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*Higher education plays an indispensable role in society by creating new knowledge, transmitting it to students, and fostering innovation. Research is imperative in higher education because it helps to improve the quality of education and the overall student experience. Moreover, it also helps to advance the knowledge and understanding in a particular field or discipline. Accordingly, students writing is an area of prime concern in the academic domain. The Carmel Bloom, a Multidisciplinary Research Journal of the students of Carmel College (Autonomous), Mala, is a venture towards those ends. It is an endeavour to meet the expectations of students and the requirements of the periods, both today and in the future. The 9<sup>th</sup> volume of Carmel Bloom proliferates with research articles from students of various disciplines such as Literature, Humanities, Science, and Commerce. From the inception, the journal has been providing a platform for the students of Carmel to expose their writing competency and research aptitudes in different academic disciplines. We express our sincere appreciation and indebtedness to all the students who have contributed articles for the publication of the Carmel Bloom 2023.*



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**A Study on Influence and Public Awareness about Palliative  
Care within the Public Health Framework (*With Special  
Reference to Poyya Panchayath*)**

**Aleena Antony P. A.**  
M. A. Sociology

**Abstract**

*As per the World Health Statistics 2022, in an ideal world, an increase in life expectancy would be driven primarily by an increase in years lived in good health, with a shrinking proportion of years lived in disability. At the global level, healthy life expectancy as a proportion of life expectancy at birth has remained essentially constant since 2000 at around 88-89% for men and 84-87% for women. On average, people are living longer, but their extended longevity is accomplished by rising levels of ill health and disability. The need for the expansion of health frameworks is increasing. Palliative care as a Home-Based Service, awareness, and access to this framework is inevitable. For the well-functioning of the society, individual health is mandatory. Treating non-communicable and communicable diseases for economically backward people is a social issue in society. Here lies the relevance of this study and the study is based on the rural society- Poyya Gram panchayath in Thrissur District.*

**Introduction**

Palliative care is a health care specialist that is both a philosophy of care and an organized, highly structured system for delivering care to persons with life-threatening or debilitating

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illnesses from diagnosis to death and then into bereavement care for the family. Palliative care improves healthcare quality in three domains: the relief of physical and emotional suffering; improvement and strengthening of the process of patient-physician communication and decision- makings and assurance of coordinated continuity of care across multiple healthcare settings- hospitals, home, hospices, and long-term care. (Indian Journal of Palliative Care, 2012)

In “Palliative care in Kerala: A Success Story”, explain that the government of Kerala has been integrating palliative care with health care policy at all levels in a three-tier system. The 2008 policy, updated last year, specifies neighbourhood networks- coordinated with NGOs with trained staff who can identify patient’s needs and provide home care at the primary (panchayath/ municipality/ corporation) level. (Rohan Manoj, 2020)

But still, there is a lack of awareness among health professionals, and the public about what palliative care is, the benefits it can offer patients and health systems, and cultural and social barriers, such as beliefs about death and dying. Many studies were conducted on palliative care and its needs. But there is a need for proper awareness among the people to know all about this healthcare system and its role in society. This study provides the current attitude towards palliative care, the barriers, and the solutions for awareness of the system among people.

### **Objectives**

1. To analyse the influence and public awareness on Palliative care.
2. To find out the level of socio-economic conditions of the inhabitants of Poyya panchayath.

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3. To identify the existing strategies to upgrade awareness about Palliative care services.

### **Concept Clarification**

- **Health-** According to the World Health Organization, “health is a state of complete physical, mental and social well-being and not merely the absence of disease and infirmity”.
- **Health Framework-** A framework is a real or conceptual structure intended to serve as a support or guide for building of something that expands the structure into something useful. The framework starts with the foundations of public health practice and moves on to amalgamation of activities that constitute the field.
- **Public Awareness-** Public awareness is the public level of understanding about the importance and implications of certain programme or activity.
- **Palliative Care-** Palliative care is a health care speciality that is both a philosophy of care and an organised, highly structured system for delivering care to persons with life-threatening or debilitating illnesses from diagnosis to death and then into bereavement care for the family.
- **Economic Problem-** All societies face economic problem, which is the problem of how to make the best use of limited, or scarce resources. The economic problem exists because, although the needs and wants of the people are endless, the resources available to satisfy the needs and wants are limited.

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- **Social Problem-** A social issue is a problem that influences many individuals within a society. A social issue has many categories. It is a common problem happening in our society. A social issue can be considered as a problem that influences many people and strive to solve the issue.

## **Methodology**

The population of this study is the respondents belonging to the inhabitants of Poyya panchayath. This study uses a simple random sampling method. The sample range for the selected study is the respondents of 100 inhabitants. Both primary and secondary data were used in the present study. Primary data were collected through interview schedule method from Poyya panchayath. The secondary data were collected from various books, journals or articles, and websites. The tool interview schedule was used for collecting the primary data from the respondents. All the questions were included as statements. The tool was prepared by the five-point scaling method. A mixed method was used in the study in which both qualitative and quantitative methods were used. For the analysis and interpretation of data aspect of research, the data was codified, tabulated and analysed with the help of statistical techniques of percentage, tables, cross-tables, Likert's scaling, and graphical representations.

There are some limitations to the dissertation. The major limitations were lack of time, money and the unwillingness of the people to answer the questions. The study was also limited by the vast area of the panchayath and gender classification.

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## Data Analysis and Interpretation

Data analysis and interpretation is the process of assigning meaning to the collected information and determining the findings, conclusions and significance. This study discusses three objectives. The first objective is to find out the level of socio-economic conditions of the inhabitants of Poyya panchayath. The second objective is to analyse the influence and public awareness of Palliative care. The third objective is to identify the existing strategies to upgrade awareness about Palliative care services.

**Table No.1. Occupation of the Respondents**

Sl. No.	Occupation	Number of Respondents	Percentage
1	Government	8	8%
2	Non-Government	40	40%
3	Unemployed	52	52%
Total		100	100%

Table no. 1. shows that fifty-two percent (52%) of the respondents are unemployed, forty percent (40%) of the respondents are working in the non-governmental sector and the remaining eight percent (8%) are working in the government sector. The table indicates that the majority of the respondents are unemployed.

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**Figure No.2 Awareness Programmes conducted by Palliative care.**

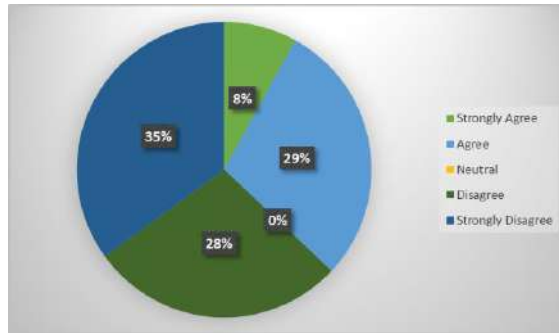


Figure No. 2. Indicates that people are not much aware of the awareness programmes conducted by Palliative care. Only eight percent (8%) of the respondents were aware of this statement and the other twenty nine percent (29%) of the respondents also agreed. But the remaining twenty eight percent (28%) of the respondents disagreed and thirty five percent (35%) of the population strongly disagreed with the statement.

The present study reveals that the respondents are unaware of the awareness programmes conducted by Palliative care.

**Figure No. 3 Most of the Palliative care services are for Cancer patients**

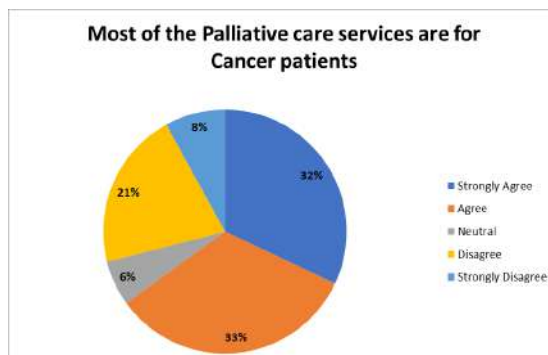


Figure No.3 shows the opinion on Palliative care services for cancer patients. Thirty two percent (32%) of the respondents strongly agreed and thirty three percent (33%) also agreed with the statement. But six percent (6%) of the population neutrally responded which means they do not agree or disagree. The remaining twenty one percent (21%) of the respondents disagreed and the other six percent (6%) strongly disagreed.

The present study clarifies some taboos on Palliative care services. People think that palliative care is only for cancer patients and only for dying patients. Palliative care services deal with all the patients who need care. So, this statement helps the researcher to understand that the people had a taboo on Palliative care.

**Table No. 4 Education and opinion about the need for public awareness of Palliative care**

Respondent's Education	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Primary	1 (33.33%)	1 (33.33%)	0	1 (33.33%)	0	3 (3%)
Upper Primary	6 (75%)	2 (25%)	0	0	0	8 (8%)
Secondary	9 (75%)	3 (25%)	0	0	0	12 (12%)
Higher Secondary	25 (67.56%)	12 (32.44%)	0	0	0	37 (37%)
College Level	22 (55%)	18 (45%)	0	0	0	40 (40%)

Total	63 (63%)	36 (36%)	0 (0%)	1 (1%)	0 (0%)	100 (100%)
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Table No. 4 indicates the opinion about the need for public awareness of Palliative care based on education. Sixty three percent (63%) of the respondents strongly agreed that there is a need for public awareness about Palliative care. Thirty six percent (36%) of the population also agreed with the statement and only one percent (1%) disagreed.

Here among the respondents belonging to the primary education category, 33.33% of this category strongly agreed, and 33.33% agreed with the statement. But at the same time, the remaining 33.33% of the population disagreed that there is no need for public awareness about Palliative care. In the upper primary category, 75% of the population strongly agreed and the other 25% agreed with the statement. This shows that upper primary category has fully agreed with the need for public awareness on Palliative care. The Secondary education category is also the same as the upper primary section. In the Higher Secondary category, 67.56% of the population strongly agreed and 32.44% agreed with the statement. Among the college level, 55% of the population strongly agreed and 45% of the remaining percent of respondents agreed with the statement.

The present study reveals that more educated people have the opinion that there is a need for public awareness about Palliative care as a public health framework. This shows that there is a lack of proper knowledge about this service system.



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## **Findings**

The present study reveals that more educated people have the opinion that there is a need for public awareness on Palliative care as a public health framework. This shows that there is a lack of proper knowledge about this service system.

The present study reveals that the majority of the respondents know that the Poyya panchayath had Palliative care but at the same time twelve percent (12%) of the respondents were unaware of this statement. More than two Palliative care service are available in this panchayath. Private Palliative services provide more facilities and people are more aware of them.

The present study reveals that eighteen percent (18%) of the respondents were unaware of Palliative care and its functions. People have heard about Palliative care services but they do not have proper knowledge about this system. More than sixty (60%) of the respondents are unaware of the awareness programmes conducted by Palliative care.

The present study reveals that Poyya panchayath has patients who do not get Palliative care services. Palliative care provides care for those who need it. By being informed by someone, Asha workers must be informed about the health issues in the ward on time. Thus, the Palliative care can expand its service to such patients.

Santhvanam Palliative Care is part of the Poyya panchayath and it provides special care to bedridden patients and home care services to old people. There are also other Private Palliative care

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services working in this panchayath as per the needs of the patients and their families. The present study reveals that some of the respondents know the name Santhvanam Palliative Care but at the same time some people are not familiar with this name. Eighty nine percent (89%) of the respondents have the opinion that health problems badly affect economically backward people. By this, it is clear that financial settings and health care are interrelated.

The present study shows that socio-economic status is very important in the life of people. Those who have wealth and social status get proper facilities. The quality of life can be measured through this socio-economic status. More than 90% of the respondents supported this statement. The present study reveals that Palliative care is a great help for economically weaker patients. More than ninety percent (90%) of the respondents positively responded to the statement. Lack of financial background affects the fulfilment of basic needs and there is a chance of health problems.

### **Suggestions**

- Public campaigning to increase public awareness and demand for Palliative care
- The Government should provide more policies and supporting programmes for Palliative care
- According to the ageing population, Palliative care service also need to expand its services.
- Provide orientations for the caretakers of the patients.
- The government should provide specialised doctors in Palliative care

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- Improve the availability, accessibility, and quality of Palliative care.
  - Make space for the public to participate in this service.
  - Develop educational materials and national norms and guidelines
  - The government should provide more infrastructure facilities for Palliative care.
  - Appointment of a social worker in Palliative care for social support to the family and patients.

## **Conclusion**

The present study was conducted among the inhabitants of Poyya panchayath in Thrissur District regarding the influence and public awareness on Palliative care within the public health framework. The study analyses people's attitudes and awareness about Palliative care.

The result of the study concludes that the majority of the respondents agreed with the statements. At the same time, the study found that there are knowledge gaps and misconceptions about Palliative care. The reason is that the limited personal experience and engaging in taboo conversations make people to avoid Palliative care in the early stages of diseases. The results indicate the need for public education programmes to raise awareness. Palliative care is for public health and this awareness changes the attitudes towards the service and it leads to improvements in end-of-life outcomes and public health approaches.

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Wendy Wen Lil, Jasleen Chhabra, and Smita Singh conducted a study namely, “Palliative Care Education and Its Effectiveness: A Systematic Review” in the year 2019. The background of the study was that the Palliative care education is an important public health approach to Palliative care and is crucial to improving its utilisation. The study aims to develop a comprehensive understanding of Palliative care education and its effectiveness.

The study used the method of systematic review approach including narrative synthesis, to review qualitative and quantitative studies published in the English language between January 1969 and January 2019, focusing on Palliative care education programmes. Definitions of death and Palliative care, symptom management, and communication were leading themes in the reviewed Palliative care education programmes.

The educational resources used in the Palliative care education programmes were mainly self-developed teaching materials, with some programmes utilising e-learning resources. The included Palliative care education programmes were effective in improving knowledge, attitude, and confidence in Palliative care, and the satisfaction of participant learning experience.

The study found that Palliative care education is a useful tool to improve knowledge, confidence, and attitudes towards Palliative care amongst the healthcare professionals and carers. It make the Palliative care a public and policy maker.

Likewise, the present study also disclosed that Palliative care needs more importance as a public health framework. Health is the

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basic factor that helps the proper functioning of the individuals as well as the society. So, the study states that Palliative care should expand its service and awareness for the care of diseased persons and their families.

