വങ്ങൾക്ക് നിർണ്ണായകഘടകമാകുന്നു.

സ്ത്രീകേന്ദ്രീകൃതമായ മീരയുടെ കഥകളിലെല്ലാം പുരുഷൻ വിമർശനം അർഹിക്കുന്ന ഉടൽ മാത്രമാണ്. പുരുഷന്റെ ലൈംഗികതൃഷ്ണ ശമിപ്പിക്കുന്നതിനുള്ള ഒരുപകരണംമാത്രമാണ് സ്ത്രീ എന്ന ചിന്താഗതിക്കാരനാണ് മാധവൻ. എന്നാൽ സ്വന്തം ജീവിതത്തിലൂടെ സ്ത്രീസൗന്ദര്യം ശരീരത്തിനല്ല മനസ്സിനാണ് വേണ്ടതെന്ന് തുളസി അയാളെ പഠിപ്പിക്കുന്നുണ്ട്. “കനച്ചുനാറുന്ന സാരിയും പഴകിയ അടിവസ്ത്രങ്ങളും അഴിച്ചുമാറ്റി, എല്ലാം തോലുമായ ശരീരം നഗ്നമാക്കി ഞാൻ അയാളുടെ മുന്നിൽ നിൽക്കും. ഇടിഞ്ഞുതൂങ്ങിയ മാറിടവും കുമ്പിടിച്ച പുറവും കൊഴുപ്പുരുകി ദയനീയമായ തുടകളും വിണ്ടുകീറിയ കാലുകളും ഞാൻ ലജ്ജയില്ലാതെ അനാവരണം ചെയ്യും. സൗന്ദര്യത്തിന്റെ അർത്ഥം ഞാനയാളെ പഠിപ്പിക്കും.” എന്നു പറയാൻ അവളെ പ്രേരിപ്പിച്ചത് അവളനുഭവിച്ച അപമാനവും അവഗണനയുമാണ്. ആൺവഞ്ചനയിൽ സ്വയം ജീവിതം നഷ്ടപ്പെടുത്തിയ അവൾ ഉടലും ഉയിരും കൊണ്ട് അതേ തീവ്രതയോടെ പക വീടുന്നു. തുളസിയുടെ ആത്മാർത്ഥപ്രണയം വൈകിയാണെങ്കിലും മാധവൻ തിരിച്ചറിയുന്നുണ്ട്. ഒരിക്കൽ സുന്ദരികളായ സ്ത്രീശരീരങ്ങളെ കാർന്നു തിന്ന മാധവൻ, തലമുണ്ഡനം ചെയ്ത്, എല്ലാം തോലുമായി പല്ലു കൊഴിഞ്ഞതും കണ്ണുകുഴിഞ്ഞതുമായ തുളസിയുടെ മുഖത്ത് പ്രേമത്തോടെ നോക്കുന്നു. തന്റെ തെറ്റുകൾക്ക് മാപ്പപേക്ഷിച്ച് മാധവൻ കേണിട്ടും അവൾ ചിത്തഭ്രമം ബാധിച്ച് ചിരിക്കുകയാണുണ്ടായത്. ജീവിതത്തിൽ നേടിയതെല്ലാം നഷ്ടപ്പെട്ട്, സ്ത്രോക്ക് വന്ന ഒരു വശം തളർന്ന മാധവൻ മടങ്ങിച്ചെല്ലാൻ കേണപേക്ഷിക്കുമ്പോൾ വിരൽ കുടിച്ചും മുഖം ചുളിച്ചും മരിച്ചുകിടക്കുന്ന മക്കളെയാണവൾ ഓർക്കുന്ന

ത്. സ്ത്രീകളെ അയാൾക്കിന്ന് ഭയമാണെന്ന് പറയുന്നതു കേട്ട് പൊട്ടിച്ചിരിക്കുന്ന അവൾ ഉന്മാദത്തിന്റെ ആനന്ദ നിർവൃതിയിൽ ചിന്തിക്കുന്നതിങ്ങനെയാണ് “മാധവൻ എന്റേതാണ്. ഞാൻ ഇനിയും അയാളെ പ്രേമിക്കും പകയോടെ പ്രേമിക്കും. പ്രേമം കൊണ്ട് പരാജയപ്പെടുത്തും. പവിത്രീകരിക്കും. ഒടുവിൽ അയാളെത്തന്നെ വിലയം പ്രാപിക്കും.” അവൾ നടത്തുന്ന പ്രതിഷേധങ്ങളും കലാപങ്ങളും കീഴടങ്ങാത്ത മനസ്സിന്റെ ബഹിർഗമനങ്ങളാണ്. ഒടുവിൽ ഗോവിന്ദദേവ ക്ഷേത്രത്തിന്റെ മുന്നാം നിലയിൽ ശവംതീനിയുറുമ്പുകളിൽ വലയം പ്രാപിച്ച് മരണത്തിനായി കാത്ത് കിടക്കുന്ന തുളസി പ്രതിഷേധത്തിന്റെയും പ്രതികാരത്തിന്റെയും പെൺരുപമാണ്.

കഥാപാത്രങ്ങൾക്ക് കഥാകാരി നൽകിയിരിക്കുന്ന പേരുകൾക്ക് സവിശേഷതയുണ്ട്. മാധവൻ പതിനായിരത്തെട്ട് ഭാര്യമാരുള്ള സാക്ഷാൽ ശ്രീകൃഷ്ണന്റെ നാമം തന്നെയാണ്. കൃഷ്ണന്റെ ഭക്തന്മാരിൽ അഗ്രേസരയായ തുളസീദേവിയുടെ നാമമാണ് നായികയ്ക്ക് നൽകിയിരിക്കുന്നത്. പ്രാണനാഥന്റെ പരസ്ത്രീബന്ധങ്ങളിലുള്ള ശക്തമായ പ്രതിഷേധം കേവലമൊരു വഴക്കിടലിലൊതുക്കാതെ അയാളോടുള്ള നിർവാജ്യമായ പ്രണയത്തെ അതിരുകഴമായ പകയുടെ രൂപത്തിലേക്കാക്കി മാറ്റുമ്പോൾ പുരാണങ്ങളിലെ നായികമാരിൽ നിന്നും തുളസി എന്ന മീരാസാധു തികച്ചും വ്യത്യസ്തയാകുന്നു.

ഇന്നത്തെ പെണ്ണിന്റെ അവസ്ഥകളെ ഫെമിനിസത്തിന്റെ അതിരുകൾക്കപ്പുറത്തേയ്ക്ക് കൊണ്ടുപോയി ആവിഷ്കരിക്കുകയാണ് കെ.ആർ. മീര. തന്റെ ജീവിതം നശിപ്പിച്ചവനോടുള്ള പകയും, ജീവിതകാലം എങ്ങനെയെങ്കിലും തള്ളിനീക്കണമെന്ന വിചാരവും, അപമാനബോധവും അതിന്റെ പരിണിതഫലമായുണ്ടായ ഏകാന്തവാസനയും കൊണ്ട് മൂടപ്പെട്ട കഥാപാത്രമാണ് ‘തുളസി’. പ്രണയത്തിന്റെ തീവ്രത എത്രയുണ്ടോ അത്രതന്നെ പകയുടെ പ്രതികാരവും ഇതിൽ നിറഞ്ഞു നിൽക്കുന്നു. പുതിയ ലോകത്തിലും കാലത്തിലും സ്ത്രീ അനുഭവിക്കേണ്ടി വരുന്ന വിവിധങ്ങളായ ജീവിതവ്യഥകളെ തീവ്രമായി ആവിഷ്കരിക്കുന്ന മീരയുടെ എഴുത്ത് ഓരോ പെണ്ണിനും ഇതു തന്റേതെന്നുതന്നെ എന്നു തോന്നിപ്പിക്കുന്ന തരത്തിലാണ്.

ഉപസംഹാരം

സാംസ്കാരികമേഖലകളിൽ നിന്നും വ്യവഹാരങ്ങളിൽ നിന്നും അന്യമാക്കപ്പെടുന്നു എന്ന തിരിച്ചറിവിലൂടെ തന്റെ വ്യക്തിത്വം സ്ഥാപിച്ചെടുക്കാൻ സ്ത്രീകൾ നടത്തിയ ആശയമാണ് ഫെമിനിസം. സാമൂഹികമായ ലിംഗവിവേചനത്തെ എതിർക്കുക എന്നതാണ് ഫെമിനിസ്റ്റ് ചിന്തയുടെ കാതലായ വശം. പുരുഷ മേൽക്കോയ്മയെ ചോദ്യം ചെയ്തുകൊണ്ട് സമൂഹത്തിൽ തങ്ങളുടേതായ ഒരു ഇടം ഉറപ്പിക്കുവാൻ സ്ത്രീകൾ മുന്നോട്ടിറങ്ങി. കേരളത്തിലും മറ്റ് സ്ഥലങ്ങളിലെന്നപോലെ ഫെമിനിസ്റ്റ് പ്രസ്ഥാനങ്ങൾ ശക്തിയാർജ്ജിക്കുകയും അതിന്റെ പ്രതിഫലനം സാഹിത്യം പോലുള്ള സർഗ്ഗാത്മകമേഖലയെ കൂടുതൽ സജീവമാക്കുകയും ചെയ്തു. മറ്റു ഭാഷകളിലുണ്ടായ പോലെ മലയാള സാഹിത്യകൃതികളിലും ഫെമിനിസ്റ്റ് പ്രവണതകളുടെ സ്വാധീനം ദർശിക്കാവുന്നതാണ്.

മനുഷ്യജീവിതനൈരാശ്യത്തെ അനുഭാവപൂർവ്വം പരിഗണിക്കുകയും അവയെ ചേതോഹരമായി ചിത്രീകരിക്കുകയും ചെയ്യുന്നവരാണ് ഉത്തരാധുനികത ഫെമിനിസ്റ്റുകൾ. മലയാളസാഹിത്യത്തിന്റെ പെണ്ണിടങ്ങളിൽ സവിശേഷമായ ഉടലും ഉയിരും ഉള്ളവരാണ് കെ.ആർ മീരയുടെ രചനകൾ. അപമാനിക്കപ്പെട്ട സ്ത്രീത്വത്തിന്റെ ശക്തി വിളിച്ചോതുന്ന ഒരു കൃതിയാണ് 'മീരാസാധു'. ഒരു കാലത്ത് സ്നേഹം യാചിച്ചിരുന്ന സ്ത്രീ കരുത്തോടെ തന്റെ ആധിപത്യം ഉറപ്പിക്കുകയാണ് ഇവിടെ. സ്ത്രീത്വത്തെ കുറിച്ചുള്ള യാഥാർത്ഥ്യം നിറഞ്ഞ ഒരു ദർശനമാണ് മീര, മീരാസാധു എന്ന സാഹിത്യസൃഷ്ടിയിലൂടെ സമൂഹത്തിനു നൽകുന്നത്.

The Padmapurana

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Abstract

Padma purana is generally assigned the second place among the eighteen Mahapuranas, according to the order laid down by the majority of the puranas and by the Padma purana itself. The Padma purana is stated to have fifty- five thousand slokas

But another place it claims to have one lakh and twenty five thousand slokas in the Krita Yuga, fifty two thousand slokas in the Treta -Yuga, twenty two thousand slokas in the Dvapara – Yuga and twelve thousand slokas in the Kali -Yuga

Bhakti is the most important constituent and its mental attitude was the main guiding principle in the growth of the cult and sects. The general mass of the numerous followers or the exclusive worshippers of the cult deities Vishnu, Siva, Sakti, Surya and Ganapati formed the well- known sects – Vaishnava, Saiva, Sakta, Saura ana Ganapatya.

