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New Interdisciplinary National Research Journal

Vol. II, Issue-I, Oct. 2012 to March 2013 **ISSN : 2279-0349**

11) Preliminary Phytochemical Analysis of
Seven Ethno- Medicinal Plants from Central Maharashtra

Jaishri Jasutkar

Ruapli Shirsat and Deepak Koche

---

12) 'An Analytical Study of Adoption of E-Accounting in Marketing'

Dr. A. M. Raut

---

13) Preliminary Phytochemical Scerrining of
Hyptis Suaveolens (L). Poit Aerial part

Jaishree M. Jasutkar

---

14) PRELIMINARY PHYTOCHEMICAL ANALYSIS OF *ANISOMELES INDICA* (L.) O. KTZE

M. J. NAISE AND D. G. BHADANGE

---

15) Morphotaxonomical and Anatomical Study of Colebrookea oppositifolia Smith

Rupali Shirsat

Subhash Suradkar

---

16) Chemical composition and antibacterial activity of the
essential oil of *Zingiber Officinale* Rosc. growing in Akola region

S.M. Sharma and D.G. Bhadange

---

17) Cloud Computing towards Green Libraries

Dr. Ravindra D. Sarode*

Mr. Ashish S. Raut**

---

18) Synthesis of Some Bis (5-Hydroxy-4 (substituted isoxazolinyl)
1-phenoxy)methanes and Bis (5hydroxy-4-substituted
pyrazolinyl)- Phenoxy)methanes and their antimicrobial activity.

P. M. Band

---

19) Synthesis of Some Bis (Substituted) Methanes

P. M. Band

---

20) Phytoplankton diversity and physicochemical
characteristics of Dagadparwa reservoir, Dist. Akola (MS) India

P. P Ade

---

21) Some folkloric medicinal plants from Patur Tahsil
of Akola district (MS) India

D.G.Bhadange and P.G. Dhawale

New Interdisciplinary National Research Journal /Vol. II/Issue. I/Oct.2012-March 2013 /ISSN NO. 2279-0349

GREEN MARKETING

Prof. Ulhas N. Medshikar
Shri Shivaji College, Akola

Green marketing refers to the process of selling products and services based on their environmental benefits. Such a product or service may be environmentally friendly in it produced and packaged in an environmentally friendly way. All activities designed to generate and facilitate any exchange intended to satisfy human needs or wants such that satisfying of these needs and wants occur with minimal detrimental input on the national environment.

Green marketing is the marketing of products that are presumed to be environmentally safe, thus green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising. Yet defining green marketing is not a simple task where several meanings intersect and contradict each other; an example of this will be the existence of varying social, environmental and retail definitions attached to this term.

The obvious assumption of green marketing is that potential consumers will view a product or service's greenness as a benefit and base their buying decision accordingly. The not so obvious assumption of green marketing is that consumers will be willing to pay more for green products than they would for a less green comparable alternative product that has not been proven conclusively. Green marketing involves developing and promoting products and services that satisfy customers want and need for Quality, Performance, Affordable Pricing and Convenience without having a detrimental input on the environment.

While green marketing is growing greatly as increasing numbers of consumers are willing to back their environmental consciousnesses. The public tends to be skeptical of green claims to begin with and companies can seriously damage their brands and their sales if a green claim is discovered to be false or contradicted by a company's other products or practices.

Why of Green Marketing In this contemporary world, an ecological issue such as global warming interests both the marketing practitioners as well as the consumers. The term green marketing simply denotes all the activities intended to generate as well as facilitate any exchange in order to satisfy human needs such that satisfying these needs happen with the most minimal input on the environment.

Companies all across the global have started differentiating their products and

services by using go green concern and have started utilizing ecological marketing approach as a mere competitive edge. This green marketing approach is largely used as a gimmick by the gigantic corporate houses in order to make a difference in the consumer's point of view when it comes to major market decisions.

As resources are limited and human wants are unlimited, it is important for the marketers to utilize the resources efficiently without waste as well as to achieve the organization's objective, so green marketing is inevitable. There is growing interest among the consumers all over the world regarding protection of environment. Worldwide evidence indicates people are concerned about the environment and are changing their behavior. As a result of green marketing has emerged which speaks for growing market for sustainable and socially responsible products and services.

Evolution of Green Marketing

Evolution the global changes in the environment are becoming critical not only for the consumers but also for the managements across the globe. Despite the fact that loads of environment protecting rules and regulations have been put into practice, there is a general belief that these laws lack competitiveness.

The green marketing has evolved over a period of time, evolution of green marketing has three phases. First phase was termed as "Ecological" green marketing, and during this period all marketing activities were concerned to help environment problems and provide remedies for environmental problems. Second phase was "Environmental" green marketing and the focus shifted on clean technology that involved designing of innovative new products, which take care of pollution and waste issues. Third phase was "Sustainable" green marketing. It came into prominence in the late 1990s and early 2000.

The green evolution has evolved steadily over the period of time. There were initially three long phases in the evolution of the much hyped green marketing. The first phase was known as the ecological phase. In this phase, all the marketing activities were carried out in order to assist the ever increasing environmental problems and offer solutions for these problems. The second phase was called the environmental phase as after the environmental problems, the entire focus was shifted on the implementation of cleaner technologies. This phase also led to the discovery or the invention of products that would better the environment or at least not increase the already existing problems. The last phase is termed as the sustainable phase of green marketing which is still prevalent. This phase came into existence by the late nineties and early millennium.

With the human wants escalating heavily, the resources are decreasing. Hence it has become mandatory for the marketers across the globe to use the resources efficiently and not waste them under any circumstances. Worldwide surveys indicate that consumers globally are changing their behavior towards products and services. Green marketing is almost inevitable as the market for socially responsible products is increasing greatly. Benefits of green marketing companies that develop new and improved products and services with environment inputs in mind give themselves access to new markets, increase their profit sustainability, and enjoy a competitive advantage over the companies which are not concerned for the environment. Going green can be as good for business as it is for the environment, especially if you spread the word about it. The key to successful green marketing

campaigns is not to be too forceful; instead simply make potential customers aware of the tangible benefits of thinking environmentally, which they can do by frequenting your business. Green marketing campaign will help them better understand the environmental issues at hand and how they apply to everybody.

The entire world seems to be turning green, while some big shot oil companies and other modern moguls drain the life force from our already bleeding planet. Green entrepreneurship is being established as an honorable and efficient business model. There is just something more settling about a business whose goal is to help, rather than one whose ultimate goal is to become wealthy. This environment friendly brand of business resonates with customers and lets them know that someone out there actually cares.

Green power marketing among other things, offers utilities and power marketers a way to differentiate their numerous products. To date of utility experience with green pricing has been quite mixed. While some programs have met their goals rather easily, others have been unable to reduce significant customer response and have even encountered resistance from environmental and consumer groups. The common thought is that even though the marketing is “green”, it’s an unfair practice that wishes to take advantage of our planet and its many residents.

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New Interdisciplinary National Research Journal /Vol. II/Issue. I/Oct.2012-March 2013 /ISSN NO. 2279-0349

PORTRAYAL OF ETERNAL RADHA-KRISHNA STORY IN ANITA NAIR'S MISTRESS

Pranjali Wazalwar - Kane
Shri Binzani City College, Nagpur - 09

Anita Nair's 'Mistress' deals with the universal disharmony between people of disparate backgrounds united by their demanding relationships. She is a leading novelist of the present century. 'Mistress' presents the complexity that arises out of the burden of expectations and habitual thinking process ingrained in us since birth. The three generational story with its umpteenth ups and downs reveals the depth and gravity of Nair's thoughts. It's the story of Radha, Shyam, Chris and Koman. It is set in the backdrop of Kerala and uses Kathakali as its basis. Each chapter begins with a beautiful explanation of one of the navrasas and she provides an analogy from nature for each of the nine expressions. Life as we commonly experience it is a play on these nine emotions.

I would like to give the story in brief for the readers to understand. In the first generation Saadiya, a devout Muslim from Arabipatnam elopes with Sethu, a Hindu posed as a Christian. Now religion plays an important part in shaping us. She has never seen the world outside Arabipatnam (somewhere in Tamil nadu) and yearns for a human touch out of the confines of her prison. She loves Sethu, worships him and has faith that someday things will be alright. She sees him as God, her saviour. But away from home, she feels bereft and lonely. Only religion can hold her. Here, Nair shows a superb sense of individualism in a woman of the past generation, a Muslim, when she relinquishes life and prefers death. She is dissatisfied so much with their differences of faith on her part in her religion and the unknown religion of Sethu, that even her own child cannot convince her to adjust to the situation.

This child, Koman, a Kathakali dancer, grows up to have a tumultuous relation with a foreigner, Angela. He is a devoted Kathakali dancer and says that art is a demanding mistress. Angela is of German origin and wants to write a dissertation on the dance-form, Kathakali. She becomes his student and then passionately falls in love with him. But Angela, a Christian a foreigner, feels suffocated and lonely in India, away from her land. It is not only religion but the difference of socio-culture that prompts Angela to take Koman with her to England.

Unfortunately, it is Koman this time who feels out of place and returns to India. The difference of their religion, faith, lifestyle, atmosphere and temperament tears them apart. His niece is Radha, the representative of the young generation and the focal point of today's presentation. Her marriage with Shyam is monotonous, fruitless and an adjustment done on behest of her conservative father. Shyam says in one of his soliloquy: ***"Why is it that my hold over Radha remains so ephemeral, even after eight years of marriage? Why can't I reach into the substance of her being? Is it because she doesn't let me?"*** Radha has her individuality and her demands. Shyam is unable to fulfill them. The book is in the first person, but does not have a single narrator, as in a dance drama,

each of the players is allowed to speak for himself. Shyam voices his thoughts, and Radha voices hers, and we see them hurting each other, the misunderstanding deepening through the trickery of words. As Nair goes further into their past, we begin to understand the complexities of their relationship to comprehend the injustice of it all.

And then enters Chris, the other hero, the travel writer with a cello and a tape recorder in his hands. Radha gets attracted to Chris. She is emotionally distanced and more than a bit contemptuous of her husband, Shyam. She must choose whether to stay in her marriage or to break the bonds of custom and risk the shunning of her society to achieve what she perceives as true love. She becomes pregnant after eight years of marriage. She does not know the parentage of the child in her womb. But she feels complete by herself. She does not need Shyam or Chris to make her 'complete'. This is the story in brief.

Now let us consider the three characters Radha Chris Shyam – the trio representing the young generation in the novel. Let us assume them as archetypal forms of Lord Krishna and Radha, the eternal beloved. The writer has named them Shyam and Chris with a definite purpose in mind. Shyam and Radha are married to each other albeit unhappily. Here, let us view the story from Radha's perspective and so, as in the mythological story, Radha is married to a husband with whom she was not bound by love and devotion, but by a sense of duty. In the novel Radha is married to Shyam. (Let us call him the darker side of Krishna, and is bound by duty as an Indian wife.) Shyam is resourceful and practical, dominating and secretly in love with Radha. He never conveys his feelings as he does not want to divulge his subtle and delicate feelings to her. He is simple, expecting only a wife's devotion and love from her. He is at the same time, quite schematic, dominating and manipulative. He doesnot want her to have a life of her own. He even goes to the extent of raping her to establish his superiority. Radha feels sorry for him at times. But has no love as he forces himself on her. They do not have children suggesting that their relation has borne no fruit. Their relation has no future, no fuel to go on, no binding force, no extension.

When the novel starts, Chris enters, the epitome of love and its subtleties. Let us call him the brighter side of Lord Krishna, love incarnate, bearing the promise of fruit. He comes with a cello, the big musical instrument like the legendary flute of Lord Krishna. Lord Krishna used to mesmerise gopis and animals of Vrindavan with his divine music. Similarly, Chris has his cello with which he casts a web over Radha. The cello is of much discussion and an attraction with Radha. He becomes the Pied Piper beckoning Radha with every note. Radha forgets her husband and her duties and spends time in Krishna's devotion. In the novel, Radha visits the Near-the-Nila resort to be with Chris and establishes physical relations with him. She finds a soul mate in him. Chris is a free spirit, culturally different from Radha. This innate difference attracts Radha, making him more desirable. Chris is the ever flowing stream of life and love present in the archetypal Krishna. It is but natural for Radha to fall for him. She seeks fulfilment in him though transitory in nature.

Radha seeks perfection in both, Shyam as well as Chris, but is disappointed, first in Shyam who can not measure up to the mark, and then Chris with whom she is thrown in a torrential current of passion, but alas in vain as it is short lived and because they operate on two different planes. Atleast Radha realises the innate difference between her and Chris in the beginning of their relation.

Koman and Angela realise it after it is too late. The scar of spoiled relationship remains with him forever.