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# **A Study of Valapattanam with Special Reference to Geographic and Economic Factors**

**Alkha Deepak K.T.**

M. A. History

## **Abstract**

*Valapattanam is a census town in the Kannur district of Kerala. It is also the smallest panchayat in Kerala. Its history can be traced back from the period of the Mushika dynasty onwards. Valapattanam River served as the main channel through which trade was conducted and goods reached to the markets in Northern Kerala. The region is also known for many plywood factories. The study exhibits the influence of geography in making the area known for its commercial and economic importance. The significance of the Valapattanam River along with the economic activities that prevailed in the region and the prominence of plywood factories is traced through this study. The study focused on how the geography and at large, the timber industries supported the economic development of the area.*

**Keywords:** *Mushika dynasty, Vallabhappattanam, Western India Plywoods*

## **Introduction**

Local history helps to study the past of a local area. It also helps in understanding the socio-economic and cultural aspects of the region. Valapattanam is a census town in the Kannur district of Kerala. It is also the smallest Panchayat in Kerala. During the ancient

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period, it was one of the main market places of northern Kerala. Valapattanam River served as the main pathway through which trade was conducted and goods reached to the market. The region has been known for many plywood factories. One of Asia's largest plywood factories, 'Western India Plywoods' is located here. In Kerala, after Kallayi in Calicut, Valapattanam was known for timber industries. Valapattanam has a history behind it. It is said that the town was named after its historical founder Vallabha II of the Mushika dynasty. It is considered as his capital in the ancient period. It was originally known as Valabhapattanam. Travelers like Ibn Batuta has mentioned about this town. As a result of the spread of Islam the majority of the population in the region are Muslims. The place is also peculiar for its geographical features. In Sanskrit, this place is known as Vriddhipuram and in Arabic as Balafatayan. Tipu Sultan and Chirakkal Raja used Valapattanam as their military base. Valapattanam Fort, even though not so famous today, has some historical significance. The Kakkulangara Mosque and the Kalarivathukal Temple, two famous religious centres of North Kerala exist in the area. The study focuses on the geographical and economic aspects of Valapattanam.

### **Concept**

Valapattanam was originally a part of Chirakkal village of Chirakkal Taluk in Malabar district. As per the State Re-organisation Act of 1956, the state of Kerala was formed on 1<sup>st</sup> November 1956, integrating Travancore- Cochin and Malabar districts. Subsequently, on 1<sup>st</sup> January 1957, the district of Malabar trifurcated into

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Cannanore, Kozhikode, and Palghat revenue districts and on the same date, old Chirakkal taluk bifurcated into Cannanore and Taliparamba taluks of the present Cannanore district. Accordingly, the Chirakkal village, a part of which constitutes the Valapattanam, became a separate village in the year 1965. Valapattanam is considered a census town and also the smallest Panchayath in Kerala with an area of only 2.04 sq. km.

While tracing the history of Valapattanam, the credit for its establishment goes to a ruler of Mushika dynasty of Ezhimala kingdom. A. Sreedhara Menon in his work *A Survey of Kerala History* mentioned the coastal tract between Badagara and Mangalore and the mountainous region lying to the East was under an illustrious line of kings who ruled with their capital at Ezhimala. The history of the Mushika Kingdom till about the 12<sup>th</sup> century A.D. is depicted in *Mushakavamsa* of Atula, the court poet of King Srikantha. There are references in *Keralolpathi* that the town being built by the Valabhan Permal. Valabha II is credited with the establishment of this business town by the name Valabhapattanam. *Keralamahatmyam* is the Sanskritised form of Valapattanam. This place is known by various names. It has been mentioned by travellers like Ibn Battuta in their works. The Arab travellers had mentioned about the commercial activities of Valapattanam. Valapattanam Fort, of which no material remains exist; the only remains of the Fort today are the granite doorsteps of the crumbling entrance. The Kalarivathukal temple and the Kakkulangara mosque reflect the religious harmony and cultural significance. Today, the Muslims form the majority population of Valapattanam.

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Valapattanam River plays a significant role in making the region a natural port providing the facilities for the conduct of trade. Malabar region was attracted by foreigners and Arab merchants, especially for its spices. They arrived here with an intention to involve in trading activities. William Logan in his *Malabar Manual* mentions the port with a fair amount of coastal trade. Crafts and country products were transacted in the market at Valapattanam. Valapattanam River originates in the Kodagu district, flows westward and joins the Arabian Sea. Trade through this port begins after the rainy season. Ships approach the port usually during the months of Makaram – Kumbham. Arabs and others used to come to Kerala for trade and carry pepper, cardamom and coconuts from here. Places like Kollam, Chaliyam, Kodungallur, Dharmadam, Valapattanam, and Ezhimala were famous as commercial centers. Valapattanam port is mentioned in different texts written in various periods. V K Musthafa's *Valapattanam Oru Charithra Padanam* mentions about those trading centres.

Valapattanam Grama Panchayath was also prominent on the industrial map with many timber companies and plywood factories. One of Asia's largest plywood factories, 'Western India Plywoods' is located in Valapattanam. It was due to the intervention of this industry in the commercial sector which raised the region to fame. It is a small area that has become central to the timber industry. Wooden logs and *malancharku* enlivened the market. The people of nearby areas also depended on the market. Small boats are used to approach the market through Valapattanam River. In short, all kinds of business ventures

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that keep the market alive have made the region known since ancient times.

The subject was actively considered in the writings of Arabs and foreign travellers and the progress in the exports and imports of products. The region is known for the timber trade. Nearly a century ago, Valapattanam riverside or coastal area was packed with trees that were brought from the forest and neighbouring areas. The woods were brought from the forest by lorries, rafts and also by tying it to the *ponthal* trees. Before the arrival of the Valapattanam railway, rafts were regularly used for the Valapattanam-Papinissery journey and for Mattur and Parassini.

The largest timber industries in Malabar are located in Kallayi, Kozhikode. Valapattanam has the next largest timber-based industries. Most of them are located on the southern bank of Valapattanam River which helps to transport timber from hilly areas. The role of Western India Plywoods cannot be neglected in making the region known for its timber trade. A. K Kadarkutty established Western India Plywoods in Valapattanam with a capital investment of 11.5 lakhs rupees. It was a small wood-based industry when it started in 1942. Now it has thousands of employees constituting both males and females. The logs freed from the Valapattanam River were transformed into tea boxes and plywood sheets through the magic of Western Indian Plywoods. The study deals with the geographical peculiarities of Valapattanam that helped it to develop an economic base in the region.

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## Conclusion

Valapattanam is a census town in Kannur district of Kerala. It is the smallest Grama Panchayat in Kerala having only 2.04 Sq. Km. It has a population of 7955 people. Above 80% of the people in Valapattanam are literate. The Muslim community is predominant in this area. Since it is the smallest Panchayat, it is densely populated. Gulf expatriates are common in this region.

Valapattanam has a history of being a business town established by Vallabhan II of the Mushika dynasty which might have been unknown to many. The place came to be known by different names like Valabhapattanam, Valarpattanam, Baliyapattanam etc. The Valapattanam River played a major role in promoting trade and establishing it as a business town.

Valapattanam has had a firm economic base since ancient times. A kind of trade-based small market existed. Also, the area is known for its good number of timber industries among which one important and prominent plywood industry is Western India Plywoods with more than seven decades of long history. It has been a strong supportive industry in establishing the economic stability of Valapattanam Panchayath. The area was blessed with river, rail and road transportation facilities for the procurement of industrial raw materials. The area has not excelled in agricultural activities. The smallness of the town and over congestion might be the reason for this. Agriculture was non-profitable when compared with trade and industry.

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The Valapattanam Panchayath is still in its developing stage. It has achieved progress in literacy and the Valapattanam Grama Panchayath library is regarded as one of the best panchayath libraries in Kerala. They undertake programs in order to provide awareness to the general public on various matters. The populated area faced the problems of the spread of diseases which were brought under control with the help of various initiatives taken by the Panchayath. Valapattanam Government Ayurvedic Dispensary and Valapattanam Government Homeo Dispensary were established.

The study made an attempt to understand the geographical and economic aspects of Valapattanam and how far the geographical peculiarities of the area supported to the development of a strong economic base. The study also tried to understand the historical background of the area.

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**An Investigation into the Mechanisms behind Successful  
Invasiveness in *Mimosa Diplotricha* C. Wright – A Noxious Weed.**

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**Abstract**

*Exotic plants are observed to invade in all possible habitat. There are many reasons why plants are established as a successive invasive species. Some of the key factors that help plants establish as an invasive species include morphological adaptations, presence of allelopathic compounds, and even plant growth promoting endophytic microbes. One such successful invasive weed is the giant sensitive plant *Mimosa diplotricha* C. Wright. On analysing the morphology and growth patterns of *M. diplotricha*, it was found that its hard plant body with thorns protects it from predators and high growth patterns which moreover restricts the survival of competitors for food, water and light. The high allelopathic potential of *M. diplotricha* was observed and this suggests that it may have discharged some allelopathic material into the environment. The preliminary phytochemical screening of aqueous extract of *Mimosa diplotricha* showed presence of Carbohydrates, Proteins, Phenols, Terpenoids, Flavonoids, Coumarins, and Cardiac glycosides. Cytotoxicity test conducted in *Allium cepa* roots grown in different concentrations of aqueous extract of *M. diplotricha*. Morphological, allelochemical and cytotoxic nature are the major reasons behind successful invasiveness of this noxious weed *Mimosa diplotricha*.*

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**Keywords:** *Mimosa diplotricha*; *Invasive Weed*; *Allelopathy*; *Cytotoxicity*.

## **Introduction**

There are exotic invading plants in practically every terrestrial habitat. Climate change, international commerce, and human mobility are all expected to have an impact on their capacity to spread and colonize new environments. These plants change the habitats they invade in a variety of ways, which impacts nearby species (Cormick, A. C. *et al.*, 2023). Invasive species utilize a wide array of trait strategies to establish in novel ecosystems. Among these traits is the capacity to produce allelopathic compounds that can directly inhibit neighbouring native plants or indirectly suppress native plants via disruption of beneficial belowground microbial mutualisms, or altered soil resources (Kalisz, S. *et al.*, 2021).

The ability to trigger rapid growth rates, high reproductive rates, better dispersal capacity, and excellent tolerance to a wide range of environmental conditions are just a few characteristics that invasive species frequently exhibit. (Bhatt, A. *et al.*, 2023; Wolkovich and Cleland, 2014; Bartz and Kowarik, I., 2019). Key factors in the occurrence and spread of foreign invasive plants include invasiveness (species' propensities to invade new habitats) and invasibility (a community's or habitat's sensitivity to the establishment and spread of alien species) (Grzedzicka., 2023).

Allelopathy describes a chemical generated by one plant type having a positive or negative impact on another plant kind. Allelopathic characteristics have been found in a variety of compounds, including phenolics, hydroxamic acids, and short-chain

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fatty acids (Stewart and Stewart, 2008). It is the phenomena in which an organism secretes biochemicals (sometimes referred to as allelochemicals), which can interfere with the growth and development of other species in either a good or negative way. Allelopathy uses plant-derived secondary metabolites in the treatment of illness and the control of pests as a defence mechanism (Choudhary *et al.*, 2023).

The *Mimosa* genus can be found growing in a variety of settings, from lowland tropical areas to subtropical forests, in a variety of soil types. It does well in soils with low pH levels, low levels of organic matter, and low levels of nutrients. *M. diplotricha* is one of a select few species that have evolved into pantropical weeds due to its adaptability to many soil types. The invasive weeds *M. pigra* L. and *M. pudica* L. are also well-known. The armed stem, pinnate and frequently sensitive leaves, globose inflorescence emerging from the leaf axils, and compressed flat pods separated transversely into one seeded segment are the typical characteristics of the genus. (Sharma, L.N., et. al., (2020))

In many countries throughout the world, including several in Africa, *Mimosa diplotricha* is a developing or established weed that has negative effects on biodiversity, pasture and crop production, and socio-ecological change (Witt *et al.*, 2020). Compared to native species, the invasive, *M. diplotricha*, exhibited increased germination rates, percentages, and times. (Bhagirath and David. 2008).

It had spread over the protected grasslands of the Brahmaputra floodplains in Northeast India, including Kaziranga National Park

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invasive plants is their fast seed production and vast dispersal. One of the key features that makes *M. diplotricha* a successful intruder in its non-native environment is its high seed output with low seed mass. A better management strategy for eradicating invasive species can be created by having a better understanding of seed production and germination behaviour (Choudery and Dep., 2019). Compared to native species, the invasive, *M. diplotricha*, exhibited increased germination rates, percentages. (Chauhan, B. S., & Johnson, D. E., 2008).

The present study was conducted to analyse the morphological factors that support the invasive weed *Mimosa diplotricha* to over dominate on neighbouring plants, to analyse the allelopathic potential of *Mimosa diplotricha*, and to study the cytotoxicity of aqueous leaf extract of *Mimosa diplotricha* using the root tips of *Allium cepa* as a eukaryotic model system.

## **Materials and Methods**

### **Materials**

#### ***Mimosa diplotricha* C. Wright.**

*Mimosa diplotricha*, also known as *M. invisa*, is a scrambling, heavily branched shrub with stems that may reach a length of 6 meters. It forms low, tangled masses or climbs other plants with the help of its spiky branches. Agricultural systems in particular are invaded by it, creating dense, impenetrable prickly thickets. The shrub has a durable seed bank and produces enormous amounts of seeds at a young age.

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### **Roots of *Allium cepa* L.**

The bulb onion or common onion is another name for *Allium cepa*. A common source of material for chromosomal studies is the onion bulbs that grow from the roots. The advantage of onion bulbs is that they may produce a large number of roots in a short duration of time. The size of the chromosomes is comparatively larger and can be easily observed and is accepted as a universal model system for cellular studies.

### ***Vigna unguiculata* L.**

Demonstration of the allelopathic action of the cowpea (*Vigna unguiculata*) is one extract using these plant seeds as a model is done. One of the most important food legume crops is the cowpea. The dried, healthy-looking seeds of *V. unguiculata* are purchased at the local market. The flotation test method was employed to guarantee viability.

### **Equipment and Glass Wares**

Nutrient broth, agar, culture plates, forceps, microscope, balance, measuring jar, glass rod, pipettes, petri dishes, cotton, test-tubes, test-tube stands, slides, coverslips, blotting paper, spirit lamp, standard flask, conical flask, beaker, laminar Air Flow, centrifuge, heater, water bath, calorimeter

### **Chemicals**

Carnoy's fluid, 1% hydrochloric acid, Acetocarmine, distilled water, chloroform, crystal Violet, Iodine, Safranin.

### **Methods**

**Morphological factors that support the invasive weed *Mimosa diplotricha* to over dominate on neighbouring plants.**

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Morphological features that support the survival of this invasive weed is studied by field visit and observation. Nature of stem, growth pattern, mode of reproduction, vegetative and sexual mode of reproduction, root system etc. were observed.

### **Determination of rate of elongation of shoot in *Mimosa diplotricha***

The healthy plants of *Mimosa diplotricha* grown in a natural ecosystem is selected for the study. The plants were collected from Nambiyankavu temple road, Thrissur. The growth of plants was assessed daily for fourteen days by measuring the length of the stem. The rate of stem elongation was computed as the difference between the final and initial length as given below.

$$\text{Growth rate day}^{-1} = \frac{L_2 - L_1}{d}$$

Where L1 is the initial length L2 is final length and d is number of days

Morphological adaptations of this weed is studied from the field by analysing the plant, its growth pattern, vegetative and sexual mode of reproduction, seed dispersal pattern, nature of the root system, presence and growth of neighbouring plants etc. the results obtained were documented (Figure: 1 and Figure: 2).