The Padma purana is a work of considerable extent in its own enumeration it occupies the first place , but it is the second in the usual pauranic lists . According to several authorities and to its own statements it contains fifty five thousand stanzas.

The Voluminous Padma purana that occurs in various portions is available in South Indian and North Indian recensions .Though the order of the khandas vary in different editions , the South Indian recension of the Padma Purana consists of six khandas, namely Adi, Bhumi, Brahma, Patala, sristi and Uttara khandas. Besides these six khandas, Kriyayogasara, too is accepted as one more khanda of the Padma purana.

As regards the names and arrangement of the khandas we get some information from the Anandasarma edition it divides the work in to Parvans¹. In the Bhumi khanda² the khandas are enumerated as five, namely Sristi, Bhumi, Svarga Patala and Uttara. But in the Uttara khanda³ these khanda are stated to the sristi, Bhumi, Patala, Puskara and Uttara. It would not be unreasonable to think that Padma Purana originally consisted of five khandas as the time progressed it was evidently subjected to revision and rearrangement.

The Adi Khanda

The Adi khanda of the Padma Purana consists of sixty two chapters. It presumably belongs to a very late date and bears a Vaishnava stamp in its khanda there are several chapters which are common with some of the chapters of the Matsya Purana, Kurma purana and the Uttara khanda of the Padma purana itself. It may not be wrong to presume that the Adi Khanda has been appended at a very late age as an introductory part to the Padma purana whole.

The Bhumi Khanda

The Bhumi khanda which contains one hundred and twenty five chapters does not seem to have a very outset there is a narrative of Prahlada's birth and actions in a preceding Kalpa. This reference to the age of Prahlada suggests that the author of the Bhumi khanda was familiar with the Bhagavata Purana where legend of Prahlada occurs

In the list of incarnations Bhumi khanda mentions Bhuddha also⁴. There are reference to the Bhagavata Mantra of twelve syllables⁵, Sanaka, Cakra, Gada, Padma painted on the walls of the houses, the title Parama Bhagavata and the popularity of the worship and exactment of the play of the Avataras.

In the Bhumi Khanda we find distinct mention of the Turuskas who came to India about the 9th century AD. The Turuskas are described as Sikhavihira

¹ PP Srsti 1. 55-57

² PP Bhumi 125. 48-49

³ PP Uttara 1. 66-67

⁴ PP Bhumi 18-66

⁵ PP Bhumi 98-38

(having no lock hair on the crown of their head) and as Mukta kaccha who do not neck and him of their lower garment into the band

There are also some chapters having philosophical back ground and discussion. While discussing god, soul, body, world and jnana it distinctly refers to Padma purana. There are several stanzas that glorify knowledge as superior to other spiritual to other spiritual paths. The sametity of the river Reva has been glorified much more than that of the Ganga and Sindhu etc.

It would not be unreasonable to conclude that this khanda should have been composed at about the end of the 9th century AD

Brahma Khanda

This Khanda is comparatively a very short one. It consists of only twenty six chapters and suggests a recent origin. It dwells mainly upon the glorification of Vishnu and the Vaishnavs rituals. It describes the merits of the gifts of lamps to the shrines of Vishnu or burning pf lamps there at night the besmearing Vishnu temple with cow dung or some time over its walls. The Tulasi- plant is highly glorified and the garland of Tulasi is stated as the remover of all sins.

The whole chapter Brahma khanda is devoted to the narration of the Radha – Janmastamimahatmya and there it is named Vrata too. It is interesting to note that the contents of this khanda are given in the Naradiya Purana

It may be safely concluded that the Adi khanda and Brahma khanda (Svarga khanda) were composed in the final round of completion of the Padma Purana during the last quarter of the fourteenth century AD

Patala Khanda

The Patala khanda consists of three independent groups belonging to different sects. The first group which consists of chapters I to 68 dwells mainly upon Rama`s story which begins from his victory at Lanka and extends up to end of the Asvamedha sacrifice. It appears atleast to some of the historians that this portion is the work of the Ramaites and they hold that this portion is awork of some follower of Ramanuja who followed the doctrine of Ramanite cult. The Vaishnavas are highly honoured. The

Mantra Om Namo Vaishnav is mentioned at one place there is mention of Manthram Tarak⁶am Brahmasanjinitam.⁷

The second portion which comprises chapters 69 to 99 is apparently a contribution of Vaishnavas. It deals with Krishna charitha mainly In this group Krishna, Radha his eternal consort and Vrindavana are highly glorified. It also deals with the ideal of Bhakti best represented in the passionate devotion which Radha and Gopis depicted to have cherished for Krishna. There are numerous traces of Tantricism and Mula mantra. Om Namo Narayanaya. This Naradiya Purana also gives the contents of this portion of the Patala khanda.⁸

The third group dwells detailed upon the practice of the lingayatha religion⁹. Image worship is prohibited and in its place linga worship is recommended. The glory of the Bhasman, the Bhasma snana and even eating of the Bhasman are highly eulogised in this portion. There are mentions of Avarana of linga, linga Pitha and to the Panchakshara Japa¹⁰. This portion contains fanciful glorifications Linga and Siva who are shown much superior to Rama. It is apparent from the account of this portion that Linga worshippers in their assiduous endeavour and their spirit of adherence to their sect were busy preaching the superiority of Siva over Rama, the favourite god of the Vaishnavas who consider Him as Vishnu incarnate. Mention of the past inter location between Dilipa and Vasishta can be found in this problem survey of the Padma purana reveals that the Uttarakhanda contains such as inter location between Dilipa and Vasishta for describing the glorification of Magha and Magha snana¹¹ and also the last two chapters of the Uttara khanda are devoted to describe similar inter location between Dilipa and Vasishta. This proves that this portion of the patala khanda is posterior to the Megha-Mahatmya of the uttarakhanda. Hence the date of composition of this portion may be placed a little later than the last quarter of the 14 century AD.

⁶ PP Patala chp 83

⁷ Naradiya 1. 93. 21-22

⁸ PP Patala 101. 114-135

⁹ PP Patala 101.218

¹⁰ PP Uttara. 220-251

¹¹ PP Srsti 1. 54-60

Srsti Khanda

Which may be its place in the scheme of enumeration in various editions of the Padma purana, from the point of antiquity the Srsti -khanda undoubtedly occupies the first place. The constituent parts of the Padma purana were formerly known as Parvans. A careful analysis of the contents of this khanda except for some early chapters of the present Srsti khanda which is also known as Pushkara Parvan, the whole of it was recast or revised. It may be noted that the Pushkara Parvan was originally compiled by the Brahma worshippers who made use of it for preaching their doctrines

The Srsti khanda begins with the glory of Pushkara and its abiding duty, Brahma. Later, it can be seen that, the Vaishnavas while retaining some old chapters of Brahma worship utilized it for their own purpose.

On the basis of the contents, the Srsti – khanda is divided into five groups. The chapters constituting the first group are undoubtedly the work of the Brahma-worshippers. contains several verses which are in common with those of the Vishnu Purana and Matsya purana These chapters cannot be dated earlier than those of the Vishnu purana and the Matsya purana which are to be dated later than the first quarter of the 4 th century AD .

The first group narrates an interesting story in which Savithri cursed Brahma that the people would not worship him at any time throughout the year except once in the month of Karthika¹². But Gayathri, whom the Brahma worshippers bring in replace Savithri in the sacrificial rite granted a boon to Brahma that those who worship Brahma would enjoy all pleasures worldly and beyond. This can be seen as the deliberate efforts of the Brahma worshippers to revive the gradually declining Brahma worship. As regards the Brahma worship it is opened that the sect of Brahma became prominent during the period ranging from 200 AD to 600 AD.

The first group points out that the Dasavatara theory had not come in to prominence and particularly Buddha was not recognised as an incarnation Buddha had come to be regarded as an avathara of Vishnu during the 7 th

¹² PP Srsti 17. 151-153

Century and therefore it may not be wrong to conjecture that these chapters must have been written before the 7th Century AD.

The second group is evidently the completion of the Vaishnavas. The description of the origin of Brahma and his creation is of course, repeated in this group but it is done to assert the supremacy of Vishnu. There are several chapters on Vrata, Tirtha, Dana etc. Which point to the fact that this period witnessed a rise of Brahmanism and revival of Vedicism. Therefore it would not be unreasonable to guess that the date of composition of this group is earlier 650AD. or at about the 6th century AD or at about the 6th century AD.

The third group¹³ is indisputably a work of Tantric Brahman worshippers who tried to popularise the worshippers who tried to popularise the worship of Brahma by introducing a new method of Tantric Diksha . There is every reason to believe that the puranas began to be toned with the spirit of Tantricism from the beginning of the 9th century AD. Hence this portion might have been compiled at about the 10th century AD.

The fourth group dwells upon the origin and exploit of Saktha duty. This portion can rightly be presumed as an interpolation of the Saktha worshippers who seem to be highly influenced by the Tantric form of Sakthi worship. This portion gives the details of Siva duti, a saktha duty. This group gives indications of an advanced stage of Sakthi – worship after the popularity of Tantric cult. These chapters should have been composed after the 9th century AD or at about the 10 century AD .

The fifth group devotees to the glorification of Vishnu and the Vaishnavas several stanzas are found energising Tulasi plant and Dhatri -phala¹⁴ . The remarkable feature of this group is that it refers to Turuska, Mleccha and Yavana contemptuously. This is a possible indication that this group was composed after the Muhammadans had established their kingdom in India This portion points out the evil consequences of the slaughter of cows and the cows are considered as sacred as Agni and equalled with the Brahmas¹⁵. It is reasonable to believe that the Hindus by preaching the

¹³ PP Srsti 31. 8.75

¹⁴ PP Srsti chap 57.1-107

¹⁵ PP Srsti 45. 116-120, 122,162

glory of the cows were turning to race the influence of the Muhammadans from the society. Therefore these chapters cannot be dated earlier than 1000 AD. This conclusion is evidenced by the Naradiya- purana which provides the account of the contents of the latest form of the Srsti khanda.

Uttara Khanda

This is a compilation of great extent containing two hundred and eighty two chapters and sixteen thousand seven hundred and seventy nine verses. It constitutes more than one third of the whole of the Padma purana. This khanda is rather a cohesive mass of heterogeneous matters like several legends, glorifications of Vrata, Daana, Tirtha Varnasramadharma, the matter relating to the ideal of Bhakti and Mukti and also the theory of creation. There are also strazy references to the philosophical discussions relating to God and Soul.

Uttara Khanda is apparently a Vaisnavite work .The noteworthy feature of this khanda is that there are several treatises like Karthika Mahatmya, Sabhramati Mahatmya, Kalindi mahatmya, Gita mahatmya, Bhagavata mahatmya, Magha mahatmya etc.

The contents of the Uttara khanda suggests that all their parts cannot be assigned any particular period of time. This khanda is undoubtedly composed after the Bhagavata purana which is highly glorified in it. The Bhagavata purana is stated to be superior to all other puranas and the date of the Uttara khanda cannot be earlier than the 8th century AD. This khanda highlights the burning of lamps in the temples at night at Dipavrata also seems to have been popular at that time. The Deepavali mahotsava known as Kaumudi Mahotsava is highly glorified. The Tulasi plant is eulogised, deified and the Tulasi triratra – vrata is distressed details. Because of a boon granted by lord Vishnu himself , the Tulasi plant is stated to be very dear to Vishnu

The Uttara khanda refers to the worship of the five deities of the sastras and includes it amongst the daily duties of the people. This khanda regards the Tantras and the Agamas as authorities along with Sruti and Smrti. All these point to the fact that this khanda should not have been written earlier than the 9th century AD. There is mention of the five sagas namely Agastya, Madhava, Mukunda, Mahabala and Kapila .All these five

are stated to be Sukhasayins. Besides this khanda refers to the worship of the Acaryas who are highly revered.