Shyam is Radha's reality though she tries to impose her imagination on Chris. Reality versus Imagination. Heard melodies are sweet but those unheard are sweeter. Shyam is dry, businesslike and practical. We get to know him through his monologues. But Radha does not know his heart. They are poles apart. On the other hand, Chris is everything that she wanted. Or thought she wanted. Shyam is the temporal, Chris divine. Taken together they complement. But apart they are incomplete entities. Chris and Shyam are two sides of Lord Krishna. Infact there are many facets to Lord Krishna's personality. Radha's search ends in disappointment/disillusionment. But in the end she realises her Self, and then she neither needs Shyam nor Chris to complete her. Shyam is shown impotent whereas Chris's inclusion in Radha's life is for the time being. And so after the conception, she feels complete. The child in her womb symbolises many things. The continual cycle of birth-death-rebirth is depicted in the novel. The child is the beginning of a new era for her. Chris's role ends by sowing the seed of futurity. He is no longer needed as an entity. And so he leaves Shoranur to head for his country, culture and people. She does not tell him that she is pregnant with his child. Shyam, on the other hand, knows that he cannot impregnate Radha and so he is shocked to hear it. He continues to lurk in the background waiting for Radha to come to him. He wishes to continue as it was. With a complete and self sustained Radha. With a new meaning. He knows now that he can never own Radha as he wished to own her throughout their married life, by stamping his presence on everything. There is a need in him to dominate everything. In the end he too realises that he has limited access to and over people around him. The novel ends on an open note. Radha takes her own time and for the first time does not act on anybody's wishes. In the novel, Radha is not the archetypal Radharani lost in the devotion of Lord Krishna. In mythology, Radha is the manifestation of Krishna in human form as a pleasure seeking entity. He takes her form to experience pleasure and so their love affair. Radha has divine knowledge and never doubts her love. Whereas in the novel, Radha is in constant consternation of the love that she is seeking. Shyam and Radha share a flimsy relation while Chris and Radha seek fulfilment though in a transitory fashion. After the initial energy of volatility of emotions is spent, she asks herself, "What next?" Koman also senses this that Radha is thinking of 'forever' whereas Chris thinks of 'now'. They head for a disastrous union. They are bound to be separated by the example set up by the earlier generations. People coming together with innate differences of religion, faith, temperament, expectations, have no common plane to operate upon. They are like stars with their specific orbits. They attract each other but if they come close they unite in destruction. And so he is also not the Lord Krishna that Radha is seeking. In the end, she understands herself and takes her time to decide. Taken together, Shyam and Chris, make the whole concept of Lord Krishna true. Individually taken they are human beings capable of imperfections and limitations. Radha's search for her perfect soulmate is met with disappointment. So in a way the characters are types and in a larger sense they are individuals.

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New Interdisciplinary National Research Journal /Vol. II/Issue. I/Oct.2012-March 2013 /ISSN NO. 2279-0349

Antibacterial Activity of Six Members of Euphorbiaceae

Arun K. Zingare
M. B. Patel College, Sakoli (MS) India

Abstract:
Present study is focused on the antibacterial activity six euphorbiaceae members collected from the forest area of Nagzira wild life sanctuary (MS) India. From the selected plants, Acalypha indica showed highest antibacterial activity against all microbe tested. The least antibacterial activity was shown by extract of Ricinus communis. All the plant extracts shown significant antibacterial activities. This might be explore for further research in the applied fied.

Key words:
Antibacterial activity , Euphorbiaceae, Nagzira wild life sanctuary.

Introduction:

The Euphorbiaceae is the 4th largest family of the angiosperms comprising over 300 genera and about 7500 species distributed widely in tropical Africa (Gill, 1988). The euphorbiaceae plants are shrubs, trees, herbs or rarely lianas (Pandey, 2006). Many of them are xerophytes and cactoid and most often with milky latex. The family provides food (Pandey, 2006; Etukudo, 2003) and varied medicinal properties used in ethnobotany (Gill, 1988; Vasishta, 1974; Agbovie *et al*., 2002; Betti, 2004; Kubmarawa, 2007). They are useful in the treatment of ailments such as respiratory infections, venereal diseases, toothache, rheumatism, cough, ulcer and wounds (Oliver, 1960). However, some are also found as toxic.

This study aims at determining the antibacterial effects of six selected euphorbiaceae plants, thereby validating their use in the traditional medicine.

Material and Methods:

Plant collection and authentication

The plants selected for the study were *Acalypha indica*, *Euphorbia hirta*, *Euphorbia heterophylla*, *Mallotus oppositifolius, Phyllanthus amarus* and *Ricinus communis.* The plants were collected in 2009 and authenticated using flora of Marathwada (Naik, 1998). Plant specimens were deposited in the herbarium of the Department of Botany, M. B. Patel College, Sakoli (MS). The plants were dried in shade for 7 days and powdered by electric mill and stored for further use.

Extraction

500 g of the respective plant part powder was macerated with 50% aqueous ethanol (2 x 5mL) for 72h at room temperature and filtered. The pooled liquid extract was concentrated to dryness *in vacuo* at 40°C to give dry ethanol extract.

Antibacterial activity:

The dry ethanol extracts were evaluated against the test microorganisms using agar-gel diffusion method described by Alade and Irobi (1993). The ethanol extracts were re-dissolved in distilled water and tested at concentration level of 20 mg/ml. A well containing a standard drug, Chloramphenicol was made in the bacteria plates.

The bacteria were incubated at 37°C for 24h. The presence of zones of inhibition surrounding the wells was taken as an evidence of antimicrobial activity.

Name of plants		Zone of inhibition (mm)	
	B. Subtilis	E. coli	S. aureus
Acalypha indica	22 mm	16 mm	10 mm
Euphorbia hirta	18 mm	14 mm	12 mm
Euphorbia heterophylla	19 mm	15 mm	10 mm
Mallotus oppositifolius	15 mm	10 mm	07 mm
Phyllanthus amarus	18 mm	16 mm	11 mm
Ricinus communis	12 mm	09 mm	06 mm
Chloramphenacol	35 mm	26 mm	18 mm

Results and Discussion:

The data on antibacterial activity of selected plants was presented in table-1. The results indicate that, Acalypha indica showed highest antibacterial activity against all the selected microbes, closely followed by Euphorbia heterophylla, E. hirta and Phyllanthus amarus. The least antibacterial activity was shown by Ricinus communis (table-1). When compared to the standard chloramphenacol, it was found that the selected plant extracts showed significant antibacterial activities (table-1).

The antibacterial activity of these plants can be correlated with the phytochemicals present in them and to their medicinal potential (Rajkaruna *et al.,* 2002; Parekh and Chanda, 2007 and Koche *et al.,* 2010). However further work is necessary to validate the medicinal potential of these plants.

Acknowledgement:

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IT IN INSURENCE SECTOR

Ganesh M. Khekale
Shri Shivaji College, Akola

Abstract :

This paper highlights about the field of information technology has posed serious challenges for the insurance industry in India. The use and application of information technology in wide variety of insurer's operations has now become strategic in the sense that it has direct impaction the productivity of resources, and a sweetening impact on reducing the case of various activities. With the arrival of private insurance players, the competition has become more intense and an important role is being played by the insurance sector. Even though the use of information technology is not new to the insurancesector, yet we may find tight compartmentalization regarding the use of information technology in various departments of the insurance companies including the major players since last 50 years. The most visible of these departments are accounting, policy issue and servicing, claim processing, sales management. The innovations in information technology can be effectively utilized for the following areas. In this paper an attempt is made to highlight information technology in insurance sector in India.

Keywords:

Insurance Industry, productivity, claim processing, sales management

Introduction :

There is an evolutionary change in the technology that has revolutionized the entire insurance sector. Insurance industry is a data-rich industry, and thus, there is a need to use the data for trend analysis and personalization. With increased competition among insurers, service has become a key issue. Moreover, customers are getting increasingly sophisticated and tech-savvy. People today don't want to accept the current value propositions, they want personalized interactions and they look for more and more features and add ones and better service. The insurance companies today must meet the need of the hour for more and more personalized approach for handling the customer. Today managing the customer intelligently is very critical for the insurer especially in the very competitive environment. Companies need to apply different set of rules and treatment strategies to different customer segments. Personalization helps organizations to reach their customers with more impact and to generate new revenue through cross selling and up selling activities. To ensure that the customers are receiving personalized information, many organizations are incorporating knowledge database-repositories of content that typically include a search engine and let the customers locate the all document and information related to their queries of request for services.

Technologies and insurance in India

Businesses are using information technology to improve quality, to lower costs and to design new products and services. It is a powerful tool for competitive advantage in increasingly competitive, global markets. The insurance business is being changed by information technology too. Exactly where

the change is leading is unforeseeable, but change is inevitable, and intelligent participants in the insurance business will want to take advantage of it. Insurance has been no stranger to technological change. Over the years, the business has lowered expenses by embracing new technologies in communications and automation. Insurance has brought to the public the economic benefits of declining loss costs as other technologies brought better health, longer lives, fewer fires and safer factories and highways. In recent years, information technology has lowered the capital costs of insurance through the unbundling of insurance products and through the risk management movement. Over and over again, consumers benefited. Competitors who rode the changes gained over those who resisted or ignored them. Regulation will play an important role in determining how quickly and under whose auspices the latest round of advances in information technology gets to the public through the marketplace. For the main way technology gets to market is by giving one competitor a significant edge over another. With technology moving so quickly forward, the competitive advantages and the shifts in the competitive pecking order will naturally tend to come quickly too. But even where their long-term effect on the public is beneficial, rapid competitive shifts are difficult, disruptive and upsetting to those in any business that is subjected to them. That is where regulation comes in.Regulation can affect the pace or rate of change, not its direction but the time it takes to get there. Where regulation finds itself already athwart the path that change is taking, regulation is in a natural position to slow change down. And it may be disposed to do so. That is not necessarily bad where the regulated field is alone, left to its own devices and in control of its destiny. But in financial services, insurance is not alone.In the real world of applying public policy to insurance, the state insurance commissioners are not alone. State regulation of insurance, like all regulation, has not always dealt easily with rapid change that was upsetting to the regulated business. Regulation has a tendency to guard its jurisdiction over the regulated activity and to side with constituents who feel threatened by change. Sometimes regulation has resisted innovations made possible by information technology. But where a technological advance lowered costs or otherwise served both sellers and buyers, it was not held back for long.The forces of regulation and information technology are about to collide in the distribution of insurance.

Information technology is making it possible to distribute financial services at low cost and in convenient and attractive forms. Those possibilities will not naturally respect the borders among nations, let alone states. They will not naturally submit to our inherited distinctions among the various financial services.It is in the nature of advances in information technology to leap over borders of geography and boundaries of profession. It is in the nature of regulation to respect and enforce those borders and boundaries and to try to make them permanent. So the changes based on recent advances in information technology will inevitably run up against regulation of many kinds. The most exposed aspect of insurance regulation – the one likely first to be seen as standing in the way of the competitive use of the technological gains – is the licensing of insurance agents.

Benefits of Information Technology

Information Technology provides multiple benefits to the insurer and the existing and prospective insured:

- Information collected is better and cheaper

- Provides new ways of doing business in competitive market
- Flexible pricing and customized services
- Global accessibility i.e. lapse of physical boundaries
- Increased sales without additional sales force
- Immediate premium collection and funds transfer
- Reduced cost per transaction
- Real time knowledge base building

Conclusion

The technology in insurance has grown through their performance, restructuring policy and their efficiency in providing the large amount of insurance services with the help of technology as their technology as their tool.Insurance companies that are enabling to react to their customer's demands will lose market share to their competitors that can. The question now facing insurance companies is no longer if they should take advantage of the internet, but now should they do it. The insurance services without technology will be like tea without sugar. The IT revolution has set the stage for unprecedented increase in financial activity across the globe. The progress of technology and the development of worldwide networks have significantly reduced the cost of global funds transfer. It is information technology which enables banks in meeting such high expectations of the customers who are more demanding and are also more techno-savvy compared to their counterparts of the yester years. They demand instant, anytime and anywhere banking facilities.

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Plant- Pathogen Interaction: A Biomolecular Insight

[1]D. K. Koche, [2]M. V. Kawale, [3]K. M. Borkar and [4]W. Y. Tagade
Department of Botany, Shri Shivaji College, Akola (MS) India 444003
Department of Botany, D. B. Science College, Gondia (MS) India
Department of Boatany, M. B. Patel College, Sakoli (MS) India
Department of Botany, C. J. Patel College, Tirora (MS) India
dipakkoche43@gmail.com

Abstract:

The biomolecular mechanisms involved in the perception, signaling and response in plant-pathogen interactions are major elements in the study of true resistance or susceptibility of any plant. As yet, there is no clear idea on what is really happening during certain biochemical and molecular events. In the present review deals with some important hypotheses on the biochemical and molecular mechanisms that are activated in the plant during its interaction with the pathogen.