### **Collection and drying of *Mimosa diplotricha* leaves**

The plant leaves of *Mimosa diplotricha* were collected from Nambiyankavu temple road, Irinjalakuda, Thrissur and authenticated by Dr. Sr. Meena K Cheruvathur, of the Botany Department, St. Mary's college, Thrissur. The plant collected, dried and preserved as herbarium. Fresh and healthy leaves were selected and washed thoroughly for 3-4 times in running tap water to remove all the dust and unwanted visible particles and finally washed with sterile

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distilled water for proper cleaning. These are cut into small pieces and dried at room temperature. The dried plant material was powdered using an electric grinder and kept separately in airtight containers in refrigerator at 4<sup>o</sup> C for allelopathic studies and phytochemical screening.

### **Preparation of the *Aqueous* Extract of Leaves**

This research work was carried out using an aqueous extract from the leaves of *Mimosa diplotricha*, these plants were thoroughly washed in distilled water. These are cut into small pieces and dried at room temperature. Finally, the leaf pieces were powdered using electric grinder. Take 50 gram of leaf powder and mixed with 300 distil water using glass road. Heat the mixture and wait for boiling. The extract was filtered into a beaker using Whatman no: 1 filter paper. Finally, we got 50 ml extract. This fresh extract made without adding water was considered as 100 % concentration. Here we add 4 part of the extract. Then 3 part of extract was mixed with 1part of distilled water and was taken as 75% concentration. Then 2 part of the extract and 2 part of the distilled water were mixed to get a 50 % concentration .1 part of the extract was mixed with 3 part of distilled water to get 25% concentration.

### **Seed germination studies to identify allelopathic interaction of *Mimosa diplotricha***

The selected viable *Vigna unguiculata* seeds were transferred into a petri dishes filled with filter paper and cotton. In each petri dish 10 *Vigna* seeds were placed in such a way that the micropyle of the seed was placed downwards to keep in touch with extract in order to ensure proper absorption. Three sets of petri dishes were

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maintained as control. 100% of extract is poured to the second set and 75% is poured into the third set and 50% poured into the fourth set and 25% into the fifth set. The petri dishes were placed in an incubator. Triplicates were done at each time (Figure: 3).

### **Allelopathy Test**

Different concentrations of (25%, 50%, 75% and 100%) of the extract was prepared from stalk solution and the test is conducted using it.

The chosen viable *Vigna unguiculata* seeds were placed into Petri dishes containing cotton and filter paper, in order to achieve proper absorption. 10 *Vigna unguiculata* seeds per Petri dish were arranged so that the micropyle of each seed was positioned downward and in contact with the extract. As the control one petri dish was treated with distilled water. 100% of the extract was poured to the second set, 75% into the third set, 50% into the fourth set and 25% into the fifth. The Petri dishes with pea seeds was placed in a closed chamber permitting light. The growth of the seeds was noted each day for a week.

### **Test for Cytotoxicity (Onion Root Tip Assay)**

A standard test for the effects of a chemical on chromosomes and cell division was done using roots grown bulbs of onion (*Allium cepa*) ( $2n=16$ ), a traditional material for chromosome investigations. The advantage of onion bulbs is that they quickly grow big roots. The onion bulbs merely need to be scraped at the base so that new root buds are visible, and then they can be placed in moist paper to sprout roots. Suitable-length roots typically take two to three days to spread out.



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Just as allelopathic tests the onions were treated to 25%, 50%, 75%, and 100% of aqueous extract of *M. diplotricha* leaves. Onions were placed in 5 petri plates with cotton and tissue paper. Each one was treated with different concentrations of plant extract along with a control (distilled water). The root with growing tips were cut using blade and placed in dilute (1%) HCl and warmed.

Once root tip was placed on a slide and stained with 1% acetocarmine. Glycerine was added to it. A coverslip was softly put over the root tip. The thin end of the brush was carefully used to place the coverslip. A microscope was used to see the slide. Using a photomicrograph, images of the various mitotic stages and identified chromosomal abnormalities were captured.

### **Preparation of Onion Root Tip for Cytological Analysis**

Equal sized healthy dry brown pink onion bulbs (*Allium cepa* L.) of commercial variety onion ( $2n=16$ ) were obtained from local market. The pink brown dry outer scale and some of the brownish bottom plates of each bulb were removed carefully, leaving root primordium intact. Then it is placed in cotton wetted with distilled water for germination (control) and with various concentrations (25%, 50%, 75% and 100%) of aqueous leaf extract of *Mimosa diplotricha* for allelopathic studies. Onion bulbs rooted in moistened cotton wetted with distilled water is taken as control. Mitotic index and frequency of chromosomal aberrations were noted after treating with aqueous leaf extract of *Mimosa diplotricha* at various concentrations for various time intervals (2 hour and 12 hours). Results obtained were compared with that of control cells. After treatment, the root tips were cut with razor blade and placed in watch

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glass. The root tips were then treated with Carnoy's fluid (mixture of alcohol and acetic acid in 3:1 ratio) for fixation. The microscopic preparation was made by chromosome squash technique.

### **Analysis of the Cytological Parameters**

**Mitotic Index:** Mitotic index is a measure for the proliferation status of a cell population. It is defined as the ratio between the number of cells showing division in mitosis and the total number of cells multiplied by 100.

$$\text{MI} = \text{Number of dividing cell} / \text{total number of cells} \times 100$$

The mitotic aberrations were scored in the mitotic cells and the results were shown in the figures 4 and 5.

**The normal stages of mitosis:** The mitosis includes the following phases; during the process of mitosis, the chromosome passes through several stages known as prophase, metaphase, anaphase and telophase. The actual division of the cytoplasm is called cytokinesis and occurs during telophase. During each of the preceding stage, peculiar events occur that contribute to the orderly distribution of the replicated chromosomes prior to cytokinesis.

**Nuclear and chromosomal abnormalities:** Abnormalities in nuclear divisions and chromosomes were noted and photographed (Figure: 5).

### **Phytochemical Analysis**

Standard methods for preliminary phytochemical analysis were used (Gul *et al.*, 2017) to detect the presence of primary and secondary metabolites responsible for allelopathic and cytotoxic activities (Figure: 6 and 7).

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## Results

The present study was conducted to determine and understand the morphological and allelopathic factors that promote successful invasive potential of *Mimosa diplotricha*.

### **Analysis of Morphological Adaptations of *Mimosa Diplotricha***

Morphological features that support the survival of this invasive weed is studied by field visit and observation. Nature of stem, growth pattern, mode of reproduction root system etc. were observed. The following are the major morphological adaptations observed in *Mimosa diplotricha* (Figure: 1).

#### **Figure 1: *Mimosa diplotricha*-Morphological adaptations as a weed**

- 1) Fast growing over dominating stem and wider leaves prevent light penetration to underlying plants**



- 2) The globose head inflorescence of the plant carries large number of flowers**



- 3) Well developed strong root system with nitrogen fixing root nodles**



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- 4) Prickly stem as a defence against herbivori and adaption to climbing



- 5) Viable, small seeds with thick seed coat enhance shelf life and proect seed during dispersal



**Figure 2: *Mimosa diplotricha*-Reproductive adaptations**

- a) Large number of viable seeds produced in *Mimosa diplotricha*



- b) Flat legume like lomentum with large number of seeds



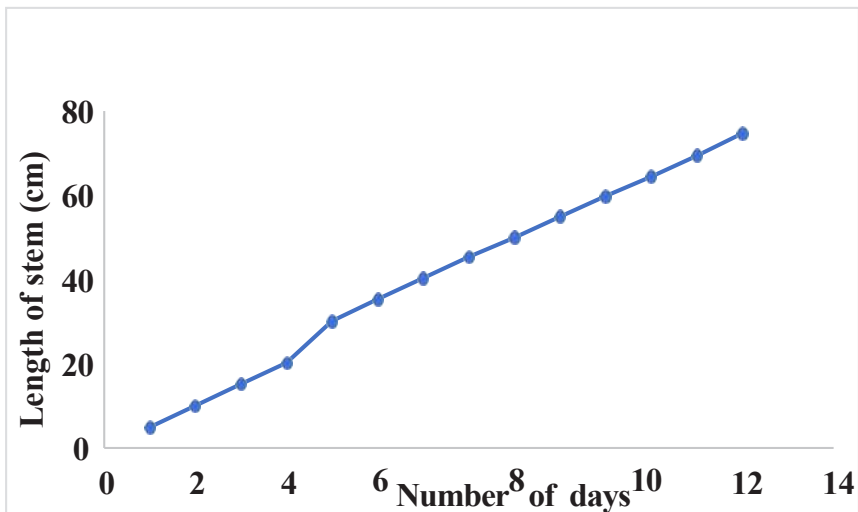
- c) Small spiny lomentum for seed dispersal by animals



Number of Days	Length of Stem Average of 10 plants) (cm)
1	4.9
2	10

3	15.2
4	20.2
5	30.1
6	35.3
7	40.3
8	45.4
9	49.9
10	54.9
11	59.8
12	64.4
13	69.4
14	74.7

**Table 1: Determination of rate of stem elongation of *Mimosa Diplotricha* plant in a natural habitat (May, 2023)**



**Graph 1: Stem elongation of *Mimosa Diplotricha* plant in a natural habitat**

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## Allelopathy Test

Observation of its germination of pea seeds on treatment of Aqueous extract of *Mimosa Diplotricha*, (figure 3) shows that higher the concentration of the plant extract, lower the germination of seeds. As concentration increases, percentage of seed germination is decreased and zero percentage germination is observed in 75% and 100% of plant extract. It directly shows its allelopathic potential and toxicity over neighbouring plants. This result proves that the aqueous extract of *Mimosa Diplotricha* contains allelopathic compounds. As concentration increases the germination rate decreases. So, it shows that the plant has allelopathic effect.

**a) Control**



**b) 25%**



**c) 50%**



**d)75%**



**e)100%**



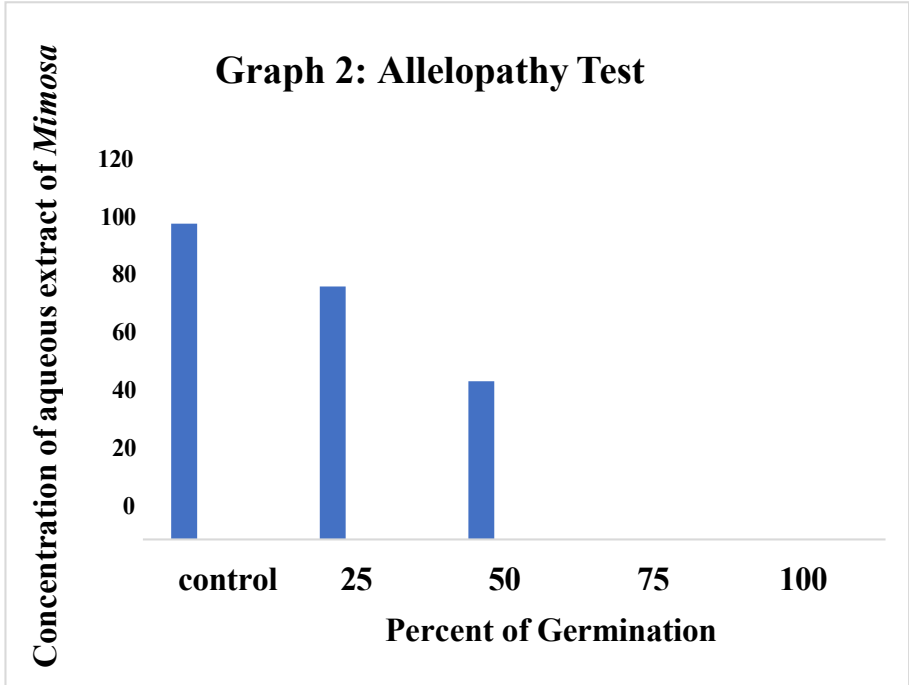
**f) After 7 days**



**Figure 3: Effect of various concentrations of aqueous leaf extract of *M Diplotricha* on seed germination of *Vigna unguiculata***

**Table 2: Mitotic index of onion root tip cells treated with various concentration aqueous leaf extract of *Mimosa Diplotricha***

Concentration aqueous extract of <i>Mim Diplotricha</i>	Total No. cells	Meta phase	Ana phase	Telo phase	Mitotic Index (MI) (%)
% (Control)	873	44	36	29	12
25%	870	31	26	25	9
50%	861	3	4	6	1.5
75%	958	1	1	1	0.3
100%	923	1	0	0	0.1



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## Cytotoxicity Tests

Germination studies of *Vigna unguiculata* in different concentrations of aqueous leaf extract of *Mimosa diplotricha* exhibit its high allelopathic potential. Zero percentage of germination was observed in higher concentrations. Lack of growth of radicle and plumule is an indication that cell division is somehow affected by the allelochemicals present in the plant extract. To study the cytotoxicity induced by aqueous leaf extract of this plant, Onion root tip assay is conducted. The results are given below. The different results obtained in the present study were thoroughly analysed in the light of various previous studies in this field *Allium cepa* root up meristems have been widely used for evaluation of cytotoxic of various compounds. Data obtained from the effects of the *Mimosa Diplotricha* extracts on root growth of *Allium cepa* showed that there was concentration dependent decrease in root growth. This gradual and significant root growth reduction at increasing concentration suggesting toxicity

*Reduction in mitotic index: Allium cepa* were grown roots in different concentrations of aqueous extract of *Mimosa Diplotricha*. The mitotic index was calculated.

The mitotic index showed reduction. The roots grown in higher concentrations showed more deformities. These included nuclear lesions, bridge formations in anaphase, elongation of cells.

*Nuclear abnormalities observed in onion root tip cells treated with aqueous leaf extract of Mimosa Diplotricha:*

Condensed nucleus: Nucleus shortened, darkly stained nuclei were observed

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Nuclear lesions: It is due to the disintegration of the portion of nuclear material by the action of the cytotoxicants. Here single, bi and multiple lesions were observed.

### **Pytochemical Analysis of *Mimosa Diplotricha***

To identify the active phytochemicals responsible for various properties like allelopathic potential, cytotoxicity etc of this plant, both primary and secondary metabolites present in aqueous leaf extract is screened by standard methods. The results are given below (figure 3).

Primary metabolites are generally nutritive in function whereas secondary metabolites are defensive in function and they are responsible for major biological activities of the plant. The major groups of secondary metabolites identified in aqueous leaf extract are given below (figure 4).

**Table 3: Screening for primary metabolites present in aqueous leaf extract of *Mimosa Diplotricha***

1	<b>Molisch's Test</b> To the test solution in a clean and dry test tube add few drops of alpha-naphthol solution and shake it carefully. Then few drops of concentrated Sulphuric acid is added through the side of the test tube.	A violet or purple violet ring is formed at the junction of the two solution due to the formation of furfural compound.	Presence of carbohydrates.
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2	<b>Benedict's Test</b> Take 2ml of test solution in a clean test tube, add 2-3ml of Benedict's qualitative reagent and boil for 5 minutes.	The colour of the solution changes from green, yellow and finally red depending upon the amount of reducing sugars present in it.	Presence of reducing sugars.
3.	<b>Seliwanoffs Test</b> To a little of the test solution add few drops of Seliwanoff's reagent and heated for 5 minutes.	Red colour is formed.	Presence of fructose.
4	<b>Iodine Test</b> To a little of the test solution add a few drops of Iodine reagent.	The solution turned blue immediately due to formation of starch-Iodine complex.	Presence of starch.
5	<b>Ninhydrine Test</b> To 1ml of the test solution added 1ml 2%Ninhydrin. Made up the volume to 2ml with distilled water and heated the tube in boiling water bath for 20 minutes.	Violet or purple colour is formed.	Presence of amino acid.
6	<b>Biuret Test</b> To a little of the test solution add 5drops 5%CuSO <sub>4</sub> followed by 2ml of excess NaOH. The test tube was shaken sidewise.	Purple violet colour is formed.	Presence of protein.