The Uttara khanda carries to the destruction of the temples and idols by fierce Yavanas. This may have are allusion to the destruction of Somnath and other temple by Mahmud Ghazni . This can be safely taken as an indication that the time of composition of the Uttara khanda is about the end of the 11th century AD or the 12th century AD.

In a page in the Uttara khanda we find eulogy of God Vitthal who is Vishnu himself endowed with two arms. There are chapters on sectarian mantra and its diksa, sectarian mark and and also sectarian theology .There are also references suggestive of the rivalry of Vaishnavas against the Saivas. It is noteworthy that several smriti writes Vajaspathimisra, Govindananda, Raghunandana, Gopala Bhatta and Vijnana Bhikshu quotes verses from some of the chapters of this khanda

It may be noted here that the extend Padma purana contains several contradictions, repetitions and also matter borrowed from the other puranas. But all the additions or modifications that occur in this purana may be attributed to the sectarian motive that seemed to be vying with each other for superiority.

Reference

- 1 Padma-Purana-Five parts Gurumandalagrandamala No 18, Culcuttav 1957- 59
- 2 Padma- purana-Four parts Anandasrama Samskrta Grandavali, No.131, 1893- 94
- 3 Sree Padma purana – Translated by V Balakrishna and R Leeladevi Vidyarthi mithram Book Depo- Kottayam year 1997.

A Study of Adulteration and Quality evaluation of milk samples collected from Pulimath Panchayath, Thiruvananthapuram, Kerala

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Abstract

Milk is an important source of nutrient required for the growth in infants and for the maintenance of health in adults. Milk is a perfect food, readily digested and absorbed. It is a sole natural food for infants and children. But these days it is being adulterated with harmful substances which enhance its quantity and characteristics but reduce its quality. Milk is one of the products which can be easily adulterated in many ways due to which the quality of milk is reduced. Possible reasons behind it may include the gap between the demand and supply, the perishable nature of milk, low purchasing capability of the customer and the lack of suitable detection tests. Milk adulteration is a worldwide concern and our countries are at higher risk associated with the lack of monitoring strategies. Unfortunately, in contrast to common belief, milk adulterants can cause serious health hazards leading to fatal diseases, and consumers are unaware of these adulteration practices. So, spreading awareness among the people about different types of adulterants that can be present in milk and their harmful effects on health can be an appropriate recommendation in this case. The aim of the present study is to analyze and compare the chemical composition of milk and to detect various adulterants in market milk sold by different intermediaries at the vicinity of *Pulimath panchayath*, Thiruvananthapuram District, Kerala. The study has shown that about 92.5% of samples, though safe, fall short of one or another quality parameter.

Keywords: Milk, physical properties, chemical composition, adulterants of milk.

Introduction

Milk is the first food for humans, and it is seen as the only richest natural food in terms of the nutritional elements the body needs. It provides many of the nutritional elements necessary for the growth and maintenance of the human body in adequate amounts. Milk in its natural form has high food value. It supplies nutrients like proteins, fat, carbohydrates, vitamins and minerals in moderate amounts in an easily digestible form. Milk contains more than 100 substances that are either in solution, suspension or emulsion in water. The composition of milk varies considerably with the breed of cow, stage of lactation, feed, the season of the year, and many other factors.

Milk is one of the best sources of nutrition and are consumed by all age groups in rural as well as urban areas. It provides a significant amount of fats and protein and also provides body-building vitamins along with furnishing energy giving lactose and many other nutrients, therefore an ideal food for pregnant women and infants. On average, milk is made up of 87.4% water and 12.6% milk solids (3.7% fat, 8.9% milk solids-not-fat). The milk solids-not-fat contain protein (3.4%), lactose (4.8%), and minerals (0.7%) (Chandan,1997). Milk fat often called "butter fat" is commercially, the most valuable constituent of milk. The protein of milk is casein (80 %) and lactalbumin (18%). A third protein recognized as present in milk is lactoglobulin (0.05 to 0.07). Adulteration is the act of making food or drugs of poor quality by adding some other substances to them. The addition of adulterants is called adulteration (Lakshmi, V,2012). Milk is one of the products which can be easily adulterated in many ways due to which the quality of milk is reduced, which in turn affects the quality of further processed dairy products (Kumar, R.1998). Possible reasons behind it may include -the demand and supply gap, perishable nature of milk, low purchasing capability of customers and the lack of suitable detection tests. The vendors used adulterated milk to gain maximum profit. Starch and different substituted milk powders are added to increase its volume.

Milk is a perishable commodity and is likely to be spoiled during the summer season when the weather becomes very hot (Tipuet al., 2007). In order to keep milk temporarily fresh, some unethical activities are usually

adapted to prevent financial losses due to the spoilage of milk during its transportation and sale (Naz,2000). Milk adulteration is an act of intentionally debasing the quality of food offered for sale either by admixture or substitution of inferior substances or by the removal of some valuable ingredient. A National survey in India has revealed that almost 70% of the milk sold and consumed in India is adulterated by contaminants such as detergent and skim milk powder, but impure water is the highest contaminant. According to National Survey on Milk Adulteration conducted by FSSAI (India) in 2011, water is the most common adulterant followed by detergent in milk. In a survey by FSSAI in 2012, 68% of milk samples were found to be adulterated of which 31 % were from rural areas. Of these, 16.7 % were packet or branded milk and the rest were loose milk samples from dairies. In the urban areas, 68.9 % of milk was found to be adulterated with water, detergent, urea and skim milk powder. Despite the laws governing the quality and sale of milk existing in India for decades, the adulteration of milk has not been checked completely [Kumar, R.1998].

According to National Survey on Milk Adulteration conducted by FSSAI (India) in 2018, The Food Safety and Standards Authority of India (FSSAI) carried out a survey on the safety and quality of liquid milk from May 2018 to October 2018 covering all States and UTs. In this survey, a total of 6,432 samples of raw and processed milk were collected from 1,103 towns/cities with populations above 50,000. The survey has shown that 12 out of 6,432 samples of milk were adulterated that render such milk unsafe for human consumption. Overall, above 93% of the samples that is 5976 out of 6,432 samples were found to be absolutely safe for human consumption. This is undoubtedly good news for consumers (National milk safety and quality survey,2018).

In order to keep milk temporarily fresh, some unethical activities are usually adapted to prevent financial losses due to the spoilage of milk during its transportation and sale. For instance, the addition of water to increase the volume of milk, thickening agents like starch, flour, skimmed milk powder, whey powder, or other ingredients to counter the dilution and extend the solids content of the milk. Vegetable oil, sugarcane or urea

to compensate for the fat, carbohydrate, or protein content of diluted milk. Some chemicals such as hydrogen peroxide, carbonates, bicarbonates, antibiotics, caustic soda and even the most lethal chemical formalin to increase the storage period of milk, ice to enhance the shelf life of milk; detergents to enhance the cosmetic nature of milk which diminishes foamy appearance and whitening of milk or calcium thioglycolate/ potassium thioglycolate/ calcium salts of thioglycolic acid and urea for whitening of milk and giving it a genuine appearance.

Adulteration of milk and dairy products came into global concern after the breakthrough of melamine contamination in Chinese infant milk products in 2008 (Xin & Stone, 2008). Possible reasons for milk adulteration are, the demand and supply gap, perishable nature of milk, low purchasing capability of customers and the lack of suitable detection tests (Kamthania *et al.* 2014). Qualitative detection of adulterants in milk can be easily performed with chemical reactions, while quantitative detections are complex and diverse. Type of quantitative detection technique depends on the nature of adulterants in milk. For example, LC (Liquid Chromatography) and ELISA (Enzyme Linked Immunosorbent Assay) are the most common techniques used to detect foreign proteins; PCR (Polymerase Chain Reaction) and PAGE (Polyacrylamide Gel Electrophoresis) are usually used to detect milk from different species as adulterants in milk of a particular species. Various preservatives like formalin and some antibiotics are also added in milk to increase its shelf life. This addition decreases the nutritive value of milk. These adulterants, preservatives and drugs in milk cause very serious health related problems (Ali *et al.*, 2011). With growing international trade, food safety has emerged as an important global issue (Sudershan *et al.*, 2009). Milk is transported from point of production to cities mainly through middlemen. Such milk is watered/ skimmed to increase profit. To maintain its composition, materials like starch, flour, urea, cane sugar and vegetable oil are added as adulterants. Milk dealers may either dilute the milk or extract valuable components and there after add cheap substances to maintain its compositional parameters. These substances include starch, urea, preservatives like formalin, hydrogen peroxide, boric acid and various

antibiotics. Urea is added for whitening of milk and only few grams of urea are enough to bring milk in its original state.

Hydrogen peroxide is used as preservative usually in summer season when environmental temperature is very high. This unethical activity is usually adapted to prevent the financial losses due to the spoilage of milk during its transportation and sale. A national survey in India has revealed that almost 70% of the milk sold and consumed in India is adulterated by contaminants such as detergent and skim milk powder, but impure water is the highest contaminant.

The most common adulterants added to milk are water, urea, starch, oils etc. Consumption of urea will lead to kidney failure, damages the heart and liver.

Larger doses may cause decrease in body temperature, shallow respiration, weak abnormal pulse and subconsciousness. It additionally influences the optic nerve and may induce blindness. It is one of the effective cancer-causing agents. It produces pathological lesions in vital organs, and abnormalities of skin and eyes. Excessive starch in the milk can cause diarrhea due to the effects of undigested starch in the colon, however, accumulated starch in the body may prove very fatal for diabetic patients (Singuluri & Sukumaran, 2014). To enhance SNF value of milk, detergents are added which on consumption may cause health hazards.

The adulteration of milk is banned due to its ill effects. Carbonate in milk produce gastro intestinal problems including gastric ulcer, diarrhea, colon ulcer, and electrolytes disturbance (Beall and Scofield, 1995). The hydrogen peroxide disturbs the antioxidants in the body disturbing the natural immunity. Chloride in the milk disturbs the acid-base balance in the body and also blood pH. Ammonia in milk develops regression, loss of acquired speech and sensory disturbances. Various factors including animals and equipment cleanliness, season feed, animal health and many others (Coorevits, 2008). could contribute to bacterial contamination. Rinsing of milking equipment and machines with dirty water is one of the foremost reasons for the presence of a variety of microorganisms including pathogens in raw milk (Chatterjee, S.N., 2006). The microorganisms enter milk from a variety of sources and once in milk, can play a number of

roles, such as facilitating dairy fermentations (e.g. *Lactococcus*, *Lactobacillus*, *Streptococcus*, *Propionibacterium* and fungal populations), causing spoilage (e.g. *Pseudomonas*, *Clostridium*, *Bacillus* and other spore-forming or thermophilic microorganisms). Clean milk manufacturing, managing and transport are thus very important. Unfortunately, some of the adulterants have severe health impacts, sometimes in the long run. The ingestion of melamine at levels above the safety limit can induce renal failure and death in infants. The aim of this study is to analyze and compare the chemical composition of milk available in local markets and to detect the presence of various adulterants, for evaluating the quality of the milk sold by different intermediaries at the vicinity of *Pulimath panchayath*, **Thiruvananthapuram District, Kerala.**

Materials and Methods

Present investigations were carried out to evaluate the quality of the market milk sold by different intermediaries at the vicinity of Pulimath panchayath, Thiruvananthapuram District, Kerala. A total of 30 milk samples in each category was collected randomly.