Introduction:

Understanding the fundamentals of why certain pathogens causes disease in one host plant and not in another has long been a debate which motivated plant pathologists and biochemists and genetists. Plants, in nature, are generally resistant to most pathogens. The ability of a pathogen to produce a disease in a host plant is usually the exception, not the rule. This is because plants have an innate ability to recognize the potential invading pathogens and to set up successful defenses. On the other hand, successful pathogens produce diseases because they are able to evade detection or suppress host defense mechanisms, or both. Since the beginning of the 20th century, classical breeding for disease resistance in plants especially in crop plants has been a major method for controlling plant diseases. However, first report on this aspect appeared in 1940 (H. H. Flor) that gives a substantial understanding of the genetic interactions controlling disease resistance in plants. Flor's work was novel, insightful, but under – appreciated. This work resulted in the formulation of the gene-for-gene hypothesis. In its most simple form, the gene-for-gene hypothesis states that plants contain single dominant resistance R genes that specifically recognize pathogens that contain complementary avirulence (avr) genes. Avirulence genes can be defined as genes in the pathogen that encode a protein product that is conditionally recognized directly or indirectly only by those plants that contain the complementary R gene (Ali and Reddy, 2000; Beers and Mc Dowell, 2001and Koche et al. 2011).

Specific recognition results in the induction of defense gene expression and the inhibition of pathogen growth. However, if the host plant does not contain the R gene, the pathogen can still produce the disease on that plant although it contains the avr gene. It was the work of H. H. Flor that set the stage for the subsequent molecular cloning of pathogen avirulence genes and plant R genes. Moreover, the lack of evidence for the direct avr-R interactions stimulated molecular biologist to propose new models for avr perception by resistant plants. One interesting model is that the R proteins confer recognition of avr factors

only when these factors are complexed with their host virulence targets. This molecular mechanism has been recently named "guard model" (Figure1).

R Genes

To survive, plants must defend themselves from numerous pathogens. Some defenses are constitutive, such as various pre-formed anti-microbial compounds, whereas others are activated by pathogen recognition. The recognition process includes the product of a dominant or semi-dominant resistance R gene present in the plant and the corresponding dominant avirulence (Avr) factor encoded by or derived from the pathogen. The recognition of the Avr factor by the host plant starts one or more signal transduction pathways that activate several of the plant's defenses,

thus compromisingthe ability of the pathogen to colonize the plant (Blondelle and Lonher, 2000 and Bent, 2001).

To date, the direct interaction between an R protein and an Avr factor has been demonstrated only for the tomato Pto and the *Pseudomonassyringae* AvrPto proteins. Based on observations, many AVR proteins appear to have a role in pathogen virulence; the 'guard model' was recently proposed for the R gene function. This model predicts that AVR proteins are effectors interacting with particular target proteins in the plant to manipulate host processes in favour of the pathogen. In this scenario, R proteins are guardians that recognise the complexes formed by the target

proteins and the Avr gene-encoded modulators. This recognition consequently initiates the plant defense response. AVR proteins are therefore important tools allowing the identification and characterization of these crucial protein complexes and the ensuing processes (Conrath et al., 2002).

An array of *R* genes that provide protection against viruses, bacteria, fungi, and oomycetes has been cloned from both monocots and dicots. Many contain a nucleotide-binding site (NBS). It is often located closer to the N terminus of the R protein and is either a leucine zipper or aTIR domain, which is similar to the intracellular C-terminal signaling domain of the integral membrane of the *Drosophila* Toll protein and the mammalian interleukin-1 receptor. Both the Toll protein and the interleukin-1 receptor are involved in signaling pathwaysthat lead to the activation of the defense responses to pathogensin *Drosophila* and mammals, respectively. Two R proteins havealso been shown to contain a serine threonine kinase domain. In addition to these motifs, all but two R proteins involved in gene-for-gene interactions have a leucine-rich repeat (LRR)region. This domain consists of imperfect repeats of nine to>40 units, each of which is of about 25 amino acids long. In the central region of each repeat is a b strand/b turn structure, which is hypervariable and has the consensus sequence XX(L)X(L)XXXX, where L corresponds to the conserved leucines (or other aliphatic amino acids) and X denotes the flanking hypervariable aminoacids. This structure in the different repeats is thought to fit together to form asolvent-exposed parallel ß sheet. Such a solventexposed, hypervariable surface could facilitate the interaction of the R protein with its cognate Avr factor (ligand) and could provide different recognition specificities for altered Avr factors (Droillard et al., 2002).

Monogenic resistance is not durable in most cases due to the high mutation rate of many plant pathogens. Mutants, which have changed from avirulent to virulent, will have a selective advantage as their host range has been broadened and they will

therefore multiply more efficiently. Plants, however, have a wide range of recognitional specificities and susceptibility is the exception, suggesting that the coevolution between the host and the pathogen frequently occurs in nature. During evolution, new resistance specificities must have been generated to cope with the newly evolved virulent strains of pathogens (Droillard et al., 2002 and Koche and Choudhary, 2012).

A clue to the mechanisms by which sequence diversification in plant resistance genes is promoted, comes from their genomic organization. Some R genes, such as *Hm1* and *RPM1* (Flore, 1971), are only present as a single copy gene, and are absent in susceptible plants. Most *R* genes, however, are organized in complex loci that contain an array of homologous genes. Examples of *R* genes that are present in clusters include *Rp1, Rpp5, Xa21, Pto, Dm3, I2, N, M* and the *Cf* genes. The tandem array organization of homologous sequences probably facilitates inter and intragenic recombination events, unequal crossing-over and gene duplication (Gao et al., 2000).

Signaling

Plants have integrated signaling networks that mediate the perception of and responses to the hormones, nutrients, and environmental cues and stresses that govern plant growth and development. The current knowledge of plant signal transduction pathways has come from the identification of the sensors and receptors that perceive the signal, and of the transcription factors and target genes that coordinate the response (Hammond- Kosak, 1996).

Protein kinases play a central role in signaling during pathogen recognition and the subsequent activation of plant defense mechanisms. Members of different kinase subfamilies, such as calcium-dependent protein kinases and MAP kinases, are involved. The future challenge is to understand how these kinases work, which cellular responses they mediate, and how they fit into the bigger picture of defense signaling (Hammond- Kosak, 1997). .

Mitogen-activated protein kinase (MAPK) cascades have emerged as a universal signal transduction mechanism that connects diverse receptors/sensors to cellular and nuclear responses in eukaryotes. New findings have revealed the complexity and redundancy of the signaling components, the antagonistic nature of distinct pathways, and the use of both positive and negative regulatory mechanisms, components that link sensors / receptors to target genes and other cellular responses (Hancock and Diamond, 2000 and Koche et al. 2011).

In recent years, it has become apparent that MAPK cascades play some of the most essential roles in plant signal transduction pathways from cell division to cell death. MAPK cascades are evolutionarily conserved signaling modules with essential regulatory functions in eukaryotes, including yeasts, worms, flies, frogs, mammals and plants. The recent enthusiasm for plant MAPK cascades is backed by numerous studies showing that plant MAPKs are activated by hormones, abiotic stresses, pathogens and pathogenderived elicitors, and they are also activated at specific stages during the cell cycle (Juhal and Briggs, 1992).

MAPK activation by pathogens, pathogen-derived elicitors and defense related second messengers is complicated. Two tobacco MAPKs, SIPK and WIPK (wound-inducible protein kinase), are activated by various pathogen-related signals through both racespecific and non-race-specific elicitation mechanisms (Jones, 2001). As both of these MAPKs are also activated by diverse abiotic stresses,

pathogen defense signaling is a part of the integrated stress-signaling network in plants. SIPK and WIPK may provide convergence points for many distinct signaling cascades in plant defense and stress responses (Linkterink et al., 2001 and Choudhary and Koche, 2005).

Orthologs of SIPK and WIPK in *Arabidopsis* (AtMPK6 and AtMPK3, respectively) and alfalfa (SIMK and SAMK, stress-activated MAPK, respectively) are also activated by both biotic and abiotic stresses, further supporting this idea (Michelmore and Meyer, 1998). The question then is how can these MAPKs mediate the induction of stimulus specific defense responses. Recent studies suggest that different stimuli activate these MAPKs to different levels and with different kinetics. Thus, these MAPKs may participate in distinct signaling complexes (Mitsuhara et al. 2000).

The characterization of the loss of function mutants of MAPK signaling components would undoubtedly foster the understanding of their functions in whole plants; however, it appears to be difficult to obtain such mutants. It is likely that some MAPK signaling components are essential for cell growth and development. It is also possible that many singleknockout mutants lack readily detectable phenotypes as a result of functional redundancy (Mitller, 2002). Because of the transient nature of MAPK activation in many responses, the indirect and long lasting phenotypes of MAPK signaling mutants could be misleading or confusing. Mutant phenotypes may not always represent the primary targets of the mutated signaling pathway (Muskett et al. 2002).

Curiously, all of the MAPK signaling mutants isolated so far *ctr1, edr1, mpk4* and *mkp1* indicate only a negative regulatory role of MAPK cascades in *Arabidopsis.*Therefore, it is essential to combine various assay techniques to identify the true functions of MAPK signaling cascades in plants. Besides the core MAPK cascade components and scaffold/ anchoring proteins, the role of negative regulators such as various protein phosphatases and the identification of upstream signals, receptors/sensors, adaptor proteins, transcription factors, MAPK substrates and target genes will help us piece together the biological functions of a large number of plant gene products that are involved in the essential signaling network of protein phosphorylation (Conrath et al., 2002).

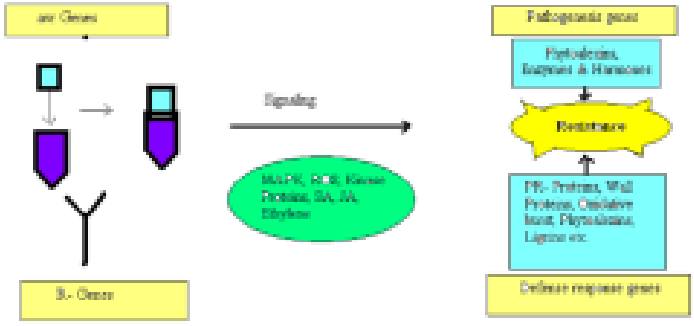
Responses:

After an *R* gene-mediated recognition of the pathogen attack, various defense responses are often activated. Localized activation of programmed cell death (PCD) in response to microbial attack is thought to act as a defense mechanism that inhibits the growth of pathogens within infected plant tissues. By killing cells at and around the site of infection this process generates a physical barrier composed of dead plant cells and limits the availability of nutrients to the pathogen because of the rapid dehydration that accompanies tissue death (Nuhse et al. 2000 and Koche and Choudhary, 2005).

Also termed the hypersensitive response (HR), this cell death response is accompanied by the induction of numerous anti-microbial defenses. Among these are pathogenesis-related (PR) proteins, such as glucanases and chitinases, and phytoalexins. It is believed that the coordinated activation of PCD and defense mechanisms at the site of pathogen entry provides the plant with an efficient defense response that prevents pathogen proliferation and its possible consequence: systemic infection (Nurenburger et al., 2001).

PCD that occurs during the HR is accompanied by an increase in the production of reactive oxygen intermediates (ROI). Recent studies indicated that ROI in the form of H_2O_2 and O_2 may be the key mediators of PCD during the HR. ROI were also involved as signal transduction agents that lead to the induction of other defense mechanisms such as PR proteins, salicylic acid (SA), biosynthesis, and systemic acquired resistance (Ossusky et al. 2000 and Koche, 2004).

Anti-microbial peptides are ancient mediators of the innate defenses of all species of life. These small lytic peptides are being used to genetically engineer disease-resistant crop plants. It is anticipated that certain (combinations of) potent anti-microbial peptides will provide relevant agronomical levels of disease control and should contribute to more sustainable agricultural practices (Romeis et al., 1999 and Koche and Choudhary, 2006).



Recently, two groups have published papers on the ectopic expression of anti-microbial genes that confer resistance to bacterial and fungal phytopathogens in transgenic potato. Whereas Caius Rommens'group directly used the natural alfalfa defensin gene alfAFP (Romeis, 2001), Santosh Misra and co-workers designed the synthetic gene MsrA1. The Misra group constructed this chimera by fusing the cecropin and melittin genes, derived from a giant silk-moth and a bee, respectively.

Defensins, cecropins and melittins are a part of many (>500) small anti-microbial peptides (26-50 amino acid residues) that are ancient mediators of the innate defenses of all life forms (Schmelzer, 2002). The antifungal peptide alfAFP and other plant, mammalian and insect defensins belong to the class of anti-microbial peptides characterized by b-sheet structures (Schmelzer, 2002). These complex folded molecules contain four, six or eight invariant cysteine residues that form several intramolecular disulfide bonds. The 5.6 kDa alfAFP peptide was, like most plant defensins, isolated from seeds where it contributes to the protection of germlings against harmful microorganisms (analogous to the common fungicide coating of crop seeds). Defensins display lytic activity through binding and disruption of microbial plasma membranes. The plant defensin DmAMP1, for example, specifically binds to fungal microsomal fractions, and yeast mutants resistant to DmAMP1 show reduced binding affinity (Sharma et al. 2000).