7	<b>Xanthoprotien Test</b> To 2ml of the test solution added 1ml of conc. HNO <sub>3</sub> and heated after cooling excess NaOH is added.	A yellow colour was formed which turned orange when alkali is added.	Presence of amino acid that contain aromatic ring.
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**Table 4: Screening for secondary metabolites present in aqueous leaf extract of *Mimosa Diplotricha***

Sl. N	Experiment	Observations	Inference
1	To the test solution add chloroform and filtered. The filtrate is taken and added conc:H <sub>2</sub> SO <sub>4</sub> and shaken well.	Golden yellow colour formed.	Presence of steroid.
2	Mayer's Test To //one-gram powdered material add 1ml of HCl acid and 6 drops of Mayer's reagent.	Creamish-yellow precipitate formed.	Presence of alkaloid.
3	Wagner's Test Mix the test solution with dilute Iodine. Boil and cooled.	Presence of blue colour. Colour disappears during boiling and reappears on cooling.	Presence of alkaloid.

4	To 2ml test solution add $AlCl_3$ and 1ml Methanol solution.	Pink colour solution formed and turns to red colour.	Presence of flavanoid.
5	To 2ml test solution add few drops of Ethanol and 1 drop of $FeCl_3$ .	Intense colour developed.	Presence of phenolic compound.
6	To the test solution add some water and shake well.	Foamy lather formed.	Presence of saponin.
7	To 5ml test solution add water and Lead acetate solution.	White precipitate developed.	Presence of tannin.
8	To test solution add $FeCl_3$ and shake well.	Blue black colour is formed.	Presence of tannin.
9	To 2gm material added 10 ml glacial acetic acid and 1ml $FeCl_3$ and followed by 1 ml of con. $H_2SO_4$ .	Deep brown colour ring formed.	Presence of glycoside.
10	To 2ml test solution added NaOH and shake well.	Yellow color precipitate is formed.	Presence of glycoside.

The preliminary phytochemical screening of aqueous extract of *Mimosa diplotricha* showed presence of Carbohydrates, Proteins, Phenols, Terpenoids, Flavonoids, Coumarins, and Cardiac glycosides. The above results are quite similar to that of tests conducted in ethanolic extracts of *Mimosa diplotricha* previously.

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## Discussion

The average growth rate in *Mimosa diplotricha* is 5.3 cm during the month of May. This is a comparatively faster rate of growth. This plant is characterized by robust growth, which enables it to scramble over other vegetation, forming spreading, impenetrable, tangled thickets of undergrowth. Due to its rapid growth rate, each plant can cover an area of 2-3 m<sup>2</sup> in one growing season. It is extremely invasive, highly competitive, a prolific seed producer and is capable of spreading rapidly (Pasiiecznik., 2022).

Data obtained from the effects of the *Mimosa diplotricha* extracts on root growth of *Allium cepa* showed that there was concentration dependent decrease in root growth. This gradual and significant root growth reduction at increasing concentration suggesting toxicity, which corroborates with earlier reports on the cytotoxic effects of aqueous extracts of some herbal preparations (Akinboro and Bakare., 2007; Oloyede *et al.*, 2010). The reduction in the number of dividing cells is a reflection of the Mito depressive effect on the cell division of *Allam cepa*. An aqueous extract may possess ability to block the synthesis of DNA and nuclear proteins, a phenomenon that has been reported with extracts of many other medicinal plants (Mercykutty and Stephen, 1980). The MI was observed to decrease with increase in concentration of extract. (Table 3) This decline is attributed to interference in the cell cycle and the increase in the incidence of chromosomal aberrations with corresponding increase in the concentration of the extract as earlier reported by Adegbite and Sanyaolu (2009).

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Phytochemical screening of methanolic extract revealed the presence of alkaloids, carbohydrates, saponins, glycosides, phytosterols, phenols, flavonoids, proteins and lipids in *M. diplotricha* leaves. (Naima *et al.*, 2019). The preliminary phytochemical screening of ethanol extract of *M. pudica*, being a plant very similar to *M. diplotricha*, showed the presence of Steroids, Carbohydrates, Saponins, Flavonoids and Tannins (Tamiliarasi and Acanthi., 2012). Many phytochemical compounds have been identified as allelopathic compounds. Some of them are Phenols (Stewart and Stewart, 2008), Coumarins, Flavonoids, (Rice *et al.*, 2012), Alkaloids (Mortmain., 2021). These compounds are also present in *Mimosa Diplotricha* aqueous extract reported to have allelopathic effects on the germination of neighbouring plants.

## **Conclusion**

The morphology, growth patterns and allelopathic nature of *Mimosa Diplotricha* were analysed. It was found that its hard plant body with thorns protects it from predators and high growth patterns which moreover restricts the survival of competitors for food, water and light. The outcomes demonstrated the high allelopathic potential of *M. Diplotricha* and suggested that it may have discharged some allelopathic material into the environment. Therefore, *M. Diplotricha* might be a potential source of recently formed biologically active substances. *M. Diplotricha*'s active allelochemicals are still a mystery.

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## History of Jews in Mala as Represented in the Novel *Aliya*

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### Abstract

*Literature is the by-product of a particular period, which records the glimpses of culture and history of certain times. To study the past, one need to look into the recorded history. So, it is important to look into the literary works of a particular period to know about the culture and historical events of that particular period. The study is about the historical and literary representations of the Jewish community in Kerala. The novel 'Aliya' gives a glance at the life of Jews in Kerala, especially in Mala. It also reflects the social, cultural and economic conditions of the period. The study focuses as to how the literary work Aliya played a crucial role in the reconstruction of Jewish history in Mala.*

**Key Words:-***Literature in historical perspectives, Jewish community in Kerala, historical and literary representation of Jews*

### Introduction

Literature helps to study the past. Literary criticism is used to study, evaluate, and interpret literary texts. It is the practical application of literary theories. A critic is an ideal reader. The study assumes how factual the literary text *Aliya* is, which represented the life of Jews in Kerala, especially in Mala. The study also focused on the history behind the prominent Jewish settlements in Kerala. Jews came to Kerala in 68 A.D. in order to escape from the religious persecution at home. They might have come and established their first

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settlement at Muziris or Cranganore. Later they moved to such places as Palayur, Mala, and Pullut and developed into a prosperous business community in Kerala with the royal patronage of native rulers. The Jewish copper plates and the synagogues are considered as the only relics of their cultural life. The novel, *Aliya* was set up on the plot of Mala and Chennamangalam. The work was written by Sethu who was a native of Chennamangalam. Some of the Jews were his classmates and neighbours. The Jews immigrated to their homeland by the formation of the state of Israel in 1948. So, the writer witnessed the culture and the immigration of Jews in his childhood, and his work was a reflection of his childhood experiences with the Jewish community. The study discusses the historical prosecutions and literary representations of Jews in Mala.

### **Concept**

Literature is a very effective way of understanding the culture of a particular time, class, and that of a particular social group. It reveals the lives of other people of various times. The study of literature provides an understanding of our history and our society. It gives us glimpses of earlier ages. These glimpses take our imagination into the culture of a particular period. Every text contains several contexts of a particular period in which it was written. It reflects the social, cultural and economic conditions of a period. So, it is important to look into the different elements of a text. Literary theory helps one to analyse and interpret the text through different perspectives or lenses. Literary critics analyse a particular text, say the storyline, what is the plot, who are the characters, the historical

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content of the text, was the text worth watching, etc. If we look at a text from a feminist lens, it will give a glimpse of the problems faced by the female protagonists to survive just because of being a female. If we look at the same text from a Marxist perspective, we can see the economic background, culture and class struggle written as subtext in the text. Literature played a crucial role in the reconstruction of the past, as it recorded the real-life events from the society, for instance the Sangam songs, Vedic literature and contemporary writings.

The study is about the historical and literary representation of Jews in Kerala especially in Mala. Literature had a crucial role in reconstructing the past. To study the past one need to look into the recorded history. Literature is a material fact, made of words not of objects or feelings. It includes both factual and fictional elements. It is important to look into a book or a text to know how it is connected to a particular period in which a particular historical event took place. Literature gives glimpses of earlier ages and it takes the reader to visualise the culture of a particular period. Literary works are used for the reconstruction of history. A literary work of a particular period is a very effective way of understanding the culture and history of a particular period. *Aliya* gives glimpses of the life of Jews in Kerala. It recorded the cultural life of Jews. It also reflects the social, cultural and economic conditions of the period.

### **Literature in Historical Perspectives**

Every text contains several contexts of a particular period in which it was written. It reflects the social, cultural and economic conditions of a period. So, it is important to look into the different

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elements of a text. Literary Theory helps one to analyse and interpret the text through different perspectives or lenses. Literary critics analyse a particular text, for instance the storyline, what is the plot, who are the characters, the historical content of the text, was the text worth watching, etc. If we look at a text from a feminist lens, we can focus on the problems faced by female protagonists to survive just because of being a female. If we look at the same text from a Marxist perspective, we can see the economic background, culture and class struggle written as subtext in the text.

### **Jewish Community in Kerala**

If we analyse the history of Jews in Kerala, it seems to be difficult to determine their ancestry, as there is no reliable record showing the place they came from or the date of their arrival. It is believed that the earliest Jews who came to Kerala might have been the sailors in the ships of King Solomon (10<sup>th</sup> century B.C.). Biblical accounts depict the sailors and merchants docking Kerala's main harbour, with an intention to procure spices and exotic treasures such as 'elephant's tooth, peacocks and apes'. The word in the Bible for peacock is "*tukium*" and for apes, it is "*kapim*" which are the Tamil words for peacock and apes respectively. So, it is argued that the ships of King Solomon used to call at some ancient port in *Tamilakam* to collect these items of cargo. Scholars generally agree that the earliest Jewish settlements in Kerala were in port cities like Kozhikode (Calicut), Kodungallur (Cranganore), and Kollam (Quilon). No record of their settlement at Kozhikode is available now. But it is evident from Tarisapalli Copper Plate that they had

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their guild of *Anjuvannam* at Kollam and that it was recognized by AyyanAtikal, the governor of Venad.

When Moses Pereyra de Paiva visited Cochin in 1685, there were eleven congregations in the state, each with its own synagogue. Four of these, the Kochangadi, the Kadavumbaghom, the Paradesi, and the Thekkumbaghom were at Cochin; two, the Thekkumbaghom and Kadavumbaghom at Ernakulam and one each at Chennamangalam, Parur, Palur, Muttom and Tirutur. One more was added later at Mala, twenty kilometres to South East of Cranganore.

### **Historical and Literary Representation of Jews**

Both historical and literary works are used for the reconstruction of Jewish historical life like any other. *Aliya* was one among them. The novel was set up on the plot of Mala. Sethu, an eminent writer of Kerala, wrote it. He was born in Chennamangalam at Ernakulam in 1942. As a native of Chennamangalam, he witnessed the life of the early Jewish community in his childhood. Few of the Jewish boys were his classmates. He also witnessed their immigration from Kerala to their homeland, Israel. He wrote the novel by accompanying his childhood memories and with the help of his childhood friend, Eliyahu Bassalel, an Israeli citizen. The novel talks about plenty of information about Jewish culture, their wedding tradition, the sacred day of *Sabbat*, the Zionist movement, Jewish immigration, and so on. Apart from these, the novel also depicts the life of native people, glimpses of the liberation struggle of the 20<sup>th</sup> century, the E. M. S. government, the Education and Agrarian Relations Bill etc.

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From all the information it is clear that the novel *Aliya* is a reflection of the history of Jews in Mala. The work depicted the story of two identities of the people: the native and the Jewish identity. It depicted the cultural and religious identity, the complex interrelationships and the emotional history of Jews in the place.

### **Conclusion**

This study is about the historical and literary representation of Jews in Kerala especially in Mala. Literature is a crucial element in reconstructing the past. To study the past one need to look into the recorded history. Literature is a material fact, made of words, not of objects or feelings. It includes both factual and fictional elements. It is important to look into a book or a text to know how it is connected to a particular period in which a particular historical event took place. Literature gives glimpses of earlier ages and it takes the reader to visualise the culture of a particular period. Literary works are used for the reconstruction of history. A literary work of a particular period is a very effective way of understanding the culture and history of a particular period. *Aliya* gives glimpses of the life of Jews in Kerala. It recorded the cultural life of Jews. It also reflects the social, cultural, and economic conditions of the period.

Apart from Christians, the Jews also have formed a part of the community in Kerala from very early days. The literary work *Aliya* is a reflection of the life of Jews in Mala and Chennamangalam. Those places were once prominent centres of Jews. The famous copper plate grant of Bhaskara Ravi Varman to Joseph Rabban was important evidence of Jewish settlement in the region. Their settlement in Kerala was also a reflection of the religious tolerance adopted by the

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native rulers. The rulers gave them permission to follow their religion and to build their synagogues in Kerala.

The book *Aliya* was written by Sethu, who was a native of Chennamangalam. The work represented the life of Jews in and around the place. It recorded the life of Jews in Mala also. The trade relations, religious practices, marriage ceremonies and the immigration of Jews were depicted in the novel. It exposed the story of two identities – the native and the Jewish. The novel contains both factual and fictional elements in it. It constructed the cultural life of Jews in Kerala.

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**An Ecocritical Reading of the Climate as A Discourse in  
Arundathi Roy's *The God of Small Things***

**Anupama Mohan**

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Kerala is located on the Malabar Coast of the Indian peninsula, which faces southwest. The Western Ghats Mountain range physically separates Kerala from its neighboring states, keeping it isolated from other Indian cultures for a long time. As a result, Kerala was able to develop a society in which foreign culture is actually more noticeable than the Indian influence. The state is bordered by Karnataka to the North and Tamil Nadu to the East. In Kerala, summer starts in March and lasts until May. Monsoon season is experienced twice a year. The primary rainy season runs from June to August during the southwest Monsoon. And in October and November, the Northeast Monsoon, sometimes referred to as the retreating Monsoon arrives. In the majority of Kerala, the weather is cool between the two Monsoon seasons. The state receives an abundance of rainfall during the Monsoon season as it is the closest to the Arabian Sea. Almost all of Kerala's rivers and backwaters are fed by the Monsoon, which causes their volumes to fluctuate from tiny tributaries in the summer to overflowing levels during the rainy season. The climate is generally nice in this tropical country. However there are regional variations in climate. The plains and coastal regions have hot, steamy weather, whereas the upper highland parts remain cool all year. Additionally, there are sporadic showers throughout the year. Altogether the state experiences a different climate from the other Indian States.