Study design

Random sampling Design.

Sample size

30 milk samples were collected from 4 different sectors marketed in and around Pulimath Panchayath.

1. **Milk producers (MP)**
2. **Milk collectors (MC)**
3. **Milk Cooperative Societies (MS)**
4. **Packeted milk (PM)**

Samples were kept in a sterilized container and stored in a refrigerator, later analyzed at the laboratory without any delay. (Bureau of Indian Standards FSSAI,2015)

Specific gravity

The specific gravity of milk is determined by using Lactometer. It is a hydrometer (a device for measuring specific gravity) adapted to the normal range of the specific gravity of milk. Specific gravity was calculated by using the following formula.

$$\text{Specific gravity} = 1 + \text{CLR}/1000$$

Fat Content

Fat content of milk was determined by Gerber method as described by James (2000). The milk sample (11ml) was mixed with 90% sulfuric acid (10ml) and amyl alcohol (1ml) in butyrometer, and closed with rubber cork. The mixture was mixed and centrifuged in a Gerber machine (5 min) at 1100 r.p.m. The fat percentage was noted on the butyrometer scale.

Total Solids %

Total solid contents of milk were determined by oven dried method. Fresh milk was taken in pre-weighed china dish and evaporated on steam bath. After evaporation milk was dried in an oven at 101°C. Dried milk samples were kept for 1 hour in desiccators in the presence of silica gel and weighed. The process was repeated until a constant weight was obtained. Total solids % was calculated by the following formula (AOAC, 1990).

$$\text{Total solid \%} = \frac{\text{Weight of dried sample} \times 100}{\text{Weight of milk sample}}$$

Solid Not Fat (%)

Calculated by the formula Solid not fat was determined by the following formula (Harding, 1995).

$$\text{Solid Not Fat (\%)} = \text{Total Solid (\%)} - \text{Fat (\%)}$$

Percent added water:

Percent added water calculated by using the following formula,

$$\% \text{ Added Water} = \frac{(\text{Standard SNF} - \text{Sample SNF})}{\text{Standard SNF}} \times 100$$

Acidity

Weigh accurately about 10 ml of the milk in a suitable dish. Add 30 ml of warm water. Add 1 ml of phenolphthalein indicator. Shake well and titrate against standard NaOH solution. Complete the titration in 20 seconds. Keep a blank by taking 10 ml of milk diluted with 30 ml of water in another dish for comparison of colour.

$$\text{Acidity as Lactic acid} = \frac{AN}{W} \times 9$$

A = Volume of standard NaOH required for titration

N = Normality of Standard NaOH solution

W = weight of the milk sample taken for test.

Statistical Analysis

The data were analyzed through a computerized statistical package i.e., Student Edition of Statistics (SXW).

Detection of Adulteration

The milk samples were tested for the following adulterants – formalin, urea, starch, neutralizers, detergents, sodium chloride, skim milk powder cane sugar, glucose/ dextrose, hydrogen peroxide, acidity and heat stability of milk was also tested

Testing of common adulterants in milk

- 1) **Water**-Lactometer is used to check the water dilution. Measured value is compared with the standard value.
- 2) **Urea**: -Take 5 ml milk in a test tube + 5 ml dimethyl amino benzaldehyde solution, shaken well Yellow color develops. It shows the presence of added urea.
- 3) **Formalin**: - Take 10 ml of milk in a test tube. Add 5 ml conc. sulphuric acid through the sides of the test tube without shaking. If a violet or blue ring appears at the intersection of the two layers, it shows the presence of formalin.

- 4) **Detergent:** -Take 5 ml milk + few drops of bromocresol purple solution appearance of faint violet color indicates the presence of detergent in milk.
- 5) **Skimmed milk:** - If the addition of nitric acid drop by drop in to the test milk sample results in the development of orange color, it indicates the milk is adulterated with skim milk powder. Samples without skim milk powder shows yellow color.
- 6) **Starch:** -Take 5ml milk in test tube, boil than cool and added 1 to 2 drops of iodine solution appearance of blue color which indicates the presence of starch.
- 7) **Neutralizer (Sodium bicarbonate) or soda test:**-Take 3ml of milk in a test tube add 4 drops of rosalic acid solution the appearance of a red colouration indicate the presence of neutralizer in milk.
- 8) **Salt:** - 5 ml of silver nitrate reagent is taken in a test tube. Add 2-3 drops of potassium dichromate reagent. Add 1 ml of milk in the above test tube and mix thoroughly. If the contents of the test-tube turn yellow in color, then milk contains salt. If it turns to chocolate or reddish brown encolour, the milk sample is free from salt
- 9) **Hydrogen Peroxide:** - To 10 ml of milk sample in a test tube add 10-15 drops of Vanadium Pentoxide reagent and mix. Pink or red colour indicates the presence of Hydrogen Peroxide.
- 10) **Glucose &Dextrose:** - add 2 ml of milk sample and equal volume of benedicts reagent in to a test tube. Keep in a boiling waterbath for 5 minutes. Reddish brown precipitate indicates the presence of sugar in milk.
- 11) **Cane sugar** in milk- To 2ml of the milk sample add modified Selivanoffs reagent. Keep in a boiling water bath for 5 minutes.Redcolour indicates the presence of canesugar in milk.

Results and Discussions

A total of 30 milk samples were randomly collected from different intermediaries Milk producers (MP), Milk collectors (MC), Milk Cooperative Societies (MS), Packaged milk (PM), marketed in and around

Pulimath Panchayath were examined for their chemical composition, physico chemical properties and different adulterants.

Chemical Composition

The chemical composition of milk samples collected from different intermediaries presented in Table- 1 and figure-1. Among the intermediaries, milk obtained from MP, PM and MS were remarkably higher ($p < 0.05$) in fat content than that of milk procured from MC. Results indicated that SNF and Total solids content of milk sold by MC and MS seemed to be lower ($p < 0.05$), in SNF content than that of MP and PM.

Table 1: Chemical Composition of Milk Samples Collected from different intermediaries.

Samples	Fat (%)	(SNF)(%)	Total solids (%)	Percentage added water
Milk Producers (MP)	4.10 \pm 0.09 ^a	8.13 \pm 0.15 ^a	11.66 \pm 0.17 ^a	3.41 \pm 0.09
Milk Collectors (MC)	1.50 \pm 0.24	7.23 \pm 0.51	8.73 \pm 0.27	11.36 \pm 1.10
Milk Societies (MS)	3.20 \pm 0.15 ^a	6.92 \pm 0.21	10.12 \pm 0.31	9.88 \pm 0.12
Packaged Milk (PM)	3.63 \pm 0.12 ^a	7.91 \pm 0.42 ^a	11.44 \pm 0.02 ^a	8.42 \pm 0.32 ^a

Mean + SE (%) values ($P < 0.05$).

Milk samples from MP and PM were observed lower percent added water ($p < 0.05$) than samples of MC and MS. This might be due to the reason that adulteration of extraneous water in milk apparently increases the moisture content of corresponding milk (Hossain *et al.*, 2010). Present findings are in line with that of reported studies of (Ayub *et al.*, 2007) and who reported relatively similar fat content in buffalo dairy farm milk (Abdul Aziz Soomro *et al.*, 2014) who investigated various adulterations and their impact on chemical characteristics of market milk sold at Badin Karnataka.

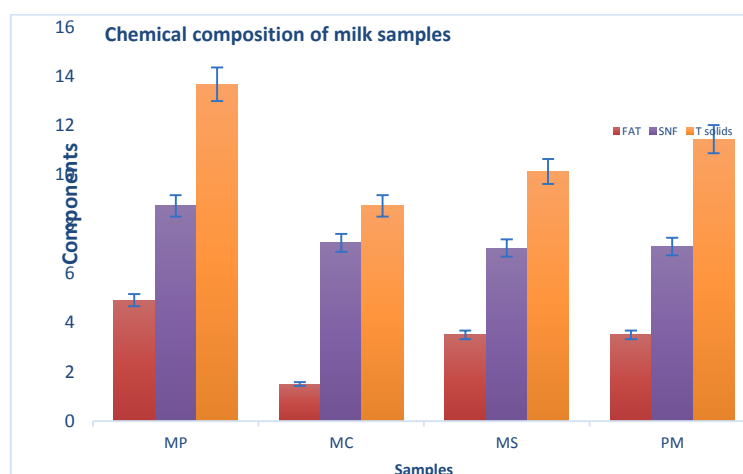


Table 2: Physico Chemical Parameters of Milk Samples Collected from different intermediaries

Samples	Sp.gravity(kg/L)	Acidity	PH
Milk Producers (MP)	1.023± 0.01	0.154 ± 0.06 ^a	6.22 ± 0.05
Milk Collectors (MC)	1.012± 0.02	0.182 ±0.11	6.09 ± 0.16
Milk Societies (MS)	1.01 ± 0.03	0.173 ± 0.10	6.10 ±0.11
Packaged Milk (PM)	1.020± 0.02	0.153 ± 0.05 ^s	6.31± 0.24

Table 3: Adulteration of Milk Samples (%)

Adulterants	Samples from Milk Producers (MP)	Samples from Milk Collectors (MC)	Samples from Milk Societies (MS)	Samples from Packaged Milk (PM)
Urea	--	--	--	--
Starch	--	6.6%	--	3.3%
Neutralizer	--	--	--	--
Detergents	--	--	-	--
Sugar	--	--	--	--
Glucose and dextrose	--	--	--	--
Formalin	--	--	---	--
Sodium chloride	--	--	-	--
Hydrogen peroxide	--	--	---	--
Skim milk powder	--	6.6%	3,3%	10%

Mean + SE (%) values (P<0.05).

The overall mean values of physico chemical properties of milk samples collected from different intermediaries were given in table-2. According to the results obtained, the values obtained in this study for milk samples collected by MP and PM were almost similar to those in freshly obtained normal cow's milk, and moreover, milk samples collected from MP and PM were showed significantly ($p < 0.05$) higher specific gravity than the milk samples collected from MC and MS. This might be due to addition of more extraneous water in the samples of MC, MS than the MP and PM. The acidity of milk samples sold by MP and PM was observed ($p < 0.05$) lower values than the milk samples sold by MC and MS. This might be due to the fact that the milk sold by the MP and PM was fresh milk and not having any developed acidity.

Adulteration in milk samples

The results of different adulterants are shown in table 3. It is clearly evident that all examined milk samples collected from MP, MC, MV, and RS were free from Hydrogen peroxide, Urea, Neutralizers, Detergents, Formalin, sodium chloride, glucose, and dextrose.

Formalin: As per the results None of the samples were positive for formalin.

Urea adulteration: Urea is added to milk to provide whiteness, increase the consistency of milk, and for leveling the contents of SNF as are present in the natural milk (Kandpal *et al.*, 2012). As per the results obtained in the present study, no sample was positive for urea.

Starch and sugar adulteration: Starch and sugar were added to increase the thickness of milk after the addition of water. According to the results, all the samples collected from MP, MS and were negative for starch, whereas 6% samples from MC and 3% samples from PM showed positive results. Sugar adulteration was not observed for all the other samples collected.

Neutralizers' adulteration: Neutralizers are generally used to mask the pH and acidity values of badly preserved milk passing it off as fresh milk (Faraz *et al.*, 2013). As per the results, none of the samples were positive for neutralizers.

Detergent adulteration: Detergents are added to emulsify and dissolve the oil in water giving the frothy solution, the characteristic white colour of milk (Kendall *et al.*, 2012). According to the results obtained, none of the samples were found positive for detergents.