In addition, most promising anti-microbial peptides exhibit agronomic relevant activities against a broad range of pathogenic microorganisms, or alternatively, target specific pathogens that are difficult to control by conventional means. Ongoing clinical trials indicate that anti-microbial peptides can be used as an alternative source for human therapeutic antibiotics (Schmelzer, 2002). For exploitation in agriculture, the future challenge is to find

(combinations of) potent anti-microbial peptides that target relevant pathogens (Tekken and Josen 2000). The efficacy in plants of a new class of synthetic anti-microbial peptides is already under intense scrutiny (Thevissen et al., 2000), and synthetic combinatorial libraries are being developed to design novel biologically active peptides (Vander Horn et al., 2002 and Zhang and Klesing, 1998). The small genes (<200 base pairs) encoding anti-microbial peptides facilitate the stacking of multiple activities on single transgenes. Transgenically produced anti-microbial peptides should be directed to the relevant plant tissues and cell types, and peptide stability and proper folding have to be considered. The further discovery of anti-microbial peptides with relevant agronomic performance is keenly anticipated and should contribute to more sustainable agricultural practices.

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IFRS IN INDIA: OPPORTUNITIES AND CHALLENGES

Mr. Sanjay J. Tidke
Shri Shivaji College of Arts, Commerce and Science, Akola (M.S.)

ABSTRACT

In the present era of globalization it is foremost requirement of international uniform accounting standard to operate business successfully. It is a urgent need of hour. International Financial Reporting Standards (IFRS) is a novel way of looking at accounting. The importance of IFRS is continuously increasing. It is experienced that there is noticeable drastic changes in the way financial statements. The new accounting rules will facilitate efficient performance of financial markets and capital flows worldwide. This study has made an attempt to discuss and analyze the various aspects of IFRS in Indian context. In the first part author discuss about IFRS and adoption of IFRS in Indian context. After that analyze the opportunities adopting IFRS and discus the challenges would be face during the implementation of IFRS in India.

Key Words: *International Financial reporting Standards (IFRS), Accounting, Financial Statements*

1. INTRODUCTION:

Accounting is a 'Language of Business' communicates the financial results and health of an enterprise to various interested parties by means of periodical financial statements. Like any other language accounting should have its grammar and these sets of rules are Accounting Standards. The main objectives of these Accounting Standards are to standardize the diverse accounting policies and eliminate the incomparability of financial statements within an entity and across entities. India has a long tradition of framing accounting standards in the country. The Institute of Chartered Accountants of India (ICAI) set up under an act of Parliament had constituted an Accounting Standards Board (ASB) in April 1977 and the ASB has been framing the Indian Accounting Standards for the last three decades.

The process of financial reporting of business activities also underwent a great change. In recent times, capital markets have become global and continue to expand Moreover there has been significant globalization of production and trade. Investors can trade shares and securities worldwide. Entities are in a position to access the funds, globally in the most advantageous markets. For this investors from all over the world rely upon financial statements before taking decisions. They need to be convinced that the financial statements are true and fair and what they understand from the statements is what the person preparing them intends to convey.

2. METHODOLOGY AND OBJECTIVES OF THE STUDY

The present study is descriptive type of research based on a contemporary work in nature. The work is based on secondary data collected from published books, research articles published in professional journals, and other concern web sites,

The main objectives of this study are as below.

· To discuss the IFRS adoption procedure in India.

· To assess the utility and opportunities of implementing IFRS in India.

· To analyze the Challenges facing by adoption process of IFRS.

3. IFRS

Globalization of financial markets has meant an increased focus on international standards in accounting and has intensified efforts towards a single set of high quality, globally acceptable set of accounting standards. Financial statements prepared in different countries according to different set of rules, mean numerous national sets of standards, each with its own set of interpretation about a similar transaction, making it difficult to compare, analyze and interpret financial statements across nations. A financial reporting system supported by strong governance, high quality standards, and firm regulatory framework is the key to economic development. Indeed, sound financial reporting standards underline the trust that investors place in financial reporting information and thus play an important role in contributing to the economic development of a country. Needless to mention, internationally accepted accounting standards play a major role in this entire process.

International Financial Reporting Standards (IFRS) is a single set of high quality, understandable and enforceable international accounting standards, which is developed by International Accounting Standard Board (IASB) for Standards Interpretations and the Framework for the Preparation and Presentation of Financial Statements. It is a "principles based" set of standards which is drafted lucidly and is easy to understand and apply. Many of the standards forming part of IFRS are known by the older name of International Accounting Standards (IAS).

Converging to global accounting standards i.e. IFRS facilitates comparability between enterprises operating in different jurisdictions. Thus, global accounting standards would remove a frictional element to capital flows and lead to wider and deeper investment in markets. Convergence with IFRS is also in the interest of the industry since compliance with them would be able to create greater confidence in the mind of investors and reduce the cost of raising foreign capital. It is also burdensome and costly for enterprises operating across several countries to comply with a multitude of national accounting standards and convert them to a single standard for group reporting purposes. Convergence would thus help reduce both the cost of capital and cost of compliance for industry.

In pursuit of its objectives, the International Accounting Standard Board (IASB) works in close cooperation with stakeholders around the world, including investors, national standard-setters, regulators, auditors, academics, and others who have an interest in the development of high-quality global standards. Progress toward this goal has been steady. All major economies have established time lines to converge with or adopt IFRSs in the near future and more than hundred countries require or permit the use of IFRSs.

Though Indian Accounting Standards are framed based on standards issued by the IASB, there are certain differences due to the legal and regulatory environment prevailing in the country, conceptual issues and the economic environment. In 2007 the ICAI decided that India should converge towards IFRS in a definite time frame in the wake of developments taking place in other major jurisdictions which had set up time schedules for migrating towards IFRS.

4. ADOPTION OF IFRS IN INDIA

The use of International Financial Reporting Standards (IFRS) as a universal

financial reporting language is gaining momentum across the globe. Several countries have implemented IFRS and converged their national GAAP to IFRS. More than 100 countries throughout the world including the several European Union member states require or permit the use of International Financial Reporting Standards. Developed by the International Accounting Standard Boards (IASB). The number of countries adopting IFRS is expected to increase to 150 by end of 2013.

In the backdrop of the developments after the global financial crisis, the Ministry of Corporate Affairs (MCA), Government of India set up a high-powered Core Group under the chairmanship of Mr. Anurag Goel, Secretary (MCA) to study the impact of IFRSs and to understand the preparedness of the Indian companies for converging with IFRSs. The Institute of Chartered Accountants of India (ICAI) has announced that IFRS will be mandatory in India for financial statements for the periods beginning on or after 1 April 2012. This will be done by revising existing accounting standards to make them compatible with IFRS. Reserve Bank of India has stated that financial statements of banks need to be IFRS-compliant for periods beginning on or after 1 April 2011. The ICAI has also stated that IFRS will be applied to companies above INR 1000 crore (INR 10 billion) from April 2011.

The Road map towards IFRS convergence for corporate from April 1, 2011 has been finalized by the Ministry of Corporate Affairs in January, 2010. Phase wise applicability details for different companies in India: The table below set out the applicability of First set of standards to specified class of companies in phase manner:

The above enlisted specified class of companies will prepare an opening balance sheet in accordance with IFRS converged standards as of effective date and will follow the IFRS converged standards from the respective effective date as mentioned in above table. On March 31, 2010, the Ministry of Corporate Affairs issued the final road map of convergence with IFRS for Banking and Insurance Companies also, which were excluded from the earlier notification issued on 22nd January 2010. In brief: All insurance companies will converge with Converged

Phase	Specified class of companies	Effective Date
I	Companies in Nifty 50 Companies in Sensex 30 Companies shares or other securities listed on stock exchanges outside India Companies (whether listed or not) having net worth in excess of Rs 1,000 crores	April 1, 2011
II	Companies (whether listed or not) having net worth in excess of Rs 500 crores but less than Rs. 1, 000 crores	April 1, 2013
III	All listed companies with net worth less than Rs 500 crores	April 1, 2014

Indian accounting standards effective April 1, 2012. All scheduled commercial banks will converge effective April 1, 2013. A phased approach of convergence is prescribed for urban co-operative Banks.

5. OPPORTUNITIES OF IFRS TO INDIA

Adopting IFRS by Indian corporate is going to be very challenging but at the same time could also be rewarding. Indian corporate are likely to reap significant benefits from adopting IFRS. Companies that operate in a global environment and comply with foreign reporting requirements can streamline their financial reporting. This will reduce related reporting costs by developing common reporting systems and will ensure consistency in statutory reporting. Adoption of IFRS would thus ensure the following opportunities.

The Investors:- The investor will be benefited in as the way accounting information made available to them will be more reliable, relevant, timely and most importantly the information will be comparable across different legal framework. It will develop better understanding and confidence among the investors.

· **The Professional :-** The professional, both in practice and in employment will get benefits as they will be able to provide their services in various part of the world, as few years after everybody will follow the same reporting standards.

· **The Corporate world:-** The Indian corporate reputation and relationship with international finance community will elevate because of achievement of higher level of consistency between reporting structure and requirements; better access to international markets; improving confidence among the international investors. The international comparability will also get improve strengthening the industrial and capital markets in the country.

* Uniform universal financial language
* Improved access to international capital markets
* Cross border investments leading to economic growth
* Comparability of financial statements of any two companies anywhere in the world

Adoption of IFRS ensures the elimination of multiple financial reporting standards by these firms as they are following single set of Financial Reporting.

Most of the countries of the European Union have switched over to IFRS. It would make transaction and dealings with companies of other countries who operate under IFRS much easier and enter into globalization terminology for accounting. It would also give stock holders and other interested parties a common basis of comparability. Adopting a global financial reporting basis will enable the company to be understood in the global market place. It allows company to be perceived as an international player.

For multinational companies:

· Consolidation of group financial statements made easier
· Accounting and audit functions made easier and cheaper
· Compliance with regulatory requirements of bodies such as stock exchanges
· Mergers and acquisitions made easier
· Access to multinational funds
· The job of governments and standard setters in the developing countries made easier
· The job of various tax authorities made easier
· Administrative costs of accessing the capital markets around the world reduced.
· Time and money saved by international professional accounting firms in planning and execution of accounting and audits

· Migration of IFRS will lower the cost of raising funds, as it will eliminate the need for dual set of statement and will reduce the fees of accountant.

· Adoption of IFRS will facilitate companies to set targets and mile-stone based on global based or global business environment.

The above opportunities are perceived benefits of adoption of IFRS. Various researches are yet to be carried out to understand actual benefits of adoption of IFRS.

6. CHALLENGES IN ADOPTION OF IFRS IN INDIA

Institute of Chartered Accountants of India set up a task force in 2006 to study and suggest a path for adoption of IFRS in India. On the basis of the recommendation of task force, a 3 phased programme has been initiated to adapt to IFRS in India. Accounting Professionals in India and across the world have listed various benefits of adopting IFRS. In spite of the various benefits of adopting IFRS, implementation of IFRS is a herculean task in India. Following are a few challenges faced during adoption and implementation of IFRS:

· **Awareness about international practices:** Adoption of IFRS means that the entire set of financial statements will be required to undergo a drastic change. There are a number of differences between the two GAAP's This may cause the users of financial statements to look at them from a new perspective. It would be a challenge to bring about awareness of IFRS and its impact among the users of financial statements.

· **Training:** Professional accountants are looked upon to ensure successful implementation of IFRS. The biggest hurdle for the professionals in implementing IFRS is the lack of training facilities and academic courses on IFRS in India. As the implementation date draws closer (2011), it is observed that there is acute shortage of trained IFRS staff. The solution to this problem is that all stakeholders in the organisation should be trained and IFRS should be introduced as a full time subject in the universities.

· **Amendments to the existing law:** It is observed that implementation of IFRS may result in a number of inconsistencies with the existing laws which include the Companies Act 1956, SEBI regulations, banking laws and regulations and the insurance laws and regulations. Currently, the reporting requirements are governed by various regulators in India and their provisions override other laws. IFRS does not recognise such overriding laws. Although steps to amend these laws have been initiated, the authorities need to ensure that the laws are amended well in time.

· **Taxation:** IFRS convergence would affect most of the items in the financial statements and consequently the tax liabilities would also undergo a change. Thus the taxation laws should address the treatment of tax liabilities arising on convergence from Indian GAAP to IFRS. It is extremely important that the taxation laws recognise IFRS compliant financial statements otherwise it would duplicate administrative work for the organizations.

· **Fair value:** IFRS uses fair value as a measurement base for valuing most of the items of financial statements. The use of fair value accounting can bring a lot of volatility and subjectivity to the financial statements. It also involves a lot of hard work in arriving at the fair value and valuation experts have to be used. Moreover, adjustments to fair value result in gains or losses which are reflected in the income statements. Whether this can be included in computing distributable profit is also debated.