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Kerala experiences the typical humid tropical environment as a result of its tropical location. Its far eastern edges, however, have a drier tropical wet and dry climate. Kerala experiences 3107 mm of yearly rainfall on average. In contrast to the chilly, mountainous eastern highlands of Idukki district, which make up Kerala's wettest region, parts of Kerala's lowlands only receive 1250 mm of rainfall on average annually. Seasonal Monsoons are mostly to blame for Kerala's precipitation. Kerala experiences 120–140 rainy days on average in each year as a result. In summer, hazardous cyclones moving in from the Indian Ocean can bring gale-force winds, storm surges, and torrential rain over much of Kerala.

The village where the story is set, that is, Ayemenem, gets its name from its ecological past itself. Aymenem is derived from two words – 'ay' in Tamil which means five and 'vanam' in Sanskrit which means forest. The name refers to the five forests (Vattakkadu, Thuruthikkadu, Vallyakadu, Moolakkadu, and Mekkadu) that once existed in the location of the village.

The Meenachilar which is almost like a central character in the novel is infamous for its fierce floods during the Monsoons. The river carries mud, sludge, uprooted trees, cattle, and homes of people in its rushing water current and floods both banks. The overpowering water current and heavy rains together form an environment that is prone to floods and yet comes back to its natural state once the rains stop pouring down. In *The God of Small Things* rain is used as a soft, emotional motif that characterises love, affection, longing, and a tinge of melancholy. It plays an important role in setting the atmosphere of

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the ancestral house in Aymenem. The novel begins by describing the Monsoon season there and the several organisms that come to life during that season.

It was raining when Rahel came back to Ayemenem. Slanting silver ropes slammed into loose earth, plowing it up like gunfire. The old house on the hill wore its steep, gable roof pulled over its ears like a low hat. The walls, streaked with moss, had grown soft and bulged a little with dampness that seeped up from the ground. The wild, overgrown garden was full of the whisper and scurry of small lives. In the undergrowth, a rat snake rubbed itself against a glistening stone. Hopeful yellow bullfrogs cruised the scummy pond for mates. A drenched mongoose flashed across the leaf-strewn driveway (Roy 2).

For Rahel's return to Aymenem after twenty years, the author has chosen Monsoon to be her welcoming season. It is that time of the year when everything looks rainy and moist. The climate throughout the day is either rainy or awaiting a sudden downpour. It is innate in the minds of humans to identify rain as calming and soothing. There are several examples of literature that praise rain and romanticise its ability to create a mood of coziness and comfort. The Monsoons in Kerala have a unique characteristic to them that makes it both lulling, chilling, and daunting at the same time. The heavy rain clouds block out the sun's warmth and light. The days grow darker and gloomy. The reason Roy chose to open the novel with the

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Monsoon season might be the same. The rain sets the mood for the story which progresses to the flashback in which tragedies that struck the lives of its characters come one by one. Rainy weather is frequently used to depict how the universe is empathizing with someone who is depressed or in melancholy. Rahel's return is for the first time after she left Aymenem due to these unforeseen tragedies at an age when she could not fully comprehend what had happened. Now she is a grownup and knows exactly why she and Estha were separated and how badly that affected their lives. It is almost like coming back to the traumatic past one left. Rain is the perfect setting for this thought to sink in owing to the memories of another Monsoon twenty years ago when a flooded river took away the life of the twins cousin. She is coming back to the house she was ousted from due to this incident. Over this idea, the love for nature in Arundhati Roy's writing shows us the different organisms and the part of nature that awakes during the Monsoons.

The rain is so heavy that even the walls of the Aymenem house grow moist and damp. The scurrying of invisible creatures under the unkempt undergrowth is only one example of the seemingly invisible changes that take place around the house during Monsoons. In fact, there is a plethora of animals from different species that awaken during this season which adds to the auditory, and sensory experience of Monsoons. Frogs, crickets, and mayflies (also called '*mazhappaatta*' or 'rain fly' in Malayalam) are a few of them. Monsoons are also the time when snakes of different type slither around moist surfaces. Roy uses the imageries of a yellow bullfrog looking for its mate, rat snake and a drenched mongoose to sketch the

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rainy life of Aymenem. In this sense, rain is also a symbol of rebirth. Rain is essential for renewing freshwater resources and is essential for plants to grow. As a result, it can be considered a source of life. The conclusion of a prolonged period of sadness is also symbolised by rain as it is most frequently used as a symbol of rejuvenation in literature. She further goes on to describe the Monsoon seeping into the Aymenem House as follows.

She had forgotten just how damp the Monsoon air in Ayemenem could be. Swollen cupboards creaked. Locked windows burst open. Books got soft and wavy between their covers. Strange insects appeared like ideas in the evenings and burned themselves on Baby Kochamma's dim forty-watt bulbs. In the daytime their crisp, incinerated corpses littered the floor and windowsills, and until Kochu Maria swept them away in her plastic dustpan, the air smelled of Something Burning (6).

The insides of a house too experience the heavy rain pouring outside. During Monsoons in Kerala, there is a humidity in the air that makes it possible for some organisms to come out of their hibernation period. The air is so moist and laden with the smell of the mud that received showers, often used in literary works like poems. The smell is called 'petrichor'.

Water symbolises life, birth, purity, cleaning, or in spiritual issues, washing away sins. It is a very basic necessity in existence. It is connected to life and growth in terms of both birth and rebirth. Christians use water for baptisms to signify the death and resurrection

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of the spirit. Therefore, it is a crystal-clear representation of spiritual births. Rain also signifies the formation of life in literature; it also indicates the creation of the soul. This perspective of rain is written in the following lines: “It hadn’t changed, the June Rain. Heaven opened and the water hammered down, reviving the reluctant old well, greenmossing the pigless pigsty carpet bombing still, tea-colored puddles the way memory bombs still, tea-colored minds. The grass looked wet green and pleased” (6).

The revived old well, puddles of memory, and the pleased-looking grass are all perspectives of rain in a happy or joyful sense. The same rain that brings tragedy in the form of floods and overpowering currents, makes the earth green again and lush with beauty. This dialectic of the concept of rain is used well by Arundhati Roy to establish a connection between the moods of the characters and their surroundings. This is what makes rain an element that can work on many levels, especially in a story set in a remote village in Kerala. Rains are a part of the culture and lifestyle of people there. The rain that pours down heavily makes the swollen cupboards creak, locked windows burst open, and the books soft and wavy between their covers with moisture. The water content in the air is so evident that if not well-detailed, it is difficult to find words that communicate it. The way in which Arundhati Roy has written the whole novel is a specimen in this light. How one can interlay the environment and nature and the story that takes place in these settings? It can only be possible if the choice of words is right and resonant with the blues of nature. As artificial barriers take hold and bloom, nature tries desperately to construct its own borders. Brick walls turn moss green.

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Pepper vines snake up electric poles. Wild creepers burst through laterite banks and spill across the flooded road. Man tends to forget that civilization can never completely protect us from the consequences of Mother Nature. Roy centers her story around the region of Kottayam, in the highlands of Kerala. The agriculture of this region is dominated by the production of coffee, tea, and rubber, which thrive in rains. Estha also arrives at Ayemenem after twenty years, in the rains. He walks along the banks through wind and rain, wearing a shirt that is drenched and sticking to his body.

And Estha, walking on the riverbank, couldn't feel the wetness of the rain, or the sudden shudder of the cold puppy that had temporarily adopted him and squelched at his side. He walked past the old mangosteen tree and up to the edge of a laterite spur that jutted out into the river. He squatted on his haunches and rocked himself in the rain. The wet mud under his shoes made rude, sucking sounds. The cold puppy shivered and watched (8).

Estha is said to be a quiet person, who gradually stopped talking at one point in his life. The rains welcome him too after years, back to his hometown, showering rains upon him. The image of a cold shivering puppy in the rain reflects Estha's character as soft and gentle. However, the heavily lashing rain does not seem to affect Estha. The colour of his shirt also is a soft strawberry pink, adding to his character. He had developed the habit of walking long distances without speaking or getting noticed by anyone. In the same way, he walks into the rain in Ayemenem. Rahel also feels the wetness of the



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rain on Estha's skin, symbolising rain as a connecting element between the twins. "A raindrop glistened on the end of Estha's earlobe. Thick, silver in the light, like a heavy bead of mercury. She reached out Touched it. Took it away" (44). The physical intimacy that the twins share is emphasised in these lines. When Rahel feels what Estha feels, rain becomes a medium between them through which emotions are shared without the need for any communication.

The sounds of rain dripping on tin roofs are also a characteristic of the auditory senses during Monsoon season. Rahel opens a window in the house to see the factory of their family business, Paradise Pickles and Preserves in the rain with the sound of water splashing on its roof that she is able to hear and listen to. The way Arundhati Roy compares images of the rain to non-living things is also a literary device that can be seen through an ecocritical lens.

Outside, the rain had stopped. The grey sky curdled and the clouds resolved themselves into little lumps, like substandard mattress stuffing. Estha appeared at the kitchen door, wet (and wiser than he really was). Behind him, the long grass sparkled. The puppy stood on the steps beside him. Raindrops slid across the curved bottom of the rusted gutter on the edge of the roof, like shining beads on an abacus (43).

Here, the rainclouds that carry rain and have stopped raining for a while are compared to "substandard mattress stuffing" and the raindrops that fall from the edges of the roof to "shining beads on an abacus". The connectedness that Roy establishes between nature and

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inanimate things, without affecting the flow of the story but only adding to the mood of it is brilliant. The choice of rain as an element to emphasise this relation is notable as it is one of the few things that hasn't changed over the years that the twins were away from Ayemenem. The relationship between literature and the world, and the age-old romanticising of the Monsoons makes this easier. If the matter of applying environment to literature is, at best, based on ethical issues such as pollution and the destruction of nature, another way of expressing this concern is by showing the beauty of nature as it is. Rain is in this way used as a metaphor that hovers over the village of Ayemenem while the people live their tragic lives under it.

The "Ayemene" House is a grand old building that has its walls turned mossy and green due to years of Monsoons. The rainy season has permeated into the physical history of the house. It has also seeped its way into the lives of people who have lived in it. There is a beautiful account narrated in the chapter titled 'KochuThomban' in which Rahel goes to the nearby temple to watch a Kathakali performance. The mood for the performance which takes place at night is set when she says that, "everything smelled of rain." Rain is also the setting where the most tragic incident of the novel is about to take place. It rains heavily and the Meenachal river starts to flow vigorously which was uncharacteristic of the climate in December. This is when Estha, Rahel, and Sophie Mol go on their little expedition on a boat across the river, to the History House. On their way back from there, the boat overturns in the strong water current and Sophie Mol who does not know swimming drowns in the river. The day is described as follows: "The rain had started early the

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previous afternoon. Suddenly the hot day darkened and the sky began to clap and grumble...Though it was December, it rained as though it was June. “Cyclonic disturbance,” the newspapers called it the next day. But by then nobody was in any condition to read the papers” (120).

The rain that poured down heavily that day was unexpected, as was the tragedy that was about to happen. This was also the day Ammu’s and Velutha’s unholy love was caught in the household. Velutha’s father, VellyaPappen comes in the rain, drenched and weak. He is verbally abused by Mammachi, Ammu’s mother who throws casteist slurs at him. She shouts through the sound of the heavy rain, cursing both Velutha and her daughter. VellyaPaapen keeps talking, weeping, and retching while moving his mouth. He keeps saying that he will punish his son for the crime that he has committed, that is, to love a woman from the upper caste. Mammachi doesn’t hear what he is saying due to the sound of the rain which “grew louder and exploded in her head.” It was so loud that she couldn’t hear herself shouting. She goes on to spit into the rain aiming at VellyaPappen who lies on the ground, wet, and covered in mud. This is a terrific account in the novel that clearly shows the vulgar face of caste and associated, unwritten laws that are prevalent in Kerala. The rain that pours down heavily that its sound makes the conversation between Mammachi and VellyaPappen inaudible take upon a scary attire in this part. The mood of the scene is fear as the imminent tragedy that would happen to Ammu and Velutha afterward is built up. There is a sense of dread that grows, in the backdrop of heavy rain that elevates the sense of fear. The dangerous face of rain is emphasised in these

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lines. After this, when Velutha comes to the house, he too is insulted. Mammachi spits across his face, going to the furthest extent of humiliation. While walking back in the rain, Velutha's inner thoughts make him want to sleep in the rain and wake up to the smell of Ammu. He feels like that is all he wants.

He kept walking. His face was neither lifted towards the rain nor bent away from it. He neither welcomed it, nor warded it off. Though the rain washed Mammachi's spit off his face, it didn't stop the feeling that somebody had lifted off his head and vomited into his body. Lumpy vomit dribbling down his insides. Over his heart. His lungs. The slow thick drip into the pit of his stomach. All his organs were awash in vomit. There was nothing that rain could do about that (134).

He does not find the rain to be a solace or an enemy. The only thing that grips hold of his thoughts is the humiliation that he had to face and the urge to find his lover by his side once again. Here the rain is a catalyst that does not interfere much with Velutha's state of mind but just lets him to walk through the heavy downpour with his head held down. Later, he is found sitting on the steps that lead down to the river staring at the reflection of the moon in the water. The post-rain climate in the night was as follows. "In a while, the rain slowed to a drizzle and then stopped. The breeze shook the water from the trees and for a while, it rained only under trees, where shelter had once been" (135).

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The insulted, humiliated state Velutha was in takes new layers in this imagery. Though the rain has stopped its downpour, it decreases into a slow drizzle and stops. The water that stayed in the leaves of the trees find their way down when a small breeze blows, and it is said to shower only below, where Velutha was sitting as a shelter from the rain. This imagery is a very sad one as the man who is already in a devastated state, lost his love and his life itself is in question, finds a shelter under the tree which also starts showering due to the breeze. The rain shows no empathy towards Velutha even if it has stopped. It finds ways to pour down upon Velutha.

Later when Rahel lies down by the side of Estha in his room, the soft night rain plays middle man for the silence between them. The physical intimacy between the twins again comes to play, but this time in a softer, not so loud way, focusing on their bodies that lay side by side.

Rahel was lying on Estha's bed. She looked thinner lying down. Younger. Smaller. Her face was turned towards the window beside the bed. Slanting rain hit the bars of the window-grill and shattered into a line spray over her face and her smooth bare arm. Her soft, sleeveless T-shirt was a glowing yellow in the dark. The bottom half of her, in blue jeans, melted into the darkness. It was a little cold. "A little wet. A little quiet. The Air" (140). Sadness engulfs the twins as they lay beside each other after a long period of twenty years. They silently fall into the silence of the rainy night. It is this silence that brings them together. The innocence of their childhood is lost way back in the flow of time. Here, one can find another answer to what rain

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symbolize in literature as the carrier of emotions between humans. The memories of their lost childhood might come flooding into their minds but they don't speak to each other. They only observe what they have grown up into. The weather of Aymenem is a catalyst that carries the plot forward and helps the reader to seamlessly drift into the mood of the story. Not only that the ecology of the story acts as a strong ground for the plot, but it also adds to the personality and depth of character with which Roy sketches them in words.