Sodium chloride adulteration: None of the samples were found positive for sodium chloride.

Skim milk powder adulteration. Skim milk powder was used to either increase the weight or relative mass of milk. As per the results obtained in the present study, samples from milk producers were negative for skim milk powder adulteration, whereas ten samples from PM, 3.3% from MS 6.6% samples from MC showed positive results for skim milk powder adulteration,

Conclusion

In a country such as India where milk and milk products play an important role in different foodstuffs and this analysis carried out should bring about more awareness to the general public about the malpractices in milk marketing. Based on the results of chemical composition, physicochemical properties and milk adulteration, it was clearly shown that the milk sold at four different kinds *viz.*, MP, MC, MS, and PM fall short of one or another quality parameter or standards. These results clearly suggest that milk samples collected from different intermediaries in the vicinity of Pulimath panchayath were not at all adulterated. But Consumers must be conscious of this malpractice and they have to be more active against milk adulteration. So, spreading awareness among the people about different types of adulterants that can be present in milk and harmful effects on health can be an appropriate recommendation in this case. The government should periodically collect samples and do tests to make sure the quality of the milk supplied and consumed by the people. A technical approach to this problem can be a small portable and economical milk test kit. The kit should have simple tests that the consumers can do to check the quality of their milk. The kit should be affordable and easily available in the market and should be subsidized by the government. It should have a lactometer for testing the percentage of water in milk and a few other chemicals for other basic tests like powder milk, detergent, and

urea. With such a method, consumers can check the quality of milk before buying them from vendors. Vendors selling adulterated milk should be interrogated and this practice should be banned. The study has shown that about 92.5% samples, though safe, fall short of one or another quality parameter. These results support with National milk safety and quality survey, 2018. The survey has shown that 12 out of 6,432 samples of milk were adulterated that render such milk unsafe for human consumption. Overall, above 93% of the samples that is 5976 out of 6,432 samples were found to be absolutely safe for human consumption. This is undoubtedly good news for consumers. Overall, above 93% of the samples that is 5976 out of 6,432 samples were found to be absolutely safe for human consumption.

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Subverting the Sexuality in Mr. Bean

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Abstract

The terms “masculine” and “feminine” are usually used to describe gender. In the sitcom Mr. Bean, his character is encoded with a range of characteristics and behaviours that are the inverse of those deemed important and necessary for masculinity. The character appears to display qualities that would place him in opposition to the contemporary masculine ideal; he inverts the traits society accepts as necessary prerequisites for a certain type of masculine identity. This paper facilitates a deconstruction of the so-called masculine identity through the sitcom Mr.Bean.

Key Words

Mr.Bean, Masculine, Feminine, Sitcom, Society, Deconstruction, Masculine Identity

Paper

Gender refers to the characteristics and behaviours that a society or culture associates with males and females. The terms “masculine” and “feminine” are usually used to describe gender. Gender expression can be defined as the way we show our gender to the world. Even very young children are clear about the gendered choices that boys and girls are supposed to make in relation to toys, colours, clothes, games and activities. In the sitcom Mr. Bean, his character is encoded with a range of characteristics and behaviours that are the inverse of those deemed important and necessary for masculinity.

The concept of 'other' is a useful symbolic resource and social maker in understanding the process of constructed identity. Mr Bean, as a representative 'other' of conventional masculinity, can assist an understanding of the conceptual limits of masculinity.

The character appears to display qualities that would place him in opposition to the contemporary masculine ideal; he inverts the traits society accepts as necessary prerequisites for a certain type of masculine identity.

As a "mock-macho" representation of masculinity, Mr. Bean presents us with a male character whose actions are tinged with the very real possibility of collapsing into chaos. The character of Mr. Bean represents a distinctly male figure whose very existence confronts social order and challenges our social relations. The character of Mr. Bean is encoded with a range of characteristics and behaviours that are the inverse of those deemed important and necessary for masculinity.

Mr. Bean facilitates a deconstruction of the signs, symbols and imagery of masculinity. Mr. Bean is distinctive; he is made up of a number of instantly recognizable elements. His clean-cut appearance, with shirt, short tie and side - parted hair, is so obviously out of place with contemporary fashion that it places him further beyond the registered frameworks of modern culture.

Bean's clean shaven face would place him in opposition to the contemporary masculine ideal. The ability to grow a beard is considered a sign of physical maturity in men. As Whitman suggested, "Beards were liberating and empowering and were accordingly embraced by men of every rank, from patricians to day labourers." More than any other trait, beards are perceived as a sign of gruff manliness. With his clean shaven face, he inverts the traits society accepts as necessary for a certain type of masculine identity.

Mr.Bean



The male body is typically used as an object of heterosexual desire and as a signifier of physical power in determining hegemonic masculinity. However, in the comedy of Mr. Bean this call for an overt masculine sexuality is used ironically. The character exhibits an unsophisticated and sexless body image.



Another instant is his love for his inanimate companion Teddy. Teddy is generally regarded as Mr. Bean's best friend. Although Teddy is inanimate, Bean occasionally pretends it is alive. Certainly Bean behaves as if the bear is real, buying it a Christmas present or trying not to wake it in the morning. What is peculiar is Teddy's are usually considered as a girlish thing. Usually girls prefer teddy bears once they were little girl and teddy bears allows them to explore that side of their personality.

Mr. Bean has a girlfriend named Irma Gobb. However, we see no easy exchange of affection or display of sexual attractions between them. His girlfriend is shown to be able to tolerate Mr. Bean's antics to some extent. She even shows a more mature nature in certain circumstances.



This "mock-macho" sitcom offer viewers more than a postmodern spectacle of unenlightened or unreconstructed manhood. By making a mockery of masculinity, these comic narratives simultaneously present men as object of laughter and as subjects moving between "old" and "new" subject positions. This deconstructed masculine image challenges the newer models of masculinity present in popular culture.

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‘e’ ലോകം അടയാളങ്ങളിൽ

സ്മിതാ പ്രകാശ്

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പ്രബന്ധസംഗ്രഹം

വളരെ വിശാലമായ ഒരു ലോകമാണ് ‘e’ മാധ്യമങ്ങൾ നമ്മുടെ മുന്നിൽ തുറന്നു തരുന്നത്. ഡിജിറ്റൽ സാങ്കേതികവിദ്യയുടെ കടന്നുകയറ്റം ജീവിതത്തിന്റെ സമസ്തമേഖലകളിലും പ്രകടമാണ്. സേതുവിന്റെ ‘അടയാളങ്ങളിൽ’ നവമാധ്യമങ്ങളുടെ സ്വാധീനം കുടുംബബന്ധങ്ങളിൽ ഉണ്ടാകുന്ന വിള്ളലുകൾ ആണ് വെളിപ്പെടുത്തുന്നത് എന്നാൽ ചില നേരങ്ങളിൽ ഇവയുടെ ഇടപെടലുകൾ ആശ്വാസമായും സ്വാന്തര്യമായി തീരുന്നുണ്ട്.

‘e’ ലോകം അടയാളങ്ങളിൽ

വർത്തമാനപത്രങ്ങളുടെ പടിപടിയായുള്ള വളർച്ചയിൽ നിന്ന് മാധ്യമലോകം ഇന്ന് അത്ഭുതാവഹമായ നേട്ടങ്ങളാണ് കൈവരിച്ചത്. ഇലക്ട്രോണിക് മാധ്യമങ്ങളുടെ അതിപ്രസരം മാധ്യമലോകത്തെ വിപ്ലവാത്മകമായ മാറ്റങ്ങളിൽ കൊണ്ടെത്തിച്ചു. റേഡിയോ, ടെലിവിഷൻ, മൊബൈൽഫോൺ, ഇ-മെയിൽ, ഇന്റർനെറ്റ്, ബ്ലോഗ്, ഫേസ്ബുക്ക്, ട്വിറ്റർ... തുടങ്ങി ‘e’ മയമായ ലോകത്തിലാണ് നാം ജീവിക്കുന്നത്. വാർത്തകൾ കൊണ്ട് നമ്മെ വിസ്മയിപ്പിക്കാനും ഞെട്ടിക്കാനും രസിപ്പിക്കാനും ഇവ മത്സരിക്കുകയാണ്. ഇന്ന് നാം ശ്വസിക്കുന്നതു തന്നെ ഇൻഫർമേഷനാണ്. ചുരുക്കിപ്പറഞ്ഞാൽ ‘e’ ലോകത്തിന്റെ മാന്ത്രികവലയത്തിനുള്ളിലാണ് നമ്മുടെയീ ലോകത്തെ നാം പടുത്തുയർത്തിയിരിക്കുന്നത്.

‘e’ മാധ്യമങ്ങൾ നമുക്കു മുന്നിൽ തുറന്നു തരുന്ന ലോകം വളരെ വിശാലമാണ്. അവ നമ്മുടെ ജീവിതത്തിന്റെ ഭാഗമായി തീർന്നിരിക്കുന്നു. സാധാരണക്കാരുടെ മാധ്യമമായാണ് റേഡിയോ നമുക്കിടയിലേക്ക് വന്നത്. അതാതു പ്രദേശത്തെ ജനങ്ങളുടെ ഭാഷയും സംഗീതവും കലയും സംസ്കാരവും ജീവിതാനുഭവങ്ങളും പങ്കുവെയ്ക്കുന്നു. യാത്രാവേളകളിൽ നമ്മുടെ സന്തതസഹചാരി

യായും മാറുന്നുണ്ട്. മലയാള ഭാഷ നമ്മുടെ ദൃശ്യ-ശ്രാവ്യമാധ്യമങ്ങളിൽ നിമിഷം പ്രതി കൊല്ലാക്കൊല ചെയ്യപ്പെടുമ്പോൾ വാമൊഴിയുടെ അഴക് ശരിയായി മനസ്സിലാക്കാൻ റേഡിയോ സഹായിക്കുന്നു. ദൃശ്യമാധ്യമമായ ടെലിവിഷൻ നമ്മുടെ കുടുംബത്തിലെ അംഗമാണ്. പുറത്ത് നടക്കുന്നതെന്തും നടന്നു കൊണ്ടിരിക്കുന്ന സമയത്ത് കൺമുമ്പിൽ എത്തിച്ചു തരുന്നു. നമ്മുടെ ജീവിതത്തെ, ഭക്ഷണശൈലിയെ, വേഷഭൂഷാദികളെ, ചിന്തകളെ, അഭിരുചികളെ എല്ലാം നിർണ്ണയിക്കുന്നതിൽ ടെലിവിഷൻ മുഖ്യപങ്കുവഹിക്കുന്നുണ്ട്. ടെലിവിഷനിൽ നിന്ന് ഇന്റർനെറ്റ്-ഇ മെയിൽ ലോകത്തേക്ക് കടക്കുമ്പോൾ നമ്മുടെ ലോകം കുറെക്കൂടി വിശാലമാകുന്നു. ഇന്റർനെറ്റിന്റെ വലിയ പ്രത്യേകത അതിന്റെ പങ്കാളിത്ത സ്വഭാവമാണ്. വായനക്കാരന അഭിപ്രായം എഴുതി ചേർക്കാനുള്ള സംവിധാനമുണ്ട്. അവിടെ അവന്റെ ചിന്തകളും ആശയങ്ങളും പങ്കുവെയ്ക്കപ്പെടുന്നു. മൊബൈൽഫോൺ ഇന്ന് ഏറെ ജനപ്രിയമായിരിക്കുകയാണ്. സംസാരിക്കാൻ മാത്രമല്ല, പാട്ടുകേൾക്കാനും ഗെയിം കളിക്കാനും ഫോട്ടോ എടുക്കാനും ഇന്റർനെറ്റ് കാണാനും ഇ-മെയിൽ അയയ്ക്കാനും വീഡിയോക്ലിപ്പുകൾ കാണാനും സാധിക്കുന്നു. അങ്ങനെ സമൂഹത്തിന്റെ സർവ്വമേഖലകളിലും പ്രവേശനം ലഭിക്കുക വഴി അത് സാധാരണക്കാരന്റെ മാധ്യമമായി മാറിയിരിക്കുന്നു.