· **Management compensation plan:** The terms and conditions relating to management compensation plans would also have to be changed. This is because the financial results under IFRS are likely to be very different from those under the Indian GAAP. The contracts would have to be re-negotiated which is also a big challenge.

· **Reporting systems:** The disclosure and reporting requirements under IFRS are completely different from the Indian reporting requirements. Companies would have to ensure that the existing business reporting model is amended to suit the reporting requirements of IFRS. The information systems should be designed to capture new requirements related to fixed assets, segment disclosures, related party transactions, etc. Existence of proper internal control and minimizing the risk of business disruption should be taken care of while modifying or changing the information systems.

All the challenges mentioned here can be worked out by bringing a proper Internal Control & Reporting system in place. Firms, Regulators and Stock Exchanges in India should take some guidelines from the countries which have adopted the IFRS and have similar economic, political and social conditions.

7. CONCLUSION

From the above discursion about getting opportunities from adopting IFRS in India and facing various challenges to implement IFRS in India shows that there is a vast future scope. Ensuring a high quality corporate financial reporting environment depends on effective Control & Enforcement Mechanism. Merely adopting International Financial Reporting Standards is not enough. This calls for a future scope of study on impact of adoption of IFRS by Indian Companies on Indian Economy and Firms. Each interested party, namely Top Management and Directors of the Firms, Independent Auditors and Accountants and Regulators and Law Makers will have to come together and work as a team for a smooth IFRS adoption procedure.

Researchers are yet to be carried out to understand actual benefits of adoption of IFRS. Such researches are negligible for Indian financial data, as India is yet to step in the era of IFRS. This calls for a future scope of study on impact of adoption of IFRS by Indian Companies on Indian Economy and Firms.

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Studies on pharmacognostic and in vitro Antioxidant Potential of Cleome gynandra L. leaves

R. P Shirsat and P. S. Kokate
Shri Shivaji College of Arts, Commerce and Science, Akola

Abstract : ***Cleome gynandra*** L. of Cleomaceae (Capparaceae) family is an annual herb, growing up to 0.6 to 1 meter. This plant is having immense medicinal potential as per the citations found in Ayurveda, Shiddha, Unani and Tibetian health care systems. The present paper deals with the pharmacognostic studies including macroscopic, microscopic and phytochemical aspects. Its prominent feature is the antioxidant potential which indicates the promising role of this plant in medicine.

Key Words: Antioxidant, *Cleome gynandra* L. Pharmacognostic, Phytochemical.

Introduction: *Cleome gynandra* L is one of the important medicinal plant in ancient health care systems. It has been used by various tribal communities for its Rubefacient, vesicant, antiseptic, anti-inflamatory and analgestic properties to treat local pains, neuralgia, rheumatism and scorpion- stings (Kirtikar & Basu, 1935, Wealth of India, 1956, Vander and Venter 2007). Having such promising feature, but existing in alike wild community, the author had selected this plant for pharmacognostic studies for its correct identification and evaluation of its antioxidant potential.

Material and Methods: The plant material was collected from the PKDV, Akola campus. The fresh leaves were used for the microscopic observations. The phytochemical analysis was done according to Harborne (1998). The antioxidant property was analyzed according to Lakemeera et al (2008).

Results and Discussion:

Table- 1: Microscopic characters of *C. gynandra* L.

Sr.No.	Variables	Abaxial surface	Adaxial surface
1	Epidermal cell numbers/ sq. mm	610.50	660.45
2	Epidermal cell size/mm	L: 60.50, B: 30.40	L:34.25, B:18.20
3	Stomatal number/ sq. mm	155.50	170.60
4	Stomatal index	22.50	19.80

Table -2: Fluorescence analysis of *C. gynandra* leaves

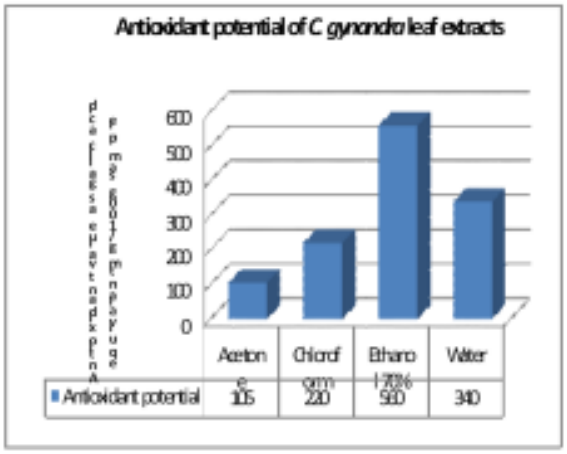
Sr. No.	Treatment of leaf powder	Under ordinary light	Under UV- C (365mn)
1	Powder as such	Dark Green	Gray
2	Powder + HCl (1N)	Brown	Light Green
3	Powder + H_2SO_4 (50%)	Dark Green	Blackish
4	Powder + NaOH (Ethanolic)	Dark Green	Red
5	Extract-		
	- Chloroform	Dark Green	Dark Red
	- Acetone	Pale Green	Pink
	- Alcohol	Pale Yellow	Dark Yellow
	- Water	Pale Yellow	Light Pink

Table-3: Phytochemical analysis of leaves of *C. gynandra* L.

Sr.No.	Phytochemicals	Chloroform extract	Acetone extract	Alcohol extract	Aqueous extract
1	Alkaloids	-	-	-	-
2	Flavonoids	-	+	++	++
3	Phenolics	-	++	++	++
4	Tannins	+	++	++	++
5	Terpenes	+	+	++	++
6	Cardiac glycosides	+	+	++	++
7	Sugars	++	-	++	++

The results indicates that, *C. gynandra* is rich in phytochemicals and most of tested phytochemicals are extracted in aqueous and alcohol extracts. The major phytochemicals identified includes, flavonoids, phenolics, tannins, terpenoids and glycosides. Similar reports was previously presented by many workers. Some important of that includes that of Mojaib et al. (2003), Koche et al. (2010), Deshmukh (2012), Jasutkar et al. (2013) and Thite et al. (2013).

The Pharmacognostic studies of leaves of *C. gynandra* may help to lay down new micro-morphological standards to identify the adulterants in the leaf drugs. This study could be asses for the parameters for morphological identification and authentification. Further, the polyphenols and essential elements which accumulate in the leaves may supply substantial antioxidants and prevent the development of related chronic diseases thus providing the health promoting principles.



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Mahatma Gandhi : The Bramha of Indian Democracy

Dr. A. P. Somwanshi
Savitribai Phule College of Education, Akot, District : Akola (M.S)

Abstract

Mahatma Gandhi: The Bramha of Indian Democracy

Democracy is a great institution and therefore it is liable to be greatly abused. The remedy, therefore, is not avoidance of democracy but reduction of possibility of abuse to a minimum. A popular state can never act in advance of public opinion. If it goes against it, it will be destroyed. The democracy or the Swaraj of masses can never come through untruthful and violent means, for the simple reason that the natural corollary to their use would be to remove all opposition through the suppression or extermination of the antagonists. His notion of democracy is that under it the weakest should have the same opportunity as the strongest. Democracy necessarily means a conflict of will and ideas, involving sometimes a war to the knife between different ideas. The very essence of democracy is that every person represents all the varied interests which compose the nation. Democracy is an impossible thing until the power is shared by all. Democracy and violence can never go together. Evolution of democracy is not possible if we are not prepared to hear the other side. Democracy, disciplined and enlightened, is the finest thing in the world. The spirit of democracy cannot be imposed from without. It has to come from within. To safeguard democracy the people must have a keen sense of independence, self-respect and their oneness. Intolerance, discourtesy and harshness are taboo in all good society and are surely contrary to the spirit of democracy. In true democracy every man and woman is taught to think for himself or herself. The spirit of democracy cannot be established in the midst of terrorism. Corruption and hypocrisy ought not to be inevitable products of democracy, as they undoubtedly are today.

Introduction:

The Indian democracy was conceived in the minds of the great freedom fighters long before it came into existence after Independence. The perennial relevance of Gandhiji's political ideology is the uniqueness of his ideology.

Mahatma Gandhi's views on democracy

The greater the institution the greater the chances of abuse. Democracy is a great institution and therefore it is liable to be greatly abused. The remedy, therefore, is not avoidance of democracy but reduction of possibility of abuse to a minimum. (Young India, 7.5.1931) A popular state can never act in advance of public opinion. If it goes against it, it will be destroyed. (Young India, 30.7.1931) The democracy or the Swaraj of masses can never come through untruthful and violent means, for the simple reason that the natural corollary to their use would be to remove all opposition through the suppression or extermination of the antagonists. (Harijan, 27.5.1939) My notion of democracy is that under it the weakest should have the same opportunity as the strongest. That can never happen except

through non-violence. (Harijan, 18.5.1940) True democracy cannot be worked by twenty men sitting at the centre. It has to be worked from below by the people of every village. (Harijan, 18.1.1948)

Democracy necessarily means a conflict of will and ideas, involving sometimes a war to the knife between different ideas. The very essence of democracy is that every person represents all the varied interests which compose the nation. Democracy is a great institution and, therefore, it is liable to be greatly abused. Democracy is an impossible thing until the power is shared by all, but let not democracy degenerate into mobocracy. Democracy is not a state in which people act like sheep. Democracy and violence can ill go together. Evolution of democracy is not possible if we are not prepared to hear the other side. Democracy, disciplined and enlightened, is the finest thing in the world. The spirit of democracy cannot be imposed from without. It has to come from within. My notion of democracy is that under it the weakest should have the same opportunity as the strongest. To safeguard democracy the people must have a keen sense of independence, self-respect and their oneness. Intolerance, discourtesy and harshness are taboo in all good society and are surely contrary to the spirit of democracy. In true democracy every man and women is taught to think for himself or herself. The spirit of democracy cannot be established in the midst of terrorism, whether governmental or popular. Corruption and hypocrisy ought not to be inevitable products of democracy, as they undoubtedly are today.

Gandhi's Perennial Relevance

Even today Mahatma Gandhi is loved and respected as the Father of the nation in India. He is a saintly person of his time who touched the mass mind in the whole country during his life time. His voice had penetrated even to the hovels of the most obscure villages and reached the ears of the lowest of the low.

When he travelled from place to place wearing a loin cloth, people in their tens of thousands used to run to get a *darshan* of him or to prostrate themselves before him .Within a short time, he brought about a mighty upheaval in the Indian nation and released a flood of spiritual. Energy which transformed the lives of many men and women.

It was a remarkable feature of the Mahatma's leadership that he was able to lead and direct great mass movements without lowering any of his moral standards. He made the common people resist injustice and tyranny in high places.This was Gandhi who always meant what he said,that he practiced what he preached,and that he was far more severe on himself than on others.

Everybody knew that he was not simply a political leader or a social reformer or a friend of the poor,but first and foremost, a man of God, a saint and a sanyasi after his own heart. He represented what every Indian admired and tried to be, but could not achieve. Renunciation (Vairagya), self-control (Brahmacharya) and penance(Tapas) have been the cherished ideals of Indians from time immemorial and here was a man who was an embodiment of these ancient virtues and who combined with them the most farsighted statesmanship, the widest toleration and the tenderest love.

No wonder, therefore, that present day Indians look upon him as the true descendent of ancient Rishis,re-interpreting their Sanatana values according to the needs of the present time and giving them a new code of conduct.

Gandhiji is something more. He is one of the greatest men who have tried to

lead mankind to a higher plane of thoughts and actions. For the aim of his life was not simply to give bread to the hungry millions or to give strength to the weak and downtrodden but to make mankind to turn a difficult corner in their toil-some journey up the hill to God.

He may be said to have taken upon himself the work of the saviours of the human race like Gautam Buddha,Adi Sankara,Christ and Goswami Tulsidas and his place will ultimately be with them in the memories of human beings. There is no doubt that in the years to come the narrative of his life would be regarded as the guide to new generations.

His life was an open book which even a child could read. His activities were mainly in the field of politics where secrecy and diplomacy were generally is recognized as legitimate method of work. But he condemned secrecy as sin in politics.

For the first time in history, Gandhiji raised politics to the level of religion .He says in the introduction to his Autobiography that his aim in life was Moksha or self realization and that all his ventures in the political field were directed to that end.

He worked for Swaraj for India and succeeded, but said he preferred Truth to Swaraj. He was one of the greatest votaries of truth who has appeared on this earth. To him truth was above everything. Hence his experiments with Truth, as he called them, were all conducted not in secrecy but in the open. There was perfect harmony between Gandhiji's life and teachings. In fact, his whole life was an embodiment of his teachings . He, even shunned popularity by design. He knew the limitations and risks of popularity. When he withdrew the Non Cooperation Movement and a BBC correspondent asked him what he thought of the general perception that his popularity had waned, the Mahatma replied, "Popularity comes without invitation and goes without farewell."So superior minds like Gandhiji knew how transient it was and how debilitating it was to chase popularity. Even though he knew the limitations of popularity, he worked to produce popular leaders were needed to lead and run the country. The difference was that they were popular leaders but were not popularity seekers. Chandragupta was a famous ruler but his mentor was Kautilya. This is the Rishi-Raj tradition of ancient India. Gandhiji was a guiding Rishi for the political leaders of the country.