Summers are also an important season in setting the scenario of 'The God of Small Things'. The opening of the novel itself is by describing the temperature during summer which is in the month of May. She says that in May, Ayemenem is hot, and brooding and the days are long and humid. There are mangoes, red bananas, and jackfruit in trees and the air of Aymenem gets a fruity smell.

.. by early June the southwest Monsoon breaks and there are three months of wind and water with short spells of sharp, glittering sunshine that thrilled children snatch to play with. The countryside turns an immodest green. Boundaries blur as tapioca fences take root and bloom. Brick walls turn moss green. Pepper vines snake up electric poles. Wild creepers burst through laterite banks and spill across flooded roads. Boats ply in the bazaars. And small fish appear in the puddles that fill the PWD potholes on the highways (2).

Even while focusing on the luring, bright parts of summer, she also shows the inefficiency of the government system that causes the

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hardships of the season further unbearable. The plant growth during May is also typical of summer. This is also the time when boats for the fishermen of Aymenem are being made in the bazaars. In a few lines, Arundhati Roy analyses the environment, occupation of the people, and ecological aspects of the summers of Aymenem. It takes a lot of effort and the zenith of wordplay in writing to encompass so many happenings that take place in one's own surroundings in such few words. Observing not just one's immediate surroundings but also the functions taking place around it, and why they happen the way they do, is a very important ecological thought. For example, it takes only observation to see that fishermen do not appear in the Meenachal River during summer. But it takes a thought from an ecological perspective to understand that it is during this time that they ply their boats in the bazaar. This is a thought of paramount importance and that should be generated in today's world. Only if one understands the intricate details of why and how things happen around them can they understand the functioning of the ecosystem they inhabit in. This is a thought applicable not just to humans but also across species as a natural law. Many organisms thrive and survive in their microcosm because they know the functioning of their habitat, and how to not affect its balance. Human actions that go against this thought are what will be proven detrimental to the existence of our planet.

It was in summer that Sophie Mol's death happened. In Rahel's narrative of her distinct memory of Sophie Mol's funeral day, one can see the insides of a church on a hot summer day and the happenings inside it. Rahel observes that the "white edges of the arum lilies crisped and curled". She sees a bee dead in one of the flowers in the

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coffin. The church floor was hot and the insides of the building were humid. She sees “a small black bat climb up Baby Kochamma’s expensive funeral sari with gently clinging curled claws.” The child sees through her observant eyes the happenings inside a church during a typical summer morning, and the things that she sees are characteristic of summer only. The bee, dried flower petals, the hot church floor, and the baby bat. Inculcating the habit of closely observing one’s immediate environment is an important quality of being a responsible member of the environment. The wonder of a child’s eye catches these details, hence making them capable of fully experiencing the changes that happen in nature. There is also an instance when Rahel lies down beside Ammu on a hot afternoon. She observes a lot of things that happen in the room at that moment.

Outside, the Air was Alert, Bright, and Hot. Rahel lay next to Ammu, wide awake in her matching airport knickers. She could see the pattern of the cross-stitch flowers from the blue cross-stitch counterpane on Ammu’s cheek. She could hear the blue cross-stitch afternoon. The slow ceiling fan. The sun behind the curtains. The yellow wasp washing against the windowpane in a dangerous dzzzz. A disbelieving lizard’s blinks. High-stepping chickens in the yard. The sound of the sun crinkling the washing. Crisping white bed sheets. Stiffening starched saris. Off-white and gold. Red ants on yellow stones. A hot cow feeling hot. Amhoo. In the distance (96).



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It is said that she could “hear” the afternoon. She listens to the slow ceiling fan, which feels slow because it cannot combat the hot summer day. She could also hear the bright sun outside. A wasp is an insect that characteristically comes a lot in summer. A yellow one comes and Rahel listens to its sound too. She could also hear the blink of a lizard’s eye and the chicken walking outside, and also the white bedsheets that were washed getting dry under the sun. The typical Kerala saree coloured off-white and gold is also starched. All these are distinguished happenings that happen in summer only. Washing and starching clothes are practically impossible in the Monsoon season. Though summers are hot and humid, there is so much more happening that takes place than in Monsoons. Rahel with her inherent curiosity observes and listens to all these changes and absorbs the spirit of summer itself. Nature is loud only to the people who are ready to listen to it. Without this openness of mind and senses, one cannot experience nature the way it is.

In these different ways, Arundhati Roy uses the climatic conditions of Ayemenem to establish connections between the characters, and their environment and also to illustrate how important it is to observe happening around oneself in order to have a whole understanding of nature. The family business is also one that owes a lot to the changes that take place in the climate of Ayemenem. Paradise Pickles and Preserves makes products like pickles, squashes, jams, curry powders, canned pineapples, and also banana jam. Their products that needed preserving obviously depended heavily on the climatic conditions of Ayemenem. In a part when the summer was at its peak, what happened with the mango pickles is explained.

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Mammachi who always touched a pickle bottle the first thing every morning was the one who noticed this effect of the hot season on their pickles.

She had gone to bed early that night but woke a little after midnight. She groped for them, and her anxious fingers came away with a film of oil. The pickle bottles stood in a pool of oil. There was oil everywhere. In a ring under her vacuum flask under her Bible. All over her bedside table. The pickled mangoes had absorbed oil and expanded, making the bottles leak.

Mammachi consulted a book that Chacko bought her, Home Scale Preservations, but it offered no solutions. Then she dictated a letter to Annamma Chandy's brother-in-law who was the Regional Manager of Padma Pickles in Bombay. He suggested that she increase the proportion of preservatives that she used. And the salt. That had helped but didn't solve the problem entirely. Even now, after all those years, Paradise Pickles' bottles still leak a little. It was imperceptible, but they did still leak, and on long journeys, their labels became oily and transparent. The pickles themselves continued to be a little on the salty side. Mammachi wondered whether she would ever master the art of perfect preservation (80).

This was what a slight change in the climate, or a small shift in the temperatures did to the mango pickles. Preservation is a fermenting process that takes place solely depending on the climatic situation. Temperature changes affect the whole process leading to

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such irreversible changes and that too, on large quantities of products. There was a wide variety of products at Paradise Pickles and Preserves. One gets an idea of their wide range when Estha walks through the factory one night. It is written in detail the rows of products he walked past.

Past floating yellow limes in brine that needed prodding from time to time (or else islands of black fungus formed like frilled mushrooms in a clear soup). Past green mangoes, cut and stuffed with turmeric and chili powder and tied together with twine. (They needed no attention for a while.) Past glass casks of vinegar with corks. Past shelves of pectin and preservatives. Past trays of bitter gourd, with knives and colored finger guards. Past gunny bags bulging with garlic and small onions. Past mounds of fresh green peppercorns. Past a heap of banana peels on the floor (preserved for the pigs' dinner) (92).

The climate is acting as one of the central themes of the story on many levels. Arundhati Roy in her novel uses this aspect of ecology to build a world into which the reader can enter seamlessly. With the generally humid air conditions throughout the year, the ecosystems of Ayemenem are significantly impacted by the climate. Ecosystems are affected by climate change in diverse ways. For instance, species may be forced to relocate to latitudes or elevations which has only enough warmth and temperatures to suit their existence. Ecosystems and species are directly impacted by climate change, but it also interacts with other human pressures like

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development. Even while certain pressures have negligible effects when acting alone, their combined effects have the potential to produce significant ecological changes. For instance, if climate change increases the frequency of severe rainstorms, water bodies may become more susceptible to erosion. The unexpected heavy rain that showered in December was the reason the Meenachal River overflowed and Sophie Mol drowned. This is an instance of unexpected calamities that happen due to untimely fluctuations in climate. Humans would not be able to adapt and survive these sudden changes after a certain point. Arundhati Roy tries to emphasize the urgency that has fallen upon us to recognize this and the environmental impacts caused by it.

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## **A Study on Brand Preference towards Nestle Products among Youth with Reference to Chittattukkara Grama Panchayat**

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M. Com. Finance

### **Abstract**

*In India the industries are growing rapidly, so the customers have a wide variety of brand choices available in the market and it also creates a competitive market. So it is necessary to know the preference towards the brands. Nowadays, the youth are more dynamic. Their taste, needs, attitudes, and preferences are changing rapidly. In order to succeed in this competitive market, it becomes the utmost requirement of the company to study various factors that influence the purchasing decision. In this study, the youth preferences regarding their price, quality, quantity, packaging, etc. help to create a positive impact on the brand.*

**Keywords:** *Brand Preference*

### **Introduction**

Brand preference is the basis of a successful business, without a satisfied customer it is virtually impossible for any company to succeed. Customer is the king of the market so the youth is also a customer. Brand preference is the extent to which a firm fulfills people's needs, desires, and expectations. A strong brand image is a powerful asset. A recognized and trusted brand identity makes people confident to purchase the products. Preference influences the buying behaviour. Brand preference helps to grow your business by

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recommending it to your family and friends. This study attempts to know the factors affecting the purchasing decision of Nestle products.

‘Good food, good life’ sums up Nestle's philosophy as it creates inroads with nutrition and health. Nestle believes in innovation and always keeps customer preference and satisfaction as its priority. For that, it not only innovates but also renovates its products continuously. Nestle stands first in instant noodles and ketchup, second in healthy soups, No.1 in instant coffee, and No. 2 in the overall chocolate category. Quality is the cornerstone of a company’s success.

### **Objectives of the Study**

- To know the brand preference of Nestle products
- To analyse the factors which influence the brand preference
- To find the source of awareness about Nestle product

Brands commonly use as identifying markers to create brand identities within the market place. They provide enormous value to the company or individual, giving them a competitive edge over others in the same industry. As such, many entities seek legal protection for their brands by obtaining trademarks. People often confuse brands with things like logos, slogans, or other recognisable marks, which are marketing tools that help to promote goods and service.

### **Findings**

- Nearly half of the respondents are 18-25 years old.
- Most of the respondents are females.

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- Nearly half of the respondents are private employees.
  - Most of the respondents have 25000-50000 in their monthly income.
  - The majority of the respondents have heard about Nestle.
  - Nearly half of the respondents prefer the Maggi brand among Nestle products.
  - Most of the respondents purchase the Nestle products on monthly basis.
  - Nearly half of the respondents spend 500-1000 rupees for purchasing the nestle products.
  - Most of the respondents purchase Nestle products mainly from the bakery.
  - The majority of the respondents have used the Nestle brand for more than 1 year.
  - Most of the respondents prefer medium packs of Nestle products.
  - 53 percent of the respondents like discount promotional tool
  - 63 percent of the respondents change the retail shop if the preferred brand is not available.
  - The reason for preferring Nestle products is time-saving and it has the highest mean score of 4.53, and good for health has the lowest mean score with 3.08.
  - The factor influencing purchasing decision is price and it has the highest mean score of 4.35 and colour has the lowest mean score of 2.93.

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- The source of awareness is advertisement and it has the highest mean score of 4.52 and those in Radio has the lowest mean score of 2.76
  - There is no significant association between the age and the brand preference.

### **Suggestions**

- ❖ The income of the people decides the purchasing power. Nestle products should concentrate on the low-income segment to capture the market and position themselves in the mind of the customers with the required quality and quantity of products.
- ❖ Taste, price, and brand name play an important role in the competitive market; therefore it should maintain them and also improve them.
- ❖ Some of the Nestle products are not good for health so give importance to the health of the customers and build trust by offering products and services that match the consumer expectations and preferences.
- ❖ Nestle should be more specific about the promotion of every products rather than just a few product lines like Maggi, KitKat, etc. So Nestle should take action to improve the promotion of the products.
- ❖ The awareness of Nestle products on the Radio is less. So, the company should try to increase awareness in this media.

### **Conclusion**

The study entitled “Brand preference towards Nestle products among youth” is mainly intended to know the preference towards

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Nestle products and the factors influencing the purchasing decision and also to analyse the source of awareness of the products. The study shows that the majority of the customers are aware of Nestle products, and the advertisements play a major role as a source of awareness about the product. This study indicates that most of the respondents use the Maggi brand of Nestle products. The entire brand of Nestle products is selected by the respondents according to the price, quality, and brand name. The influence of discount promotional tools also plays an important role in the increase of sales. Most of the people are preferring the product because of their easy cooking, time-saving, availability and budget-friendly aspects. Most of the respondents prefer medium-size products. Nestlé takes great steps to achieve its goal of becoming a leader in nutrition, wellness, and fitness businesses by providing higher-performing goods to the customers. In this age of ever-increasing competition, it is essential for Nestle to keep a constant eye on the preferences and behavior of their customers in order to capture the largely untapped market both in rural and urban areas of India. By testing the hypothesis, there was no significant association between age and brand preference.

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## Phytochemical Analysis of Leaf Extract from *Cinnamomum Verum*, J. Presl.

**Sangeetha Jaik**  
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### **Abstract**

*The use of plants in the treatment of various diseases is gaining importance as they possess few side effects. The present study was carried out on Cinnamomum verum, J. Presl. Leaves. C. verum belongs to the family Lauraceae and has been used for treating various diseases for decades. This study was to evaluate the various phytochemical potentials in C. verum leaf. Phytochemical analysis revealed the presence of carbohydrate, sugar, reducing sugar, terpenoids, flavonoids, phenols, tannins, glycosides, and coumarins. Gas Chromatography – Mass Spectrometry is also done and identified the presence of Naphthalene, Trans-Cinnamaldehyde, Cinnamic alcohol, Cinnamyl acetate, Cinnamaldehyde diethyl acetal and Benzyl Benzoate.*

**Keywords:-** Gas Chromatography- Mass Spectrometry, Cinnamaldehyde.

### **Introduction**

*Cinnamomum verum* J. Presl, synonym is *C. zeylanicum*, is a tiny evergreen tree that is indigenous to Sri Lanka and Southern India and distributed widely in Asia and Australia. The genus *C. verum* is classified as a part of the Lauraceae family, which comprises around 45 genera and over 2850 identified species around the world (Singh *et al.*, 2021). *C. verum* is one of the earliest types of

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traditional spices used in cooking. *C. verum* is used to flavor foods in the preparation of candies, chewing gums, toothpaste, mouthwash, caramels, and many others. *Cinnamomum* is best known for its medicinal properties. *C. verum* is used as an anti-inflammatory, anti-cancer, anti-HIV, anti-oxidant, anti-diabetic, anti-bacterial, anti-viral, anti-fungal, and in the treatment of diarrhoea, vomiting, asthma, cardiac disease, nausea, digestive problems, coughing, arthritis, toothache, blood pressure control, and many others (Singh *et al.*, 2021). *Cinnamomum* bark and leaves contain cinnamaldehyde, which is responsible for their medicinal applications.

In Greek, the term “phyto” means plants. Therefore the term “phytochemistry” means the chemicals produced by plants. Phytochemicals are naturally occurring chemical substances found in plants (Mamta saxena *et al.*, 2013). Secondary metabolites are not essential for the growth and development of plants. Studies shown that the presence of secondary metabolites are responsible for imparting various medicinal properties, flavor and aroma to plants. *C. verum* is rich in various classes of phytochemical compounds, which are responsible for various medicinal properties. *C. verum* leaves were subjected to Gas chromatography-Mass Spectrometry analysis to determine their bioactive constituents.