പ്രസാധകന്റെയോ പത്രാധിപരുടെയോ കാര്യബോധത്തിന് കാത്തു നിൽക്കാതെ സ്വരചനകളും ചിന്തകളും ലോകത്തിനു മുന്നിൽ അവതരിപ്പിക്കാനുള്ള വർത്തമാനകാലത്തിന്റെ മാധ്യമമായാണ് ബ്ലോഗ് കടന്നുവന്നത്. വിവരസാങ്കേതികവിദ്യയുടെ മുഴുവൻ സാധ്യതകളും ഇതിൽ ഉപയോഗപ്പെടുത്തുന്നുണ്ട്. ഇരുപത്തിയൊന്നാം നൂറ്റാണ്ടിന്റെ ആദ്യദശകത്തിലെ ആവേശമായിരുന്ന ബ്ലോഗിനെയും ബഹുദൂരം പിന്നിലാക്കി ഫേസ്ബുക്കും ട്വിറ്ററും കരുത്താർജിച്ചുവരുന്ന കാഴ്ചയാണിത് നാം കാണുന്നത്. തങ്ങളുടെ ആശയങ്ങളെ കുറേക്കൂടി ഫലപ്രദമായും അനായാസമായും കൈമാറ്റം ചെയ്യാമെന്ന സൗകര്യമാണ് സോഷ്യൽ നെറ്റ്വർക്കുകളിലേക്ക് പുതിയ ജനറേഷനെ ചേക്കേറാൻ പ്രേരിപ്പിച്ചത്. ഇവയിൽ ഇന്ന് ഏറെ ജനപ്രിയമായിരിക്കുന്നത് ട്വിറ്റർ ആണ്. ട്വിറ്റ് എന്നറിയപ്പെടുന്ന സന്ദേശം അയയ്ക്കാനും മറ്റുള്ളവർ അയയ്ക്കുന്ന സന്ദേശം കാണാനും ട്വിറ്റർ അവസരമൊരുക്കുന്നുണ്ട്. ഫേസ്ബുക്കും ഇന്ന് ഏറെ ജനപ്രിയമായിരിക്കുകയാണ്. പുതുതലമുറയുടെ മുഖ്യ ആശയവിനിമയോപാധിയാണിത്. ഇങ്ങനെ സാധാരണക്കാരനു പോലും ആഗോളീകരണകാലത്തെ ആശയവിനിമയ സങ്കേതങ്ങളായി സോഷ്യൽ നെറ്റ് വർക്കിങ് വെബ്സൈറ്റുകൾ മാറിയിരിക്കുന്നു. വിനോദങ്ങൾക്കുമപ്പുറം നമ്മുടെ സാമൂഹിക രാഷ്ട്രീയ സാംസ്കാരിക മണ്ഡലങ്ങളിൽ ഏറെ സ്വാധീനം ചെലുത്താൻ ഇവയ്ക്കു കഴിഞ്ഞിട്ടുണ്ട്. അധികാരികൾ ജനങ്ങളുമായി സംവദിക്കാനും രാഷ്ട്രീയപ്രവർത്തകർ തെരഞ്ഞെടുപ്പ് പ്രചരണം നടത്തുന്നതിനും

ഇവ ഉപയോഗിക്കുന്നു. ഇങ്ങനെ ജീവിതത്തിന്റെ സമസ്തമേഖലകളിലും കടന്നു കയറിയ സോഷ്യൽ നെറ്റ്‌വർക്കുകൾ സാഹിത്യത്തിനും വിഷയമായി തീരുന്നു.

ടെലിവിഷൻ, കമ്പ്യൂട്ടർ, ഇന്റർനെറ്റ്... തുടങ്ങിയ ഇലക്ട്രോണിക് മാധ്യമങ്ങൾ സൃഷ്ടിക്കുന്ന പുതിയ സാങ്കേതിക സംസ്കാരത്തിന്റെ രാഷ്ട്രീയം മലയാള സാഹിത്യത്തിൽ ആധുനികാനന്തരയുടെ ആഖ്യാന പരിസരമായി രൂപപ്പെട്ടു. വൻ സാമ്പത്തിക ശക്തികൾക്കു കീഴിൽ ദേശരാഷ്ട്രങ്ങൾ തന്നെ അഴിഞ്ഞു പോകുന്ന രാഷ്ട്രീയാവസ്ഥയും സ്ഥലകാലങ്ങളുടെ അന്ത്യം സാധ്യമാക്കിയ സാങ്കേതികതയും അധിയാമാർത്ഥ്യത്തിന്റെയും പ്രതീതി യാമാർത്ഥ്യത്തിന്റെയും മണ്ഡലങ്ങൾ പ്രസക്തമാക്കിയ സാംസ്കാരികതയും ചേർന്ന് നൂതനമായൊരു ഭാവുകത്വപരിസരം ഇവ സൃഷ്ടിക്കുകയുണ്ടായി. സൈബർ സാഹിത്യമെന്ന ഓമനപ്പേരും നൽകി. 'തിമോത്തിലെവി'ന്റെ അഭിപ്രായത്തിൽ മനുഷ്യപരിണാമത്തിലെ അടുത്തഘട്ടത്തിന്റെ മിത്തുകളും ഇതിഹാസങ്ങളുമാണ് സൈബർ സാഹിത്യം.

ഇന്ന് നാം ആഗോളവത്കരണത്തിന്റെ പിടിയിലാണ്. അറിവുകളുടെ വേഗമാർന്ന കൈമാറ്റങ്ങളും അസംഭൂതപൂർവമായ ചലനാത്മകതയുമാണ് അവിടെയുള്ളത്. മുതലാളിത്തവും വ്യവസായവത്കരണവും സാമൂഹികവും രാഷ്ട്രീയവുമായ ദർശനങ്ങളും അതിൽ അന്തർവേിച്ചിരിക്കുന്നു. ഇലക്ട്രോണിക് മാധ്യമങ്ങളുടെ അതിപ്രസരം, ഇവപടച്ചുവിടുന്ന ബിംബങ്ങളുടെ ധാരാളിത്തം, ആഗോളതലത്തിൽ വികസിച്ചു വരുന്ന വ്യാവസായിക കച്ചവടശൃംഖലകൾ, പൊള്ളയായിത്തീർന്ന വ്യക്തിത്വങ്ങൾ, യാത്രികമാകുന്ന മനുഷ്യബന്ധങ്ങൾ, ബഹുജനമാധ്യമങ്ങളുടെ അലോസരപ്പെടുത്തുന്ന ഇടപെടലുകൾ, കമ്പോളസംസ്കാരത്തിന്റെ വൈകൃതങ്ങൾ ഇവയാണ് സൈബർ സാഹിത്യത്തിൽ പ്രകടമാകുന്നത്. മനുഷ്യന്റെ സ്വകാര്യതകളിൽ ഒളിഞ്ഞു നോക്കുന്ന ദൃശ്യമാധ്യമങ്ങളുടെ നിർലജ്ജത അവൻ രോഷത്തോടെ തിരിച്ചറിയുന്നു. നഗരപശ്ചാത്തലത്തിൽ വേരുകൾ നഷ്ടപ്പെട്ട മനുഷ്യന്റെ ഒറ്റപ്പെടലും അവന്റെ നിസ്സഹായമായ അസ്തിത്വം തേടലും സൈബർ സാഹിത്യത്തിന്റെ മുഖ്യപ്രമേയമായി.

ആധുനികതയുടെ വക്താവായി മലയാള നോവൽരംഗത്തേക്കു കടന്നുവന്ന സേതുവിന ഉത്തരാധുനികതയുടെ പരിസരത്തും തന്റേതായൊരിടം ഉറപ്പിക്കാൻ കഴിഞ്ഞു. കുടുംബബന്ധങ്ങളിൽ കെട്ടുപിണഞ്ഞുകിടക്കുന്ന വ്യക്തികളുടെ ധർമ്മസങ്കടങ്ങളും സ്വന്തം മണ്ണിന്റെ നനവിൽ ജീവിതം പൊലിപ്പിച്ചു കൊണ്ടുവരാനുള്ള ആന്തരികദാഹവും സേതുവിന്റെ രചനകളിൽ പ്രകടമാണ്. സമൂഹം രൂപപ്പെടുത്തിയ നീതിശാസ്ത്രത്തിന്റെ തടവറയിൽ ജീവിക്കാൻ വിധിക്കപ്പെട്ട സ്ത്രീകൾ സേതുവിന്റെ ഇഷ്ടവിഷയമാണ്. സ്ത്രീയുടെ സ്വകാര്യത

കൾ, നൊമ്പരങ്ങൾ, പൊട്ടിത്തെറികൾ. . . സ്ത്രൈണത ഒട്ടും ചോർന്നുപോകാതെ ആവിഷ്കരിക്കുന്നു. ജീവിതം ഒരു പ്രഹേളികയോ സാമൂഹികയാഥാർത്ഥ്യമോ എന്ന ചിന്ത അവളെ എപ്പോഴും അലട്ടിക്കൊണ്ടിരിക്കുന്നു. അതിൽ നിന്നൊരുമോചനം വൈകാരികമായ ഒരനിവാര്യതയാണെന്ന് അവർ തിരിച്ചറിയുന്നുമുണ്ട്. ഇത്തരത്തിലുള്ള കഥാപാത്രത്തെയാണ് സേതു 'അടയാളങ്ങൾ'യിൽ അവതരിപ്പിക്കുന്നത്.

പേരു കേട്ട കമ്പനിയുടെ ഗ്രൂപ്പ് ഹെഡ് ക്വാർട്ടേഴ്സിലെ ഹ്യൂമൻറിസോഴ്സസ് വകുപ്പിന്റെ തലപ്പത്തിരിക്കുന്ന പ്രിയംവദാമേനോൻ. ആ ഗ്രൂപ്പിൽപ്പെട്ട രാജ്യത്തിന്റെ പലഭാഗത്തുമുള്ള കമ്പനികളിലെ ഏതാണ്ട് 6000 തോളം വരുന്ന ജീവനക്കാരുടെ മനുഷ്യശക്തിയെ ആവുന്നത്ര പ്രയോജനപ്പെടുത്തുകയെന്നതാണ് പ്രധാന ചുമതല. ജോലിയിൽ കൃത്യതയും ആത്മാർത്ഥതയും ഉള്ളവൾ. മധ്യവയസ്കയാണെങ്കിലും ആരെയും ആകർഷിക്കുന്ന സൗന്ദര്യം. കൂടും ബത്തിൽ പിറന്നതിന്റെ അന്തസ്സും ഐശ്വര്യവും കാത്തു സൂക്ഷിക്കുന്നവൾ. ഭർത്താവ് രഞ്ജിത്ത് ഉപേക്ഷിച്ചു പോയപ്പോഴും തളരാതെ നിന്നവൾ. ഇങ്ങനെ പ്രിയംവദയുടെ വിശേഷണങ്ങളെറേയാണ്. മകൾ നീതുവിന്റെ അച്ഛനും അമ്മയും കൂടപ്പിറപ്പും സുഹൃത്തുമെല്ലാം പ്രിയംവദയാണ്. ഒരു രാത്രി ഒന്നും പറയാതെ രഞ്ജിത്ത് ഇറങ്ങിയപ്പോൾ വലിയ നഗരത്തിൽ ഒറ്റപ്പെട്ട രണ്ടുജന്മങ്ങൾ. എന്നാലും നീതുവിന്റെ കൂട്ടുകാരികൾ അസൂയയോടെയാണ് ആ അമ്മയേയും മകളേയും കണ്ടത്. നീതുവിനും തന്റെ അമ്മയെക്കുറിച്ച് അഭിമാനമായിരുന്നു.