Mahatma Gandhi was not only the author of *satyagrahi.* Therefore, his character as revealed by his actions is as important as his writings.Moreover,Gandhiji was primarily a man of action as Tagore was primarily a man of letters.His life was crowded with political events as Tagore's life was with literary events. But both of them had an abiding sense of the infinite behind all events.

If Tagore revealed the infinite to us through his songs,Gandiji revealed it through his actions.If the former was a poetical mystic, the latter was a practical mystic.If the writings of Tagore were a modern commentary on the Upannishads, the life of Mahatma Gandhi was the modern commentary on the Bhagavad Gita , as he was the embodiment of the ideal of Karmayogi described in the scripture. Thus each had made his contribution to the spiritual traditions of our country.

Mahatma is relevant today as ever. Sixty-three years after his heinous assignation barely a few months after he led the struggle for a free India, Mahatma Gandhi

continues to intrigue humanity across the world. Reports say that he is the most sculpted in metal and stone human all over the world since Jesus Christ. Statues in bronze and stone are sprouting in countries as far removed as the continents of Africa, America and Far-East Asia. Western universities spawn research on his philosophy of non-violent protest, emphasis on means as ends in themselves, 'Double advocacy', an idea that sees elements of truth in both sides of an argument and above all, the insistence on conversion of the opponent rather than coercion are recognized as valid and usable weapons in all conflict situations. It should be remembered that an analytical volume titled "Gandhi's Way" by a Swiss German Professor of Sociology named Mark Juergensmeyer, who claims that for every conflict, between individuals, nations, religious communities and political parties, there is a Gandhian solution based on his concepts of non –coercive struggle, double advocacy and recognition of truth in the opponent's point of view. The foremost scientist-social philosopher of the 20th century, Karl Popper, adopts this very concept for the progress of all sciences. He said there was only one way to get towards truth every argument should begin with the two contestants declaring 'I may be wrong and you may be right.'

He declared that every accepted scientific truth could only be a partial truth, "a move from a lower hypothesis to a higher hypothesis."In his stress on the means adopted in various struggles,the Mahatma made the same point."If we take care of the means,sooner or later,we are certain to reach the ends."The means become the goal itself.Satyagraha,is thus not a weapon of struggle but the struggle itself.

India is among the countable countries and ,perhaps,the first country to disown the Mahatma and his concepts of the struggle based on truth and non-violence.It took only a few months of independence for the Mahatma to realise that he had his ideas were not relevant to the rulers who were his heirs.Novelist and thinker Raja Rao put a question to himself:Was Gandhi defeated? He then gives his answer."Was Socrates defeated? For,without Socrates,there can be no modern world.And without Gandhi there can be no world of tomorrow."Historian Arnold Tonybee wrote:"It can be forecast with some confidence that Gandhi's effect on human history is going to be greater and lasting than either Stalin's or Hitler's"He said that six decades ago.Those two names are already on the way out of contemporary history's pages. There is much greater practical wisdom to be found in what Mahatma spoke,wrote and did.The things that so passionately concerned and motivated him need to be taken seriously.If one wishes to conduct his or her conflicts with the same degree of morality one finds possible in his or her quieter moments,If one strives to meet others with both force and love,if one is interested in forging a link between private principles and public justice, the Mahatma is always there as winning ally.

Conclusion:

Everyone can conduct one's own experiments with truth. But if truth is one's goal, or even if one sees a flash of hope of making your way through life's conflicts with a modicum of dignity and grace, then you may wish to try the Gandhian way-not just because of its aesthetic appeal but because it works. It holds out the prospect of being able to fight yet, at the same time, be moral, to

settle conflicts at their most basic levels and to find resolutions in which both sides emerge as victors. Above all, it leads one to a kind of fighting that is its own reward. Even if nothing else is changed by waging your battles this way,you will feel the change."And that is no mean gain," says Juergensmeyer.

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India: An Emerging World Power

'A study of India's Naval Strategy in Indian Ocean in 21st Century'

Dr. Vidya Shantaram Raut,
Sitabai Arts College, Akola-444001
(MAHARASHTRA)

This informative article analyses the unfolding geopolitical change in the Indian Ocean and dwells at some length on the challenges that it poses for India's foreign and security policies.

Economically and politically India approaches the twenty-first century a very different country from that which emerged from colonial rule into independence in 1947. By the 2020 India is expected to be the fourth largest economy in the world in terms of purchasing power parity.

Washing the shores of three continents, and surrounded by some of the fastest growing economies of the world, the Indian Ocean littoral forms a major strategic region. The Ocean covers an area of 74 million sq. kms, comprising some 20 percent of the total water area in the world. It encompasses water spaces such as the Red Sea, the Persian Gulf, the Arabian Sea, the Bay of Bengal, and the Andaman Sea. The sea routes of the Indian Ocean are vital communication links for the supply of crucial energy resources, as well as for the transport of trade between the continents. Because of the route links that the southern portion of the Indian Ocean provides between the Pacific and the Atlantic Oceans, it is of great strategic importance for global trade movements. The Persian Gulf littoral remains the largest source of global oil supplies as well as one of the most important sources of natural gas. Thus, countries of the continents bordering the Pacific, Atlantic and the Indian Ocean are heavily dependent on these ocean-based trade routes to obtain energy resources for the growth of their economies and burgeoning industrial needs. Because the Indian Ocean area is of such significance, many powerful countries are actively involved in maintaining and expanding their naval presence in it. This informative article focuses on an aspect which is developing fast and has great implications for the Indian Ocean area and its littoral countries, namely, the Indian naval expansion in the Indian Ocean region.

The term 'Sea India' is emerging perception in the 20th century and it has various facets in the changing scenario of Indian Ocean policy. The Indian Ocean policy is a part and parcel of India's foreign policy. India is not the India of 1947; India was poor and backward in Ocean Sciences and Technology at the time of independence. In 20th century India has assumed amazing development of Indian navy and acquired status of one of the principle naval power in Indian Ocean.

The Emerging Indian Maritime Strategy

The main issues of concern to India have been laid out. It is, therefore, important to assess India's proactive role to secure its national interests in terms of its reactions to the developments discussed above.

Increasing Maritime Jurisdiction Areas

India signed the United Nations Convention on the Law of the Sea (UNCLOS) in 1982 and ratified it in 1994. This law gives each country sovereignty over 12 nautical miles

of its territorial sea, and economic jurisdiction rights to an Exclusive Economic Zone, stretching to 200 nautical miles from the coastline. In 1987, India became the world's first country to earn itself the status of a 'pioneer investor', which allows it an area of 150,000 sq. km in the central Indian Ocean for deep sea mining under its exclusive first rights. In the first half of the year 2001, India ventured to undertake a $12 million project to mark the outer reaches of its continental shelf and expand its jurisdiction by an additional one million square kilometers beyond its existing economic zone. UNCLOS defines the Continental Shelf thus:

'The continental shelf of a coastal state comprises the sea-bed and the subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend to that distance.'

Under UNCLOS, information on shelf limits outside the 200-mile belt is to be submitted by the coastal state to the Commission on the Limits of the Continental Shelf. India, after ascertaining the reaches of its continental shelf, will present its claims to United Nations Commission on Limits of Continental Shelf. Should India's claim be approved by the Commission, it would be able to lay its jurisdictional claim to a maximum distance of 350 nautical miles from the baselines. Under the provisions of UNCLOS, India would then have sovereign rights over an extended continental shelf, for the purpose of exploring and exploiting its natural resources. The sea-bed resources include not only minerals and other non-living resources but also its marine life resources. It would also enable India to lay claim to sea-bed areas, much beyond the two million square kilometers of its Exclusive Economic Zone, which means a manifold increase in its deep-sea fishing sphere, as well as for potential sea-based energy resources of the Indian Ocean.

Although the rights attached to the claim of the continental shelf do not impair navigation rights or freedom of the other states, in activities such as laying under-the-sea cables and pipelines, these are subject to a coastal state's consent. Moreover, only the coastal state is to have the exclusive right to construct installations and structures on its continental shelf, as well as authorise and regulate drilling on its continental shelf under agreement with outsider parties.

India's authority is being establishment in territorial waters and EEZ in the Indian Ocean, utilizing advancement in marine technology and making the Indian territorial water as a sea agricultural producing zone in the future, using living and non-living wealth available in the Indian territorial water for realizing dream of India to became super power by 2020. India is being invited by some of the Indian Ocean littoral states to form the block so as to develop them with each other's co-operation.

Mauritius took initiative in the establishment M7 group which is now known as M14 and includes India, Australia, and South Africa as its principle members. M14 group has accepted Indian leadership to convert it into an organizational and institutional reality to speed up development through co-operation. Ninety percent of the world's trade and sixty five percent of all oil travel are being carried out through sea and the maritime economic scenario throughout the world is in the midst of revolutionary

changes. The changes and the emerging sea-dependent trade partner of the world would have a significant impact on Asia's maritime and economic growth in 21st century. India wants to make Ocean as a 'Peace-Zone' and need support of the littoral states of Indian Ocean and others states to pass the related resolution in the UN. The objective of making Indian Ocean, to establish security measures in the Indian Ocean territorial waters, to drive out the exploiters of the Indian Ocean for India's future development etc., attract researcher's intellect to realize India as a mighty naval power in the Indian Ocean. Eric Grove identifies three roles for navies: the military role, the diplomatic role and the constabulary role. The military role, the one for which naval forces are mainly designed, includes power projection (including strategic nuclear mission), sea control (defending shipping) and sea denial (including coastal defense)Grove divides the diplomatic role into "gunboat diplomacy" and "showing the flag ". Gunboat diplomacy is "the use of threat of limited naval force other than as an act of war" showing the flag is "a more general reminder to forgiveness of the existence of the navy concerned". The constabulary role includes the maintenance of sovereignty, safeguarding national resources and their use, and international peacekeeping. The creation in the United Nations Convention of the Law of the Sea of the 200- nautical mile exclusive economic zone (EEZ), for example, will ensure that safeguarding oceanic resources will become increasingly important in the 1990s for many navies The importance put on policing EEZs is demonstrated by the fact that a total of 116 countries deploy patrol and coastal combat ships mainly for purpose[1]. India realizes the importance of Indian Ocean. The importance of Indian Ocean to India and its building future is tremendous. India's ocean policy is continuously amended to meet the new demand due to the scientific and technological development and utilizing it in the establishment of marine industries so as to fulfill the growing needs of sea food and raw material from the Ocean bed in the form of nodules.

The role of India's ocean policy in the progress of India is a new area of research. The India's awareness of Indian Ocean policy and its 'Storage of Wealth' to make India wealthy and prosperous and the utilization of sea wealth can be done in the development of India and improvement of India and improving the 'life span' and standard of living of the Indians.

The Indian Ocean is the third largest of the world's oceanic divisions covering about 20% of the Earth's surface. The significance of Indian Ocean can be gauged by the oft-quoted century old statesmen of Alfred Taylor Mahan (1846-1914)-

"…….Whoever control the Indian Ocean dominates Asia….The Ocean is the key to the seven seas. In the 20th century, the destiny of the word will be decided on its waters…"

The Indian Ocean region as the newest "heart of the world" became very rich in terms of natural resources. The third largest of the world oceans, Indian Ocean lies adjacent to the continents of Asia, Africa and Australia considered the most important part because it is accessible to the west and the east only through narrow straits. The Indian Ocean is dominated by two immense bays, the Arabian Sea and the Bay of Bengal, near the top of which are two of the least stable countries in the world: Pakistan and Myanmar. The Indian Ocean has its own unique features. Its waters are warm, calm and it is the warmest ocean in the world. The

Indian Ocean is far calmer and thus to trade earlier than the Atlantic or Pacific Ocean.

India, Indian Ocean and word politics are related to Indian Ocean prior to independence of India. The Govt. of India has used Indian Ocean assets to developing and improving the standard of living through Indian Ocean policy after Independence of India. India has 7,515 Km. of coastline and 2.02 million sq. km. of E.E.Z. of India is equivalent to about 66 % of its landmass and 4.2% of the Indian Ocean. Although it is not legally an Indian 'territory per se, the fact that the Govt. of India has sovereign rights over virtually all the resources in the new oceanic zones, means that we have, in effect, two India's, one, 'land India' and the other, 'Sea India'. Even though 'Land India' is governed by the general purpose, governments (federal, state and local), decisions about 'Ocean India' rely upon single-purpose government agencies under specific and narrow legislative mandates. Also in earlier times (i. e. before any demarcation of maritime zones of India), the use of a fragmented approach was of relatively little consequences, but today's needs and conflicts are making it clear that new and more appropriate forms of Ocean governance must be considered.[1]

India's Foreign Policy since 1971 is something different than that of the earlier period. India's position in community of Nations was upgraded and there onwards India's progress as 'a state not to be neglected' gained momentum and in a short period India became superpower of Asia & then later on Nuclear Power State besides Industries State.