There are many plant based reports on phytochemical analysis. Studies on *C. verum* bark and essential oils are many. But a few reports are there on the ethanolic extract of *C. verum* leaves. Cinnamaldehyde which present abundantly on the leaves of *C. verum* are responsible for aroma and fragrance which made it as an important spice. Thus the present study focusses on the analysis of

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phytoconstituents present in *C. verum* by GC-MS analysis.

**Objectives:** To study the secondary metabolites, present in ethanolic extract of *C. verum* leaves.

## **Materials and Methods**

### **Scientific Classification**

Kingdom	: Plantae
Phylum	: Magnoliophyta
Class	: Magnoliopsida
Order	: Laurales
Family	: Lauraceae
Genus	: <i>Cinnamomum</i>
Species	: <i>verum</i>

### **Sample Collection and Identification**

*C. verum* healthy leaves were collected from Kodakara, Thrissur district, Kerala. Fresh leaves from selected plants were collected in March 2023. The plant was identified by Dr. Sinjumol Thomas, Assistant Professor, Department of Botany, Carmel College (Autonomous), Mala.

### **Preparation of Plant Extract**

The collected leaves were washed and shade-dried for 21 days. The dried leaves were ground to a fine powder. 10 g of leaf powder was homogenized with 100 ml of absolute ethanol in an Erlenmeyer flask. The extracts were stirred by a magnetic stirrer for 5 hours at room temperature and filtered using Whatman filter paper 1. The filtered plant extract was stored at 4°C for further studies.

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## **Phytochemical Screening of Secondary Metabolites**

A phytochemical analysis of secondary metabolites such as flavonoids, phenols, tannins, glycosides, terpenoids, saponins, and some others was carried out using the prepared ethanolic extract by standard methods.

### **Test for Carbohydrates**

Fehling's test: Take 2 ml of Fehling's A and B in a test tube. Mix well, and boil for some time. Add 1 ml of the sample solution, drop by drop, and boil simultaneously. Observed for orange or red precipitate, which indicates the presence of carbohydrates (Rajendran *et al.*, 2017).

### **Test for Sugar**

Benedict's test: Take 5 ml of Benedict's reagent and add the plant extract. Boil for two minutes, then cool for some time. The appearance of a reddish-brown precipitate indicates a positive test for sugar.

### **Test for Reducing Sugar**

Seliwanoff's test: To 2 ml of Seliwanoff's reagent, add drops of plant extract and boil. A cherry-red condensation product has been observed, indicating the presence of ketose in the test sample. There had been no significant change in color produced by aldose sugar.

### **Test for Amino Acid**

Ninhydrin test: To 2 drops of Ninhydrin solution, 2 ml of test solution were added. The appearance of purple indicates the presence of amino acids (Ramaswamy *et al.*, 2017).

### **Test for Protein**

Xanthoprotein test: Take 2 ml of plant extract in a test tube and

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add a few drops of Concentrated  $\text{HNO}_3$ . Heat the solution. The appearance of a yellow precipitate indicates the presence of protein.

### **Test for Steroids**

2 ml of chloroform and concentrated  $\text{H}_2\text{SO}_4$  were added to 5 ml of plant extract. A red color appeared in the lower chloroform layer, which indicates the presence of steroids (Rajendran *et al.*, 2017).

### **Test for Terpenoids**

Salkowski's test: Take 1 ml of the sample solution in a test tube. Add a few drops of chloroform along the sides of the test tube. Then carefully add a drop of concentrated  $\text{H}_2\text{SO}_4$ . Reddish brown coloration at the interphase indicates the presence of terpenoids (Rajendran *et al.*, 2017).

### **Test for Flavonoids**

NaOH test: To a 1 ml sample, add 3 ml of dilute NaOH; the sample turns yellow. Add dilute HCL; if the yellow color disappears, it indicates the presence of flavonoids (Garba L. *et al.*, 2019).

### **Test for Phenols**

$\text{FeCl}_3$  test: Add 3 drops of  $\text{FeCl}_3$  to 5 drops of sample solution taken in the test tube. The dark green color indicated the presence of phenol (Darfour *et al.*, 2014).

### **Test for Tannins**

$\text{FeCl}_3$  test: Add  $\text{FeCl}_3$  to 1 ml of sample solution taken in a test tube. A brownish-green coloration indicated a positive test for tannin (Darfour *et al.*, 2014).

### **Test for Saponins**

Froth test: Take 1 ml of sample in a test tube, add 2 ml of

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distilled water, and shake well. The appearance of froth on the shaking of the mixture showed the presence of saponin (Darfour *et al.*,2014).

### **Test for Glycosides**

Con. H<sub>2</sub>SO<sub>4</sub> test: 1 ml of Concentrated H<sub>2</sub>SO<sub>4</sub> was added to 1 ml of test solution and allowed to stand for 2 minutes. The formation of a reddish color indicates the presence of glycosides.

### **Test for Phlobetannin**

HCL test: Boil 1 ml of extract taken in a test tube with 1% HCL. A red precipitate indicates the presence of phlobetannin (sawant *et al.*, 2022).

### **Test for Coumarins**

FeCl<sub>3</sub> test: Take 1 ml of sample in a test tube and add 1 ml of FeCl<sub>3</sub>. The color is dark green, which turns yellow upon the addition of 5 drops of con. HNO<sub>3</sub> indicated the presence of coumarins.

### **GC – MS Analysis**

Gas Chromatography Mass Spectrometry is a hybrid analytical instrument that couples the separation capabilities of GC with the detection properties of a mass spectrometer (MS). GC-MS analysis was performed with a Shimadzu AOC-20i gas chromatograph equipped with Rxi 5Si/MS (length -30 m, ID - 0.25 mm, film thickness 0.25 micrometre). Analytical conditions: Injector and transfer line temperatures are 230° C and 280° C. The temperature programme of the column oven was held at 70° C for 2 minutes, then increased from 70° C to 200° C, held at 200° C for minutes, and increased from 200° C to 280° C, held at 280° C for 15 minutes. The carrier gas was helium, and the flow rate was 1.01 ml/min. The

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sample injection volume was 1 $\mu$ l in split mode (10:1), and the electron ionization mode of MS was 70 eV.

## Result and Discussion

### Collection of Plant

The leaves and root associated soil are collected. Figure 1 depicts the *C. verum*.



**Fig 1. Habit of *C. verum***

### Phytochemical Analysis

Preliminary phytochemical analysis *C. verum* leaf was carried out in an ethanolic extract. Phytochemical screening of leaf extract revealed the presence of carbohydrate, sugar, reducing sugar, phenols, steroids, terpenoids, glycosides, tannins, and coumarin. Proteins, amino acids, saponin, phlobetanin, and steroids were found to be absent. Phytochemical tests conducted to screen secondary metabolites are depicted in Table.1

The above result was supported by the reports of methanolic extracts of *C. verum* studied by Rajendran *et al.*, (2017). That means the presence of flavonoids, glycosides, terpenoids, phenols, and carbohydrates in ethanolic and methanolic extracts. Steroids are absent in both solvents used. Saponins were found to be present in methanolic extracts but absent in ethanolic extracts. Flavonoids are reported to have anti-allergic and antiviral properties. Nilima and Aruna, (2022) reported the presence of flavonoids, terpenoids,

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phenols, carbohydrates, saponins, and tannins in the methanolic extract of *C. zeylanicum* bark.

<b>Phytoconstituents</b>	<b>Result</b>
Carbohydrate	+
Sugar	+
Reducing sugar	+
Amino acid	-
Protein	-
Steroids	-
Terpenoids	+
Flavonoids	+
Phenols	+
Tannin	+
Saponin	-
Glycosides	+
Phlobetatin	-
Coumarins	+

**Table 1. Results of phytochemical analysis of *C. verum* leaf extract**  
**GC –MS Analysis**

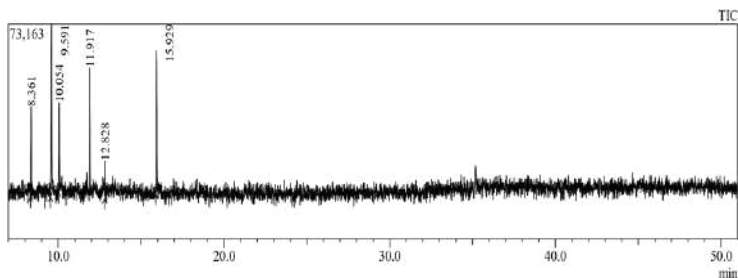
The ethanolic extract of leaf from *C. verum* is subjected to GC-MS analysis to identify the chemical composition present in it. Naphthalene, Trans-Cinnamaldehyde, Cinnamic Alcohol, Cinnamyl Acetate, Cinnamaldehyde Diethyl Acetal, and Benzyl Benzoate are present in ethanolic extracts. Trans-Cinnamaldehyde is present in higher concentrations. The presence of eugenol, the most abundant compound in *C. verum*, is not detected. The identified compounds

are depicted in Table 2. Figure.2 shows GC-MS chromatogram of ethanolic extract of *C. verum* leaf.

More studies were on the essential oils of bark and leaf, and studies on ethanolic leaf extract were comparatively few. According to studies by Li Yanqun *et al.*, (2016), *C. verum* leaf essential oil consists of trans-cinnamaldehyde, benzene propanal, trans-caryophyllene, clovene, and hexadecanoic acid. Trace amounts of cinnamyl acetate and cinnamic acid are also reported. One of the observations is that the amount of eugenol may decrease as the age of the plant increases. This might be the reason for the absence of eugenol in the present study on *C. verum*. Wang *et al.*, (2009) reported the presence of trans-cinnamaldehyde, 3-methoxy-1, 2-propanediol, o-methoxy-cinnamaldehyde, coumarin, glycerin, and benzene ethanol. The presence of trans- cinnamaldehyde is higher than other compounds.

Peak	R. Time	Area	Area %	Height	Height %	A/H	Mark	Name
1	8.361	51501	12.87	30432	13.80	1.69	MI	Naphthalene
2	9.591	110348	27.59	57938	26.27	1.90	MI	transCinnamaldehyde
3	10.054	53932	13.48	29806	13.51	1.81	MI	Cinnamic alcohol
4	11.917	66754	16.69	42526	19.28	1.57	MI	Cinnamyl acetate
5	12.828	19748	4.94	11941	5.41	1.65	MI	Cinnamaldehyde diethyl acetal
6	15.929	97729	24.43	47940	21.73	2.04	MI	Benzyl Benzoate
		400012	100.00	220583	100.00			

**Table 2. Chemical composition of the ethanolic extract of *C. verum* leaf.**



**Fig.2 GC-MS chromatogram of ethanolic extract of *C. verum* leaf.**

## **Conclusion**

*C. verum* has been used as a medicine for the treatment of various ailments for many decades. Previous studies reported that the presence of secondary metabolites imparts various medicinal properties. This study was conducted to find out preliminary phytochemicals present in the leaves of *C. verum*. The *C. verum* leaf is rich in various phytochemicals. From this study, it was concluded that *C. verum* is beneficial in different aspects.

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## Trauma and Resistance in the Selected Works of Omprakash Valmiki

**Shaharban**

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The context of traditional Hindu society, *Dalit* status has often been historically associated with occupations regarded as ritually impure, such as any involving in leatherwork, butchering, or removal of rubbish and animal waste. *Dalits* were forced to do manual laborers cleaning streets, latrines and sewers. Engaging in these activities was considered to be polluting to the individual and they were considered as born to do such contagious works, and these effected them mentally, as a result, *Dalits* were segregated and they were misplaced from the social life which lead them into a traumatic situation. According to Sharankumar Limbale:

“*Dalits* have created *Dalit* Literature, to be sure, but it is the progressive *savarnas* who have promoted it. There was a time when *savarna* publishers and editors would not publish *Dalit* writing. But once *Dalits* started writing, founded their own publishing houses, brought out their own papers and magazines, and established an independent identity, they attracted the attention of *savarnas*. It is an unfortunate characteristic of India that the upper castes pay us no attention when we are a part of them. But when we come out of their fold, they do. (Limbale 131)”.

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Sharankumar Limbale further says:

“*Dalit* literature, too, has created its own identity. The non-*Dalit* Critic, the non – *Dalit* publisher and the non-*Dalit* reader have played a major role in creating this distinct identity, in enabling *Dalit* literature to emerge. Traditionally *savarna* literature is very imaginative, not realistic. The literature that readers got to read from the puranic age until the present, tended to be entirely imaginative or fantastic. The real face of the common person was absent. With the rise of *Dalit* Literature, readers could witness Dalit’s sorrows, they read about *Dalit*’s struggles for their rights, they encountered the real human being, a new human being (131)”.

Omprakash Valmiki’s *Joothan* is also a kind of which emerges from *Dalit* writer itself, who tried to portray stark realities in *Dalit*’s life without any exaggeration or imagination. The first chapter of the project deals with the ‘Trauma theory’ discussed in the novel *Joothan*. The *Dalit* community has gone through several kind of atrocities which is generational, multi-faceted and institutionalized. And it is the after effect of the implementation of the Hindu caste system in the Indian society for religious and political reasons. Divisions in the same caste has left a clear mark of social division and inequality and thereby damaged this community’s identity. Omprakash Valmiki one of the pioneers in addressing this problem, offers a glimpse of what being a *Dalit* is treated by the society, because of his caste, in which he narrates episodes of verbal and physical violence, and recurrent inter and intra caste discrimination,

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thus depicting the traumatic existence of his own community, through his own life experiences.

The connection between trauma and literature lies in between the slim isthmus of reason that links articulation and experience. The traumatic experience destroys this narrow space and dejects one of the necessary crutches of cognizance and expression, leaving experience grounded and language under blockade with no supplies. *Logos*, the Greek word for the 'word', also meant 'reason' and 'plan'. A traumatized individual is displaying 'wordless', their prevailing language of reason stops too viable. The inability to combine the traumatic event into the mental, logical constraints formed by a lifetime of conditioning and normalcy places the writer in the same allegorical cave narrated by Plato at the genesis of philosophy.

Trauma is actually the haunting memories of our past, which recurrently passing through our mind. It is the situation through which the person goes through who experienced abusive events both mentally and physically. Trauma is a new genre in the history of philosophy, or rather a strange circular return to a forgotten place. Judith Herman, in her seminal work *Trauma and Recovery: From Domestic Abuse to Political Terror* (1992) describes psychological trauma as an affliction of the powerless. She writes, traumatic events are extra ordinary, not because they occur rarely, but rather because they overwhelm the ordinary human adaptation to life. Unlike common place misfortunes, traumatic events generally involve a danger to life or bodily integrity, or a close personal meeting with violence and death. They challenge humans with the experiences of



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helplessness and terror and evoke the responses of catastrophe.

Early scholarship shaped the initial course of literary trauma theory by popularizing the idea of trauma as an unrepresentable event. A theoretical trend was formulated by scholars like Caruth, who pioneered a psychoanalytic post structural approach that suggest trauma is an unsolvable problem of the unconscious that illuminates the inherent alternates of experience and language. This Lacanian approach coin the concept of trauma as a recurring sense of absence that split up the knowledge of extreme experience, thus preventing linguistic value other than a referential expression. The unspeakable void became the superior the past experience, can never be known or remains forever undiscovered by either the individual or society is being challenged by critical approaches that narrates other possibilities regarding the value of trauma in terms of psychological, linguistic and social mechanisms.