ഗോവായാത്രയ്ക്ക് മടിച്ചു നിന്ന പ്രിയംവദയെ നിർബന്ധിച്ച് പറഞ്ഞുവിട്ടത് നീതുവാണ്. അവളുടെ സ്വപ്നമായിരുന്നു ആ സെമിനാർ. വിവിധ കമ്പനികളിലെ ഹ്യൂമൻ റിസോർസസ് വകുപ്പുതലവന്മാരുടെ ഒരു ഒത്തുചേരൽ. അതിലുപരി ഏറെക്കാലമായി ഇ-മെയിൽ സമ്പർക്കം പുലർത്തിയിരുന്ന കൽക്കത്തക്കാരൻ പ്രൊഫ. ഡോ.റോയ്ചൗധരിയെ കാണാനുള്ള അവസരം. പ്രിയംവദയുടെ ഗുരുസ്ഥാനത്താണ് അദ്ദേഹത്തെ കാണുന്നത്. വായനയും എഴുത്തും പ്രഭാഷണങ്ങളുമൊക്കെയായിട്ട് ജീവിക്കുന്ന മനുഷ്യൻ. ഇടയ്ക്കൊക്കെ ചില വിദേശയാത്രകളും. ലോകത്തിന്റെ ഏത് മൂലയിലിരുന്നാലും കണിശമായി കാലത്തും വൈകിട്ടും ഒരു അനുഷ്ഠാനം പോലെ ഇ-മെയിൽപെട്ടി തുറക്കാറുണ്ട്. “കഴിഞ്ഞ അരനൂറ്റാണ്ടിൽ ഈ മഹാപ്രപഞ്ചത്തിലുണ്ടായ ഏറ്റവും വലിയ അത്ഭുതങ്ങളിലൊന്നായി ഇ-മെയിൽ സൗകര്യത്തെ അദ്ദേഹം കാണുന്നു” എന്നാൽ പ്രിയംവദയെ നേരിൽ കണ്ടപ്പോൾ കൃത്രിമഗ്രഹങ്ങളിലൂടെ പറത്തി വിടുന്ന ഇ-മെയിലുകളുടെ പരിമിതികളെക്കുറിച്ചാണ് അദ്ദേഹം വാചാലനായത്. അവയ്ക്ക് മറുവശത്തിരിക്കുന്ന ആളെപ്പറ്റി കാര്യമായ സൂചനകളൊന്നും തരാനാവില്ല. പലപ്പോഴും ചെറിയ ഊഹങ്ങൾ പോലും തെറ്റിപ്പോകുന്നു. ഇ-

മെയിൽ സന്ദേശങ്ങളിൽ പോലും ഔചിത്യപൂർണ്ണമായ വാക്കുകൾ തെരഞ്ഞെടുത്തിരുന്ന ഡോ.ചൗധരി മറ്റേതൊരു പുരുഷനെയും പോലെ പെണ്ണിന്റെ മുമ്പിൽ ചാപല്യങ്ങൾകാട്ടുന്നത് ഞെട്ടലോടെ അറപ്പോടെ പ്രിയംവദ തിരിച്ചറിഞ്ഞു. ഉയരത്തിൽ പ്രതിഷ്ഠിച്ചിരുന്ന വലിയ വിഗ്രഹമാണ് അപ്പോൾ തകർന്നു വീണത്. അതോടൊപ്പം ഒരമ്മയുടെയും മകളുടെയും ജീവിതവും.

ഗോവയിൽ നിന്ന് വന്നപ്പോൾ പ്രിയംവദയിലുണ്ടായ മാറ്റം നീതുവിന് സഹിക്കാൻ കഴിഞ്ഞില്ല. തന്റെ അമ്മ തന്നിൽ നിന്ന് എന്തൊക്കെയോ മറയ്ക്കുന്നതായി അവൾക്കു തോന്നി. പിന്നീട് കാര്യങ്ങൾ അറിഞ്ഞപ്പോൾ അവൾ അമ്മയെ വെറുത്തു. വിശാലമായ ലോകത്തിൽ താൻ വീണ്ടു ഒറ്റപ്പെടുന്നത് വേദനയോടെ പ്രിയംവദ അറിഞ്ഞു. വല്ലാത്ത അസ്വസ്ഥത തോന്നുമ്പോഴൊക്കെ പ്രിയംവദ കമ്പ്യൂട്ടറിനു മുന്നിൽ ധ്യാനത്തിലിരിക്കും. ഒന്നുകിൽ നെറ്റിൽ എന്തെങ്കിലും തിരയുകയായും. അല്ലെങ്കിൽ ആർക്കൊക്കെ അയയ്ക്കാനുള്ള മെയിലുകൾ. ഉള്ളുകലങ്ങുമ്പോൾ ഒന്നും ഒളിച്ചു വെയ്ക്കാൻ കഴിയില്ല. വേണ്ടാത്ത വാക്കുകളാണ് മിക്കപ്പോഴും തള്ളിക്കയറിവരുന്നത്. അവയെ പറഞ്ഞു കൈവിട്ടു കഴിഞ്ഞാൽ ഒരിക്കലും തിരിച്ചെടുക്കാൻ കഴിയില്ല. അവിടെയാണ് ഇ-മെയിലുകളുടെ ഏറ്റവും വലിയ സൗകര്യം തിരിച്ചറിയുന്നത്. ആദ്യം ഒരാവേശത്തിൽ കുറിച്ചിടുന്ന വാക്കുകളെ പിന്നീട് തിരുത്താൻ കഴിയും. അവിടുവടെയായി എത്രയോ മായക്കലും വെട്ടിത്തിരുത്തലും ഒടുവിൽ ഏതാണ്ട് തൃപ്തിയാകുമ്പോൾ ചെറിയൊരു തട്ടലോടെ ആകാശത്തേക്ക് പറത്തിവിടാവുന്ന സന്ദേശങ്ങൾ അവയാണ് പ്രിയംവദയുടെ ജീവിതത്തെ മുന്നോട്ട് നയിച്ചത്. എന്നാലിന്ന് അവയെ അവൾ വല്ലാതെ ഭയക്കുന്നു.

പ്രിയംവദയിലുണ്ടായ മാറ്റം നീതുവിന്റെ സ്വഭാവത്തെയാകെ മാറ്റിമറിച്ചു. അമ്മയും മകളും തമ്മിൽ സംസാരിക്കുന്നതു തന്നെ അപൂർവ്വമായിട്ടാണ്. കമ്മ്യൂണിക്കേഷൻ തീർത്തും അസാധ്യമായ, നാലു ചുവരുകൾ കൊണ്ട് തല്ലികുട്ടിയ ഒരു വലിയ കുടിനെ എങ്ങനെ വീടേന്ന് വിളിക്കുമെന്നാണ് തന്റെ അസിസ്റ്റന്റ് രേവതിയോട് ചോദിക്കുന്നത്. അമ്മയുമായുള്ള അകൽച്ച അവളെ അച്ഛനോടടുപ്പിച്ചു. തന്റെ കുട്ടിക്കാലത്തെ പിച്ചിച്ചീന്തിയ, തന്റെ സ്വപ്നങ്ങളിൽ തടിച്ചുരുണ്ട ചുണ്ടുവിരലായ തന്നെ ഭയപ്പെടുത്തിയിരുന്ന അച്ഛനിൽ അവൾ നന്മകൾ കാണാൻ തുടങ്ങി. നീതുവിനു വേണ്ടി ആളുകളുടെ ഒരുപാടു കുത്തുവാക്കുകൾ കേട്ട്, നാല്പതാളുകളുടെ ദുർമുഖങ്ങൾ ഉള്ളിൽ കണ്ട് നാലാളുകളുടെ മുന്നിലൂടെ നിവർന്നു നടന്ന് തന്റേതായ സാമ്രാജ്യം സ്ഥാപിച്ച പ്രിയംവദയെ കുറ്റപ്പെടുത്താൻ തുടങ്ങി. അതാകട്ടെ പ്രിയംവദയ്ക്ക് സഹിക്കാവുന്നതിലും അപ്പുറമായിരുന്നു. നീതുവിന് അമ്മയറിയാത്ത രഹസ്യങ്ങളുണ്ടായിരിക്കുന്നു. അവൾ സെൽഫോൺ സ്വന്തമാക്കി. എങ്ങനെയെന്ന് അമ്മ ചോദിച്ചില്ല. കുറെ നാളുകളായി അത്യാവശ്യത്തിനുമാത്രമുള്ള സംഭാഷണങ്ങളിൽ

ലേക്ക് അമ്മയും മകളും തമ്മിലുള്ള ബന്ധം ഒതുങ്ങിയിരിക്കുന്നു. എപ്പോഴും നീതുസെൽഫോണുമായി ബാൽക്കണിയിലെ ഒരു മൂലയിൽ ആരോടോ സംസാരിച്ചു കൊണ്ടു നിൽക്കും വീട്ടിനകത്തു വെച്ച് മകളോട് സെൽഫോണിൽ സംസാരിക്കേണ്ടിവരുതെന്നാണ് പ്രിയംവദയുടെ പ്രാർത്ഥന. സെൽഫോണിന് ചെന്നെത്താനാവത്ത ഒരു മൂലപോലുമില്ല നഗരത്തിലെന്ന് നീതു പറഞ്ഞപ്പോൾ , ഒരു പക്ഷേ നഗരത്തിനു വെളിയിൽ, സെല്ലുകളുടെ മാന്ത്രിക വലയത്തിനപ്പുറമൊരുനിരത്തിൽ താൻ സ്വസ്ഥമാകുമെന്ന് പ്രിയംവദ ആശിച്ചു.