India's increasing role in the Asia-Pacific has been firmly supported by the region's premier naval power, the United States. Since 2001, the U.S. and India have conducted over 40 joint military exercises, including one of the largest multilateral naval exercises ever held in the region, Malabar 2007, which featured three aircraft carriers, 28 surface vessels, 150 aircraft and over 20,000 personnel from India, the U.S., Japan, Australia and Singapore. A 10-year Indo-U.S. defense pact signed in June 2005 deepened intelligence-sharing, military technology transfers, missile-defense collaboration and arms sales.

Changes in the distribution of power, historians hold, are the main source of systemic conflict in world politics. The rise of new powers and the decline of the old sets up the context for destabilizing struggle for rebalancing the world.

The control of Indian Ocean territorial water and implementation of Indian Authority on it has brought tremendous change in the diplomacy of Indian Ocean and its impact of it on world politics.

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Ethnomedicinal Potential of Some Euphorbian members form Bhandara District (MS) India

A. K. Zingare,
Department of Botany, M. B. Patel College, Sakoli (MS) India

Abstract:

The present study is focused on the ethnomedicinal potential of Euphorbian members found in Bhandara District (MS) India. Euphorbeace is an unique family with most wild members in angiosperms. Most of these members has great medicinal potential. About 17 different plant species were presented here along with their local names and ethnomedicinal uses.

Key Words: Ethnomedicine, Euphorbeace.

Introduction:

Since the last quarter of 20th century most of the bioscience researchers are working on ethnobotanical investigations to fulfill the increasing demand of plant artifacts and herbal products. Indian subcontinent is virtually excels with the diverse flora having number of plants with ethnobotanical and ethnomedicinal importance. It has been reported that about 20,000 plant species are found in Indian flora having different medicinal properties and more than this have other ethnobotanical importance. Of which about 7% are on the verge of extinction. Therefore it is essential to investigate such plants from different unexplored regions and collect the indigenous knowledge regarding their utilities. Therefore, present work was planned to survey the medicinal plants of euphorbiaceae found in Bhandara District (MS).

Material and Methods:

Most of the members of Euphorbiaceae are wild and grown in waste lands and forest. Some of these are perennial while other are seasonal, thus showing the diversity in forms and habitats. The investigator first interviewed some local Medicinemen / Vaidoos from the village community and tribal communities located near the reserve forest area of Nagzira wild life sanctuary and forest in vicinity.

Observations and Results:

After gathering the information on medicinal uses of plants specially, euphorbiaceae members, a survey was conducted to collect the plants. The ethnomedicinal values of these plants along with their pharmacological screening is presented in this report.

1. Botanical Name: *Acalypha indica* L.
[Vernacular name: Kupi]

- Fresh juice of leaves mixed with salt is applied on eczema of hand and foot sole.
- Leaf paste mixed with lime juice is applied on burns to cure.
- It is also useful in early stages of ringworm.
- Recently it has been suggested to have anti-diabetic property.
- The leaves are also used to cure Jaundice.
- This plant also showed anti-inflamatory property.

2. Botanical Name: *Baliospermum montanum* Willd.

- Root decoction (2 table spoon) is administered once in a week to recover Jaundice.
- The seed paste is applied externally on wound swellings to reduce.

3. Botanical Name : *Cicca acidica* (L) Merr.

· The fruit paste is applied on head skull to remove dandruff.

· The tribals use this plant to cure night blindness

· Is also has anti- vomiting property.

4. Botanical Name : *Clestanthus collinus* Benth. [Vernacular name: Garadi]

· The leaves are used as antidote against snake bite.

· The leaves and stem shows insecticidal property. The local peoples use it as insecticide to protect the crop (Rice) from insects.

· It is a potential fish poison.

5. Botanical Name : *Croton bonplandium* Baill [Vernacular name: Putri]

· Latex of plant is applied to cure scabies and sores.

· Leaf paste is applied to cuts and wounds to stop bleeding,

· Stem juice is used in ring worm.

· Some tribals also use it to cure bronchitis and asthma.

· The root extract is given to cure ulcer (required monitoring).

6. Botanical Name : *Emblica officinalis* Gaerth. [Vernacular name: Awla]

· Equal amount of E. officinalis and Azadirachta indica powder mixed with honey is used in leprosy.

· The seed powder mixed with coconut oil is applied on inching part to get cure.

· Latex of the plant is applied on painful wounds.

· Fresh leaf juice is applied on cuts and wounds to stop blooding.

· The fruit juice is given in general weakness.

· The fruit juice is also given to cure night blindness.

· Murraba made from fruits are given to relieve the dysuria.

· The fruits are also used to control cough and vomiting.

· It also have antidandruff property. The juice of fruit is applied on head to remove dandruff.

· The leaves showed antibacterial and antiviral property.

· The stem is used for its anti-inflammatory property.

· The stem bark is use to cure diarrhea and dysentery.

· The fruits is also used to cure Strangury.

7. Botanical Name : *Euphorbia geniculata* Ortg.

· Fresh leaf latex is applied on skin to cure rashes and pimples.

· The plant juice is also posses lice killing property.

· It is also potential to cure diarrhea and dysentery.

8. Botanical Name: *Euphorbia heterophylla* L.

· The leaf juice is recommended in Malarial fever.

· The leaf paste is applied externally on skin rashes.

· The plant also has purgative property and also used on bronchial disorders.

9. Botanical Name : *Euphorbia hirta* L. [Vernacular name: Dudhi]

· Latex is applied against skin parasites twice daily until cure.

· Latex is also used to cure warts.

· The leaves are use to cure urinary problems, inching and gonorrhea

· It is also used as antiseptic by local tribals.

· Mixture of root extract and Jaggury with Zeera (Cuminum cyminum L) is given to control excessive urination.

· The whole plant decoction is given daily for 5 days as antidote on snake bite.

· The whole plant with phyllanthus amarus is crushed and juice is given to cure spermatorrhoea.

· The whole plant extract is also given to cure piles.

10. Botanical Name *: Euphorbia pulcherrima* Willd. [Vernacular name: Lalpatta]

· The latex is use to cure rheumatic pain. The latex is gently applied on the location generally during night with slight massage.

11. Botanical Name : *Euphorbia thymifolia* L. [Vernacular name: Chota Dudhi]

· Fresh latex is applied on ringworms and pimples.

· Fresh plant paste mixed with butter is applied on skin for curing inching.

· Paste of plant juice mixed with castor oil have wound hilling property.

12. Botanical Name : *Jatropha curcus* L. [Vernacular name: Safed Arand]

· The seed oil is useful to cure skin diseases like Leucoderma, sores and pimples.

· The fresh latex of the plant is to cure eczema.

· The leaf and stem latex is used against oral ulcers.

· The leaf latex is applied externally on skin burns.

13. Botanical Name *: Kirganelia reticulata* (Poir.)., Etudes [Vernacular name: Pitundi]

· The whole plant extract is used as stimulant, Astringent and Anathelmatic.

· It also been used as Antidote for snake bite & and has antimicrobial property.

· The leaf extract is diuretic and cure diarrhea.

14. Botanical name: *Mallotus oppositifolius* Mill. Arge.

· The bark extract is recommended in dysentery.

· The bark paste is applied externally on wounds and cuts.

15. Botanical Name: *Phyllanthus amarus* Sehum & Thum. [Vernacular name: Bhui –Awla]

· Fresh leaf paste has wound hilling capacity.

· The stem juice is also used as wound hillers.

· The whole plant extract is given to cure urinary problems.

· The leaf paste is used to cure white spots on skin.

· The leaf extract is use to cure jaundice.

· The root extract is given to cure stomach pain.

· The flower paste of plant is applied externally as antidote against snake bite.

· The whole plant with *Euohorbia hirta* L is crushed and juice is given to cure spermatorrhoea.

· The whole plant juice is given to reduce the swelling on liver.

16. Botanical Name : *Ricinus communis* L. [Vernacular name: Arand]

· Root decoction is applied over skin wounds and warts, twice daily till cure.

· Fresh leaf juice is applied for wound healing and carbuncle.

· Warmed root paste is applied to cure boils.

· The seed oil is used to cure heel cracks.

17. Botanical Name: *Tragia involucrate* Mill. Arg.

· The whole plant juice is recommended as antidote on snake bite for about 6 days.

· The leaf paste is used to eradicate skin infections.

Discussion:

The ethnobotanical study reveals the therapeutic potential applications of 31 plant species to treat different diseases and ailments among the villagers in the study area. The present investigation has brought

to light certain little known potential ethnomedicinal plants of therapeutic value employed to cure diseases such as Lecoderma, insect bite, constipation, diabetes, ear ache hydrocoel, jaundice, epilepsy, bone fracture, breast ulcer, dysentery, eyesight improvement, stomach pain fever, cough, cold, toothache, eye infection, diarrhoea and laxative.

Traditional knowledge on utility and utilization aspects of plants has been sensing as a suitable tool for botanical and agricultural research owing to its relevance in developmental and promotional activities of new or less known economic plants (Schultes, 1962; De, 1968; Jain, 1981; Parado et al. 2000; Koche et al. 2008 and Balkrishnan et al. 2009). The work would probably help to conduct the applied research on the plants of euphorbiaceae.

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Preliminary Phytochemical Analysis of Seven Ethno- Medicinal Plants from Central Maharashtra

Jaishri Jasutkar,
Ruapli Shirsat and Deepak Koche
Department of Botany, Shri Shivaji College, Akola
Emai- rupalikoche1985@gmail.com

ABSTRACT

Phytochemical screening of seven native plants from Akola region of central Maharashtra i.e. *Achyranthus aspera, Acalypha indica, Euphorbia hirta, Leucas aspera, Mentha arvensis, Parthenium hysterophorus* and *Peristrophe bicalyculata* were carried out by using standard methods for conducting Qualitative phytochemical analysis to identify the presence of active compounds like Alkaloids, Tannins, Saponins, Glycosides, Phenols, Flavonoids, Anthroquinone, Terpenoids and Steroids in different organic and aqueous extracts. Ethanolic extract of *Achyranthus aspera* showed all of these phytocompounds except Tannins in comparison to other extracts. However ethanolic extracts of all plant species revealed the presence of most of the phytocompounds in comparison to other extracts tested. Successive isolation of phytocompounds from plant materials depended on the type of solvent used in extraction procedure. The qualitative changes in the Phytochemical analysis of tested plant species are correlated to methods of preparation. The presence of specific phytochemical group can be correlated further with their medicinal potential and be explore further for the development of ailment specific drugs.

Key Words: Phytochemical screening, Active compounds, Medicinal potencial, Drug

INTRODUCTION

Phytochemical studies have attracted the attention of plant scientists due to the development of new and sophisticated techniques. These techniques played a significant role in giving the solution to systematic problems on the one hand and in the search for additional resources of raw materials for pharmaceutical industry on the other hand. Plant synthesizes a wide variety of chemical compounds, which can be sorted by their bio synthesis and functional groups in primary and secondary metabolites. For the same, knowledge of the chemical constituents of plants is most desirable, (Mojab et al., 2003).

Among the 120 active compounds currently isolated from the higher plants are widely used in modern medicine, today 80 percent show a positive correlation between their modern therapeutic use and the traditional use of the plants from which they are derived (Fabricant, 2001). The phytochemical interaction and trace components may alter the drug response in various ways. Pharmaceutical researchers recognize the concept of drug synergism but note that clinical trails may be used to investigate the efficacy of a particular herbal preparation, provided the formulation of that herb is consistent (Izhaki, 2001).

There is evidence that using some alternative medicines especially those evolving herbs, metals, minerals or other materials involves potentially serious risks

including toxicity. With the development of natural product chemistry, the potential of chemotaxonomy is now being increasingly obvious. The application of chemical data to systematics has received serious attention of a large number of biochemists and botanists (Sharnabasappa et al., 2007). The screening of plant extracts of plant products for antimicrobial activity has shown that higher plants represent a potential source of novel antibiotic potential (Afolayan, 2003 and Koche et al., 2010). Hence during the present investigations phytochemical screening of seven different native plants of Akola region (central Maharashtra) was carried out to analyze the presence of chemical constituents that included primary and secondary metabolites, with a view to recommend their application in pharmaceutical industry.