The novel *Joothan*, by Omprakash Valmiki, represents the people of India, who are always consider as inferior by the so-called upper-class community. Valmiki itself is a representative of that community who suffered intolerance from the society from the beginning of his boyhood itself which lead him to the situation of trauma. In this novel Valmiki tried to bring out both cultural trauma, by representing the entire *Dalit* community and mental and physical trauma that he went through in his childhood, which is depicted through his school life

The *Dalit* trauma, suppression and differentiation experienced by the members of the community have been multidimensional-from

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cruel physical, mental, emotional, psychological and sexual abuse to everyday micro aggressions, leaving a horrible mark on the psyches of the people. The brutal suppression and the sheer volume of abuse inflicted upon this particular community due to an organized system of societal stratification at the hands of the ‘upper’ caste individuals has been profoundly huge. Due to the privileges allotted to the upper class made them caste blind and it provide them the courage to deny the sufferings and pains of a community that is a perpetual prey of alienation, denigration, distinction and violence is to through away the responsibility of being a part of this society.

Classical definition of trauma, which is defined as the mental and physical response to a highly distressing event, which is not suitable to the definition of *Dalit* trauma. For the *Dalit* community, from the early stage of life itself, life has been an episode of traumatic events of varying degrees, forcing them to live according to the orders of upper-class community. They don't have any opportunity to live as they like. They become mere puppets in the hands of upper-class people and these upper-class people use them for their personal deeds. In the novel *Joothan*, Valmiki describes the actual plight of *Dalit* people. The shocking fact is that he faced these kinds of atrocities from his head master and teachers, who are well educated. Even though they are educated they don't exhibit basic human qualities, through them Valmiki showcases brutal caste spirit, which hides in the mind of educated people itself. The people who have the responsibility to improve or to uplift the society itself show this kind of discrimination, is really horrible. Educated people itself denied education for Valmiki only because he belongs to *chuhras*.

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Here Valmiki describes the traumatic situation that he had gone through in his childhood. Teachers do not allow *chuhras* to sit among upper caste children. They always keep a distance from them. They considered them as mere waste by upper caste people. Valmiki point out many situations in the novel that shows the discrimination against the *Dalit* community and how these situations affect him both mentally and physically.

Valmiki belongs to *Dalit* community. At that time *Dalits* were denied all kinds of freedom. They have to live according to the orders and rules of upper-class people. In the novel Valmiki had denied education by his head master and ordered him to clean the entire school ground. From this incident itself readers can understand how cruel were the caste system. People create distinction among them, in the name of caste.

The nature of *Dalit* trauma is intergenerational-which means it will pass on from one generation to the next, forever follow their psychological, emotional and physical states. For the *Dalit* community, life has been a series of traumatic events of varying degrees, forcing them to live in perpetual survival mode. In his work *Cultural Trauma and Collective Identity*, Jeffery C. Alexander writes "collective, cultural trauma occurs when a group of people feel that the trauma they had endured leaves indelible marks upon their group consciousness, marking their memories forever and changing their future identity in fundamental and irrevocable ways." (Alexander 1)

Valmiki was born into the *chuhra* caste (aka Bhangi), whose

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acclaimed job was to sweep the roads, burial of dead animals, clean the cattle sheds, to clean the floors, and they were also forced to work in the fields during harvests, and also wanted to perform other physical labor for upper- caste people, including Tyagi Brahmins. The Tyagis didn't even address them by name. They never consider them as mere human beings. They only called out, '*Oe chuhre*' or '*Abey Chuhre*'. Upper caste people had a notion that it is alright to touch cows and stray dogs but touching a *chuhra* made them 'polluted'. *Dalits* wants to work hard to meet their ends, but they 'didn't manage to get two decent meals a day,' not often didn't get paid for their labor and instead 'got sworn at and abused'. The village where Valmiki lived, the *chuhras* were forced to live outside the village. They were never allowed to stay in the village reserved for upper – caste people. A high wall and a pond separated their brick houses in the village. The edge of the pond was used by the upper-class people and made the pond filthy and *chuhras* were allowed to use the remaining portion which is very dirty and unclean. 'There was muck strewn everywhere' (Valmiki 1) writes Valmiki. He describes their living condition as similar to animals. The *Dalit* community has gone through several kind of atrocities which is generational, multi-faceted. Everybody's arms and legs get infected with diseases. For about thirty families there was only a single well, which was filled with worms during the rainy season. They were permitted to drink water from that stingy well, and were not allowed to use the well of upper-class people.

*Dalit's* miserable life is purely depicted in the novel '*Joothan, a Dalit's Life*'. They lived in the house made up of clay, which gets

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leaked during rainy season. It results in the breaking of ceiling. They don't have any outside help or insurance, and they had to spend a lot of money to rebuild their houses.

Apart from this sorrowful situation, what Valmiki had was his strong and supportive parents. They decided to give him education. In 1995, his father faced a hard time for getting him admission in school. When Valmiki, finally got the admission, he was not supposed to sit in the benches, but only on the floor. The students from *chuhra* community were not allowed to sit with upper caste students, they have to sit away from the upper caste children, where they couldn't see the black board well. Valmiki's bad experiences from his teachers and students made him an introvert. Other boys hurled epithets and beats him casually, even the teachers looked for excuses to punish him. Valmiki writes, 'so that I would run away from the school and take up the kind of work for which I was born (11). Valmiki's life changing moment or the traumatic situation that he had faced in his life had happened when he was studying in the fourth grade. A new headmaster had arrived in his school, he was a person who showed great enmity towards *Dalit* students. He thrashed Valmiki, almost daily and one day he ordered him to take a broom and sweep all the rooms and the entire playground of the school. The helpless boy spends two full days to finish his sweeping, hoping it would soon be over. Valmiki narrates the entire incident as "The third day I went to the class and sat down quietly. After a few minutes the headmaster's loud thundering was heard: '*Abey chuhre ke*, mother fucker, where are you hiding.....your mother.....' I had begun to shake uncontrollably. A Thyagi boy shouted, 'Master

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Saheb, there he is, sitting in the corner"(11). Valmiki says that "The headmaster had pounced on my neck. The pressure of his fingers was increasing. As a wolf grabs a lamb by the neck, he dragged me out of the class and threw me on the ground. He screamed: Go sweep the whole playground...otherwise I will shove chillies on your eyes and throw you out of school"(4).

Frightened, I picked up the three- day- old broom [now only a cluster of] thin sticks. Tears were fall in from my eyes. I started to sweep the compound while my tears fell. From the doors and windows of the school rooms, the eyes of the teachers and the boys saw this spectacle. Each pore of my body was submerged in an abyss of anguish (5).

Valmiki also describes another incident, that his entire family got humiliated by the upperclass people, which is considered as most powerful among the text. When any marriage took place in upper class community *chuhras* were only allowed to stand outside, so his community looked forward to marriage feasts in the village when they would wait outside with big baskets. After the guests had eaten, 'the dirty pattals, or leaf plates, were put in the *chuhras*' baskets, which they took home, to save the *joothan* sticking to them. At the end of one such marriage feast, Valmiki's mother pleaded the Brahmin host for extra food for her children, but they humiliated his mother and told her to be satisfied with what she already had collected and to get going. Valmiki writes:

That night the Mother Goddess Durga entered my mother's eyes. It was the first time I saw my mother so angry. She

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emptied the basket right there. She said to Sukhdev Singh, ‘pick it up and put it inside your house. Feed it to the barathis [marriage guests] tomorrow morning.’ She gathered me and my sister and left like an arrow. Sukhdev Singh had pounced on her to hit her, but my mother had confronted him like a lioness. Without being afraid (11).

Valmiki’s family fell on harder times when his eldest brother, who look after the family from his small wages, got a high fever and he died due to sufficient medical treatment. Valmiki had finished his fifth grade but due to their intense poverty, they were unable to meet their ends, and so, he could not continue with his school. He stopped his school and began to rear cattle in the field, watching with a wounded heart his schoolmates going to school. His brother’s widow pawned her silver anklet, which was the only piece of jewellery, she had, to pay for Valmiki’s school, without considering the protest of others. It was yet another close call. Valmiki continued to face severe discrimination in his school. Though he was efficient in his studies, his memories of school were congested with pain and humiliation: from taunts and beating by schoolmates and teachers in a ‘terror filled environment’, to his exclusion from extracurricular activities like sports; he was not even allowed to drink water from a glass, when he was thirsty. He had to cup his hands, and “the peon would pour from way high up, lest our hands touch the glass.” At times he writes, “I feel I have grown up in a cruel and barbaric civilization.” (9). He also had some good memories that a couple of boys who befriended him and didn’t consider the caste discrimination among them.

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*Dalit* experience has been agitated with physical, mental, financial and social insecurity; the unfulfillment of these sufficient needs has set off a constant sense of excitement and a strong need for security in the minds of *Dalits*. Beginning from the concept of pollution sticks to their identity, *Dalit's* mind was practiced to feel a profound sense of shame about who they were assigned. This is “learned cultural shame” and it is an intrinsic quality of the contemporary *Dalit* identity. The constant traumatic experience that they continuously faced during their life journey enhanced the need to find their identity of their own. Valmiki writes, “One can somehow get past poverty and deprivation but it is impossible to get past” (132). With this statement, Valmiki enhanced the stubbornness of the caste system in India that has resulted in the socio-economic suppression of thousands across India over centuries only because of the “lower caste” to which they belong. The title of this autobiographical novel, *Joothan*, commemorate the humiliation, pain and the poverty of the “untouchable” *Chuhra* community of Uttar Pradesh, to which the author belongs. The treatment towards them was worse than that to the animals.

Instead of following a continuous pattern, the author moves to and fro, from memory to memory in order to narrate his traumatic events that he had faced during his life journey, illustrating how his past in spite of the distance he has pass over to become one of the prominent authors in *Dalit* literature. Valmiki narrates his childhood in the village in Barla district of Uttar Pradesh. He writes about the atrocities he had to face during his school days. He describes the trauma he went through when he was asked to spend three days



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cleaning the school premises despite of accompanying his classmates belonging to the higher castes. Valmiki faced various ill-treated throughout his life, the one and only reason is his caste. Even his own relatives were tentative to invite him for a wedding as he denied to let go of his last name because it discloses his caste. Omprakash Valmiki was constantly get frustrated due to the distinction that exist between the *Dalits* and the caste Hindus, the *Savarnas*, with respect to the various religious beliefs and customs, he delicately debates the belief that the suppression of the *Dalits* by the *Savarnas* is acceptable as per the Hindu religious laws because the pork eating *Dalits* living on the fringes of villages and towns actually do not belong to the Hindu religion.

The author's motive doesn't cease at creating consideration towards the suppressed *Dalits* in the mind of the reader but questions, "Why is my caste my only identity?" (Valmiki 134). Omprakash Valmiki was really concerned about the future of his own community. He was very particular in uplifting the status of *Dalit* community in front of the society. Valmiki writes that despite government undertaking for the development of oppressed classes, through reservations, their achievements are hardly noticed and are ridiculed often. Many of them, at some stage of their lives have been discriminated against because they belong to a community and due to their beliefs and practices. The mention of their caste, community, and religion on admission forms to school and colleges is one such example. Just being an Indian is rather insufficient to get basic rights. Isn't it ironical that with every step our country takes towards "development", the same issues crop up again and again? Valmiki

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often opined that,

*Dalit* want to join the mainstream of society after getting an education but the Savarna prevents them from doing so. Discriminates against *Dalits*. Thinks of them as inferior beings. Doubts are caste on their intelligence, their ability, their performance. Only he whose skin has suffered the knife wounds of this terrorizing can recognize this pain. These knife wounds haven't just injured the skin, but also scarred the inner being (Valmiki 127).

Omprakash Valmiki suffered a lot in his life. He had faced various kind of humiliations. However, he says "Times have changed. But there is something somewhere that continuous to irk" (134). Throughout the, Omprakash Valmiki portray various events of his childhood memories, which is actually the traumatic experiences of his life. He writes:

I was kept out of extra-curricular activities. On such occasions, I stood on the margins like spectator. During the annual functions of the school, when rehearsals were on for the play, I too wished for a role. But I always had to stand outside the door. The so-called descendants of the gods cannot understand the anguish of standing outside the door (16).

In another situation, he states how he was continuously kept out of the chemistry lab 'on some pretext or the other'. He tried to meet the principal and to complain about distinction that he had faced in the chemistry lab. But no action was taken against the teacher, who

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continuously kept him out of the lab, instead he was not able to conduct any experiments for the whole year. He writes, “Not only did I do very poorly in the lab tests in the board exam, I also get low marks in the oral, even though I had answered the examiner’s questions quite correctly”(22).

Resistance theory gives importance to a politicised reading of the actions taken by students to stand against the power hierarchies that reinforce the systematic inequity in connection to class, gender, race, and sexuality through the imposition of curricula, rules, and culture in schools. Omprakash Valmiki’s *Joothan* is a clear depiction of pain and resistance against untouchability. *Dalit* or *Shudras* have been humiliated in the name of caste system. Their life is marked with disgrace, humiliation, oppression and discrimination. For many years, they have gone through heartbreaking and traumatic experiences. The trauma that the *Dalit* suffered is unbearable which is very effectively depicted in the autobiography of Omprakash Valmiki’s *Joothan*.

In this novel Valmiki represent himself as the victim of trauma, as he faced traumatic situation in his childhood from his headmaster. This experiences that he faced from his teacher and from the students of his class lead him to the stage of both physical and mental trauma. Trauma is actually, an emotional response to a terrible event like an accident, rape, or natural disaster, immediately after the event, shock and denial are typical. Here Valmiki is a victim of both physical and mental trauma. He had gone through this traumatic situation only because of his caste. He is humiliated and

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suppressed by the so called “upper caste” people. He is not allowed sitting in the class along with the other students. He has to sit down in the floor of the class. He went through the mental trauma when head master instructs him to sweep the ground of the school. He continued this for three days. Headmaster doesn’t show any sympathy towards Valmiki, rather than he tried to show his cruel and brutal mind only because of his caste. When Valmiki’s father saw him in this condition, he decided to react against it. His father moved forward legally and decided to fight for their rights.

Valmiki decided to resist against the caste system through his academic excellence. He also depicts the real situation of *Dalits*, and the behavior of upper class towards them. He always tried to focus on *Dalit* life and the struggles they faced in their life in order to survive, in his work. He used literature as a tool to resist against the upper-class people. *Dalit* consciousness in Indian English fiction clearly shows the miserable condition of *Dalits* in Indian society and the great concern of novelists to improve their condition. *Dalit* autobiographies reflect the mind of sensitive writer. Yet Valmiki is detached in his description. P.K. Singh says:

There is clarity, and honesty in the depiction of life experiences and veracity, truth and simplicity of the language elevate its stature. There are some allegorical, figurative and poetic passages in these autobiographies. These writers are free from rancor and do not nurture any bitterness. This aspect touches the hearts of the readers and emphasizes on the value of humanism (Singh 154).

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