ഇ-മെയിലും സെൽഫോണും മാത്രമല്ല ടെലിവിഷനും അവരുടെ ജീവിതത്തിൽ ഒരു കഥാപാത്രമായി വരുന്നുണ്ട്. ടെലിവിഷനിൽ തെളിഞ്ഞ മുഖവുമായി പ്രത്യക്ഷപ്പെടാറുള്ള നീലിമ അവരുടെ ജീവിതത്തെ ഒളിഞ്ഞു നോക്കാറുണ്ട്. പലപ്പോഴും പ്രിയംവദയെ സാന്ത്വനിപ്പിക്കുകയും ചിലപ്പോഴൊക്കെ ശാസിക്കുകയും ചെയ്യുന്നു. നീതുവിൽ വന്ന മാറ്റങ്ങൾ ചെറുപ്പത്തിന്റെ ഊടുവഴികളിലൂടെയുള്ള യാത്രയാണെന്ന് കാണുന്നത്. തങ്ങളുടെ വാക്കുകൾ ഒരിക്കലും തെറ്റാറില്ലെന്നും കാലങ്ങളിലൂടെ കടന്നുപോകാൻ കെല്പുള്ളതാണ് തങ്ങളുടെ കാഴ്ചശക്തിയെന്നും പറയുന്നുണ്ട്. മാധ്യമലോകത്തിന്റെ ഉറച്ച ഉറപ്പാണ് നാം നീലിമയുടെ സ്വരത്തിൽ കേൾക്കുന്നത്. പ്രിയംവദ നീതുവിനോട് തട്ടിക്കയറുമ്പോൾ നീലിമ ശാസിക്കുന്നു. അവർ രണ്ടുപേരും എല്ലാ അതിരുകളും കടക്കാൻ തുടങ്ങിയിരിക്കുന്നുവെന്നും സൂക്ഷിച്ചാൽ എല്ലാവർക്കും നല്ലതെന്നും ചൂണ്ടിക്കാണിക്കുമ്പോൾ പ്രിയംവദ വളരെ ക്ഷോഭിച്ചു. നിന്റെയൊക്കെ ജീവിതത്തിൽ ഇങ്ങനെ സംഭവിക്കാതിരിക്കട്ടെ എന്ന് പറഞ്ഞു. അപ്പോൾ താനുൾപ്പെടുന്ന മാധ്യമലോകത്തിന്റെ കഷ്ടതകളാണ് നീലിമ വിവരിച്ചത്. തങ്ങളുടെ നിയോഗം എപ്പോഴും സാക്ഷികളാവുകയെന്നതാണ്. ഒരളവിൽ അതൊരു മഹാശാപമാണ്. ആരോ തട്ടിക്കൂട്ടിയ കറുത്ത ചതുരകൂട്ടിനകത്തിരുന്ന് ഇത്തരം വേണ്ടതും വേണ്ടാത്തതുമായ കാഴ്ചകൾ കാണേണ്ടിവരുമ്പോൾ, നിർദ്ദേഷമായ ചില കമന്റുകളിലൂടെ ഇടപെടേണ്ടിവരുമ്പോൾ, അത്തരം ഇടപെടലുകളുടെ വ്യർത്ഥന നന്നായി തിരിച്ചറിയുന്നുണ്ട്.

നീലിമയുടെ പ്രവചനം പോലെ നീതു അമ്മയിലേക്കു തന്നെ മടങ്ങിവന്നു. പക്ഷേ അപ്പോഴേക്കും പ്രിയംവദയുടെ മനസ്സ് മടങ്ങിവരാൻ പറ്റാത്തതിടത്തോളം സഞ്ചരിച്ചു കഴിഞ്ഞു. വഴിയേ പോകുന്നവർക്കൊക്കെ പെരുവഴിയിലിട്ട് കൊത്തിക്കീറി പരിശോധിക്കാനായി പ്രിയംവദയെന്ന ആരും ചോദിക്കാനില്ലാത്തൊരു സ്ത്രീയുടെ ജീവിതം എറിഞ്ഞു കൊടുക്കാൻ അവൾ തയ്യാറല്ലായിരുന്നു. പിന്നീട് നീതുവിന്റെ അമ്മേ എന്നുള്ള വിളികേൾക്കാൻ അവൾ നിന്നില്ല. ഒരു ജന്മത്തിന്റെ മുഴുവൻ സുഖദുഃഖങ്ങളും കറുപ്പും വെളുപ്പുമായി ശരീരത്തിൽ അടയാളപ്പെടുത്തിയ, പൂർവജന്മത്തിലെ വിധവകളായ പെൻഗിനുകളെ

പോലെ ഏകാന്തമായ ഹിമധ്രുവങ്ങളിൽ തപസ്സു ചെയ്യാൻ വിധിക്കപ്പെട്ടവളായി പ്രിയംവദമാറി. സെൽഫോണിനോ ഇ-മെയിലിനോ ചെന്നെത്താൻ കഴിയുന്നതിനും അപ്പുറമായി പ്രിയംവദയുടെ ലോകം.

ജീവിതത്തിലെ എല്ലാ മേഖലകളിലും സാന്നിധ്യമാകുകയാണ് സോഷ്യൽ മീഡിയ. ബിസിനസും സൗഹൃദവും നിലനിർത്താനും കൂടുതൽ ഉയരങ്ങളിലേക്കു നീങ്ങാനും സഹായിക്കുന്നു. ആകർഷണീയമായ വാക്കുകളെ സമർത്ഥമായി സംവേദനം ചെയ്ത ആയിരങ്ങളെയും ലക്ഷങ്ങളെയും കൈയിലെടുക്കുന്നു. വായനക്കാരൻ സോഷ്യൽ നെറ്റ്‌വർക്കുകളിൽ രാജാവാകുമ്പോൾ രാഷ്ട്രീയവും സാമൂഹികവുമായ പല മാറ്റങ്ങൾക്കും ഫേസ്‌ബുക്കും ട്വിറ്ററും വേദിയായാകുന്നു. ജനങ്ങൾക്ക് പുതിയകാലത്തെ അതിന്റേതായ കാഴ്ചപ്പാടിലൂടെ നോക്കിക്കാണാനും അതാതിടത്തെ ഭരണകൂടങ്ങളുടെ പ്രവർത്തനങ്ങളെ വിലയിരുത്താനും വിമർശിക്കാനുമുള്ള അവസരം ലഭിക്കുന്നു. പ്രിയംവദയുടെ ഫാക്ടറിയിൽ വിവരസാങ്കേതികതയുടെ കടന്നുകയറ്റത്തെ ആദ്യം ഭയപ്പാടോടെയാണ് തൊഴിലാളികൾ കണ്ടത്. എന്നാൽ ടെക്നോളജിയോടുള്ള എതിർപ്പ് രൂപം കൊള്ളുന്നത് മിക്കപ്പോഴും അറിവില്ലായ്മയിൽ നിന്നാണെന്ന് തിരിച്ചറിഞ്ഞപ്പോൾ അവർ അതിനെ സ്വാഗതം ചെയ്തു. പിന്നീട് വൻ വിജയമാണ് അവിടെ പ്രിയംവദയ്ക്കും രേവതിയ്ക്കും നേടിയെടുക്കാൻ കഴിഞ്ഞത്.

പ്രിയംവദയുടെ ജീവിതത്തിൽ എക്കാലത്തും 'e' ലോകത്തിന് അമിതപ്രാധാന്യമായിരുന്നു. താനും മകളും വലിയ നഗരത്തിൽ ഒറ്റപ്പെട്ടുവെന്നറിഞ്ഞത് രഞ്ജിത്തിന്റെ ഫോൺകോളുകളിലൂടെയാണ്. പലപ്പോഴുള്ള പ്രിയംവദയുടെ ബിസിനസ്സ് യാത്രകളിൽ അമ്മയ്ക്കും മകൾക്കുമിടയിൽ വന്നു ചേരുന്ന അകലം പൂരിപ്പിക്കുന്നത് ദീർഘനേരം നീണ്ടു നിൽക്കുന്ന ഫോൺ വിളികളാണ്. പലപ്പോഴും ജീവിതത്തിൽ തളർന്നു പോകുമ്പോൾ ആശ്വാസമാകുന്നത് സുഹൃത്തുക്കളുടെയും മറ്റും ഫോൺവിളികളും ഇ-മെയിലുകളുമാണ്. തന്റെ ജീവിതത്തെയാകെ മാറ്റിമറിച്ച ഡോ.റോയ്ചൗധരിയെ പരിചയപ്പെടുന്നതും വെറുക്കുന്നതും ഇ-മെയിലിലൂടെയാണ്. പ്രിയംവദയുടെ അടുക്കൽ നീതു സുരക്ഷിതയല്ലെന്ന അജിത്തിന്റെ താക്കീത് ലഭിക്കുന്നതും ഇ-മെയിൽ തന്നെയാണ്. അമ്മായിയുടെയും അമ്മാവന്റെയും ഉപദേശങ്ങൾ എത്തുന്നതാകട്ടെ ടെലിഫോൺ വഴിയും. അവരുടെ മറുപടി പ്രതീക്ഷിക്കുന്നത് ഇ-മെയിലിലൂടെയാണ്. നമ്മുടെ സ്വകാര്യതയിലേക്കുള്ള മാധ്യമങ്ങളുടെ കടന്നുകയറ്റമാണ് നീലിമയുടെ ഇടപെടൽ വ്യക്തമാക്കുന്നത്. എന്തൊക്കെയാലും തന്റെ ജീവിതത്തിൽ നിന്ന് ഒരിക്കലും പ്രിയപ്പെട്ട ഇ-മെയിൽപെട്ടിയെ മാറ്റി നിർത്താനാകുന്നില്ല. ആശുപത്രിവാസം കഴിഞ്ഞ് പ്രിയംവദ നേരെ പോയതും അതിനടുത്തേയ്ക്കാണ്. 'ഒരു രണ്ട് ദിവസത്തേക്കെങ്കിലും ഈ കുന്ദാണ്ടം ഒഴിവാക്കിക്കൂടെ?' എന്ന രേവതിയുടെ ചോദ്യത്തിന് ഇത് തന്റെ ദിനചര്യയുടെ ഭാഗമാ

ണെന്നാണ് പറയുന്നത്. മെയിലുകൾ കാണാതെയുള്ള നാലഞ്ച് ദിവസത്തെ ഇടവേളകളെപ്പറ്റി അവർക്ക് ആലോചിക്കാനേ കഴിയുമായിരുന്നില്ല. പക്ഷേ അവളുടെ ജീവിതത്തിലും സോഷ്യൽ നെറ്റ്‌വർക്കുകളുടെ സാന്നിധ്യമില്ലാത്ത ഒരു ലോകം വന്നു ചേരുന്നതാണ് നാം കാണുന്നത്. ഇ-ലോകത്തിന് തന്റെ അമ്മ സ്നേഹവാത്സല്യങ്ങൾ പകരാനാകില്ലെന്ന തിരിച്ചറിവാണ് നീതുവിനെ അമ്മയുടെ അടുക്കൽ എത്തിക്കുന്നതും.

ശാസ്ത്രത്തിന് രണ്ടു വശങ്ങളുണ്ട്. നല്ലതും ചീത്തയും. ഒരേ സമയം രക്ഷ കനും ശിക്ഷകനുമായി പ്രവർത്തിക്കുന്നു. അനുകൂലം വികസിച്ചു കൊണ്ടിരിക്കുന്ന വിവരസാങ്കേതികവിദ്യയുടെ ലോകത്ത് വിവേകബുദ്ധിയോടെ പ്രവേശിക്കണം. സമൂഹത്തിലെ അപച്യുതികളും മൂല്യച്യുതികളും പതുങ്ങിയിരിക്കുന്ന ചതിക്കുഴികളും മനസ്സിലാക്കാൻ കഴിയണം. ഇന്ന് സമൂഹത്തിൽ പെരുകി വരുന്ന ഉപഭോഗസംസ്കാരത്തിനും മാത്സര്യത്തിനും ദൃശ്യമാധ്യമങ്ങൾ വലിയ പങ്കുവഹിക്കുന്നുണ്ട്. സോഷ്യൽ നെറ്റ് വർക്കിങ് സൈറ്റുകൾ കാലഘട്ടത്തിന്റെ വെല്ലുവിളിയായി മാറിയിരിക്കുന്നു. അവ നിയന്ത്രണത്തോടെ ഉപയോഗിച്ചില്ലെങ്കിൽ യുവതലമുറ വഴിതെറ്റാനിടയുണ്ട്. സാമൂഹിക നന്മകളും തിന്മകളും പ്രതിഫലിക്കുന്ന കണ്ണാടിയാണ് മാധ്യമങ്ങൾ. അവ വേർതിരിച്ച് അറിയാനുള്ള ഔചിത്യബോധമാണ് നാം ഓരോരുത്തർക്കും ഉണ്ടാകേണ്ടത്.

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