MATERIAL AND METHODS

Collection of plant materials:

The whole plant parts in this investigations were collected from different localities from Akola region of Central Maharashtra (India) during the flowering period in the year 2010-2011, and the voucher specimens of the following plants like *Achyranthus aspera (Amaramthaceae), Acalypha indica (Euphorbiaceae), Euphorbia hirta (Euphorbiaceae), Lucas aspera and Mentha arvensis (Lamiaceae), Parthenium hysterophorus (Compositae)* and *Peristrophe bicalyculata (Acanthaceae)* were prepared and submitted in the herbarium of Department of Botany, Shri Shivaji College of Arts, Commerce and Science, Akola (MS). Fresh plant materials were washed under running tap water and then with distilled water, air dried and then homogenized to fine powder and stored in airtight bottles till further experimentation.

Preparation of Extracts:

For both aqueous (crude) and solvent extractions, 25 g of air-dried powder of the medicinal plants were taken separately with 150 ml of organic solvents (Ethanol and Acetone) and were taken into the soxhlet apparatus which was run upto 48 hrs till the green colour of the plant material disappeared. After which the extracts were collected and stored at 4^{o}C in airtight bottles and were qualitatively tested for the presence of various phytocompounds.

Preliminary phytochemical analysis:

The preliminary phytochemistry was done as described by Trease and Evans, 1996; Horborne, 1998 and Krishnaiah et al., 2009. The brief account of methods employed are presented below-

Alkaloids: The solvent extract (corresponding to 2.5 g of plant material) was evaporated to dryness and the residue was heated on a boiling water bath with 2N HCl (5ml). After cooling, the mixture was filtered and treated with few drops of Mayer's reagent. The sample was then observed for the presence of turbidity or precipitation.

Tannins: The solvent extract (corresponding to 1 g of plant material) was evaporated and the residue was extracted by 10ml of hot 0.9% NaCl solution, filtered and divided into 3 equal portions, sodium chloride solution was added to one portion of the test extract, 1% gelatin solution to a second portion and the gelatin-salt reagent to a third portion. Precipitation with the latter reagent or with both the second and third reagent is indicative of the presence of tannins. Positive tests are confirmed by the addition of FeCl3 solution to the extract and that resulted in a characteristic blue – black, green or blue green colour and precipitate.

Saponins: About 2.5 g of the plant material was extracted with boiling water. After cooling, the extract was shaken vigorously

to froth and was then allowed to stand for 15-20 min and classified for saponin content as follows: no froth = negative; froth less than 1 cm = weakly positive; froth 1.2 cm high = positive; and froth greater than 2 cm high = strongly positive.

Glycosides: 0.5 g of solvent extract was dissolved in 2.0 ml of glacial acetic acid containing one drop of FeCl3 Solution. This was then under laid with 1.0 ml of concentrated H2So4. A brown ring obtained at the interface indicated the presence of glycosides.

Phenols: The Solvent plant extract was treated with few drops of neutral ferric chloride solution 5%, intense colour developed indicates the presence of phenols.

Flavonoids: The solvent extract (5 ml, corresponding to 1 g of plant material) was treated with a few drops of concentrated HCl and magnesium turnings (0.5 g). The presence of flavonoids was indicative if pink or magenta – red colour developed within 3 min.

Anthroquinones: Borntreger's test was used for the detection of anthroquinones. 5 g of plant extract was shaken with 10 ml of Benzene. This was filtered and 5.0 ml of 10% ammonia solution was added to the filtrate. The mixture was shaken and the presence of violet colour in the ammonical (lower) phase indicated the presence of free hydroxyl anthroquinones .

Terpenoids: The Solvent extract of plant material was taken in a test tube and then added few pieces of tin plus 3 drops of thionyl chloride, violet or purple colour developed indicated the presence of terpenoids.

Steriods: (Liebermann Burchard reaction: 200 mg plant extract in 10 ml chloroform, filtered), 2 ml filtrate + 2 ml acetic anhydride + conc. H2SO4. Blue green ring indicated the presence of steroids.

RESULTS AND DISCUSSION

The results of preliminary phytochemical analysis are tabulated in Table 1. The phytochemical study revealed the presence of various phytocompounds in both aqueous and Solvent extracts. In the Ethanolic solvent extract various phytocompounds like Alkaloids, Flavonoids, Saponins, Glycosides, Phenols, Anthroquinones, Terpenoids and Steroids were present in *Achyranthus aspera* except Tannins. However in Acetone solvent extract, Saponins & Tannins were absent and other compounds were found to be present. Where as in Aqueous extract only Glycosides, Terpenoids, Anthroquinones and Steroids were found to be present, while the rest of the compounds were found to be absent (Table 1).

In the ethonalic solvent extract of *Acalypha indica* Alkaloids, Tannins,Saponins, Flavonoids, Terpenoids and Steroids were present, where as Glycosides, Phenols and Anthroquinones were tested absent. Acetonic extract showed the presence of only Alkaloids, Saponins, Terpenoids and Steroids whereas Tannins, Glycosides, Phenols, Flavonoids and Anthroquinones were absent. In aqueous extract none of the Phytocompound was tested positive.

Ethanolic extract of *Euphorbia hirta* showed the presence of all Phytocompounds analysed except Phenols. However in the Acetonic extract Glycosides, Phenols, Flavonoids and Steroids were present rest of the Phytocompounds were absent. In the aqueous extract Tannins, Saponins, Glycosides, Flavonoids, Terpenoids and Steroids were present, whereas Alkaloids, Phenols and Anthroquinones were found to be absent.

Ethanolic extract of *Leucas aspera and Metha arvensis* showed the presence of Phytocompounds like Alkaloids, Phenols and Flavonoids, other compounds such as

Tannins, Glycosides, Anthroquinones, Terpenoids and Steroids were found to be absent. Acetonic extract showed the presence of Glycosides, Phenols, Flavonoids, Anthroquinons and Terpenoids, whereas Alkaloids, Tannins, Saponins and Steroids were absent. The aqueous extract showed the presence of Alkaloids, Saponins, Glycosides and Flavonoids whereas Tannins, Phenols, Anthroquinones, Terpenoids and Steroids were found to be absent.

In the Ethanolic extract of *Parthenium hysterophorus* Alkaloids, Tannins and Flavonoids were present, rest of the compounds like Saponins, Glycosides, Phenols, Anthroquinons, Terpenoids and Steroids were absent. Acetonic solvent extract showed the presence of Alkaloids, Glycosides, Flavonoids, Terpenoids and Steroids whereas Tannins, Saponins, Phenols and Anthroquinons were absent. The aqueous extract showed the presence of only Glycosides, Terpenoids and Steroids, rest of the compounds were found to be absent. The Ethanolic extract of *Peristrophe bicalyculata* showed the presence of Alkaloids, Tannins, Phenols, Flavonoids, Terpenoids and Steroids whereas Saponins, Glycosides and Anthroquinones were absent. In the Acetonic extract only Alkaloids, Terpenoids and Steroids were present, rest of the Phytocompounds were absent. In the aqueous extract Alkaloids, Flavonoids, Terpenoids and Steroids were present, rest of the compounds were found to be absent.

All plants produce chemical compounds as part of their normal metabolic activities. These include primary metabolites found in smaller range of plants, some useful ones found only in a particular genus or species (Stepp, 2004). Herbalists tend to use extracts from parts of plants, such as the roots or leaves but not isolate particular phytochemicals. Pharmaceutial medicine prefers single ingredients on the grounds that dosage can be easily quantified (Koche, 2010). Plant synthesizes a wide variety of chemical compounds, which can be sorted by their chemical class, bio synthetic origin and functional groups into primary and secondary metabolites (Sharanabasappa et al., 2007 and Shirsat et al., 2012).

CONCLUSION

This study of the preliminary phytochemical analysis revealed that these phytocompounds are mainly present in the Ethanolic extract as compared to Acetonic or Aqueous extract as shown in Table 1. So the Ethanolic extract of the samples of plant material were found to contain the required major phytocompounds and other nutritive compounds needed by the pharamaceutical companies as well as in food supplements. The quantitative analysis of these phytocompounds will be an interesting area for further study.

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Table-1: Preliminary phytochemical analysis of seven selected ethnomedicinal plants

Plant species	Solvent	Alkaloid	Tannin	Saponin	Glycoside	Phenols	Flavonoids	Anthraquinones	Terpenoids	Steroids
Achyranthus aspera	Ethanol	+	-	+	+	+	+	+	+	+
	Acetone	+	-	-	+	+	+	+	+	+
	Aqueous	-	-	-	+	-	-	-	+	+
Acalypha indica	Ethanol	+	+	+	-	-	+	-	+	+
	Acetone	+	-	+	-	-	-	-	+	+
	Aqueous	-	-	-	+	-	-	-	+	+
Euphorbia hirta	Ethanol	+	+	+	+	-	-	+	+	+
	Acetone	-	-	-	+	+	+	-	-	+
	Aqueous	-	+	+	+	-	-	-	+	+
Leucas aspera	Ethanol	+	+	-	+	+	+	-	+	-
	Acetone	-	+	-	+	+	+	-	-	+
	Aqueous	-	-	-	+	-	+	-	-	-
Mentha arvensis	Ethanol	+	+	-	+	+	+	-	+	-
	Acetone	-	+	-	+	+	+	-	-	+
	Aqueous	-	-	-	+	-	+	-	-	-
Parthenium Hysterophorus	Ethanol	+	+	-	-	-	+	-	-	-
	Acetone	+	-	-	+	-	+	-	+	+
	Aqueous	-	-	-	+	-	-	-	+	+
Penstrophe bicalyculata	Ethanol	+	+	-	-	+	+	-	+	+
	Acetone	+	-	-	-	-	-	-	+	+
	Aqueous	+	-	-	-	-	-	-	+	+

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'An Analytical Study of Adoption of E-Accounting in Marketing'

Dr. A. M. Raut
Shri Shivaji College, Akola

Abstract:
The present research paper focuses on the topic adoption of e-accounting in marketing of Akola city of Maharashtra state. An experimental survey has been conducted to examine the adoption & awareness of e-accounting services with a sample size of 20 firms of medicine and drug supplies in Akola City.
From the responses of respondents the major findings of the present study are
· The majority of the respondents are shown positive (says Yes) response for e-accounting.
· Two major area where e-accounting process is used,
1. Customers & Sales
2. Suppliers and purchases.
· The majority of the respondents are also shown positive response (says Yes) in Invoicing & Reports.
· But in e-banking & Nominal ledgers there is a poor response.
· They are happy with the advantages of e-accounting. But due to lack of knowledge about the software and their applications they faced many problems.
In the light of these major findings we can say that there is a massive scope for e-accounting in retailers & suppliers. Till the date large number of businessmen are unknown about all features of e-accounting. There is an urgent need to aware these people to use e-accounting services.

Introduction
E-Accounting or Online Accounting is new development in field of accounting . It means all your transactions will record in online. E-Accounting is just in the developing age and up to 2010 , it will surely commercialize use . There are large number of companies who started E-Accounting . In E-Accounting the accountant and employer both feel satisfaction.

E-Accounting Concept is adopted international level. The International Accounting Standards Board is also in favour of E-Accounting . It is developing new standards which can be utilized for E-Accounting at international level. The International Federation of Accountants is searching all the tools of E-Accounting for quality accounting education and its development . There are long list of international accounting organisations who is supporting E-Accounting .
In other words all major institution and organisation are in the favor of E-Accounting . In this all major accounting relating to General ledger Book keeping and maintenance , Bank reconciliation MIS Cash management , Account Payable and Receivables , Billing Payroll , Budgeting Management of Records Asset , management Detailed financial analysis , Collection management , Credit management , Generation of financial reports Financial statements are totally online . Company's all accounting project can be easily outsourced by E-Accounting system.

Key Features of E-Accounting:
· Anytime anywhere access
· Fast access quick result

- Relate Multiple users and location
- Secure data processing
- Minimize technological hussies

Major Area of e-accounting:

- Customer and slales
- Supplers and purchases
- Banking
- Invoicing
- Nominal ledger
- Financial module
- Reports
- Security and user management

Research Methodology:

To study the e-accounting adoption in Akola City, a random sample of small and medium-sized firm in medical marketing agencies were selected. The sample size is planned to be 20. The sample would include both non-adopters and adopters of e-accounting systems. An introduction letter will be sent to the managers of these firms to explain the purpose of the research and to ask for participation in the research. Questionnaires will be developed. The questionnaires will include both closed format questions and some open format questions.

To further investigate the actual benefits of e-accounting, empirical studies of some 20 small and medium-sized accounting agencies will be undertaken. These companies will be selected among the agencies in city The main data collection method will be face-to-face, structured interviews with managers of these organisations or, when necessary, telephone interviews.

Objectives of the study:

The main objectives of the study are :

1 To identify the adoption of e-accounting process in marketing.

2 To study the individual awareness about new technology of 'e-accounting'.

Data Analysis and Findings:

The analysis of personal attributes of respondents is highlighted in following Table.

Personal Attributes & Highlights of Responses of samples Related to Adoption E-Accounting

Attribute	Particulars	Percentage
Monthly Turnover	1 to 3 lakhs	10%
	3 to 5 lakhs	35%
	5 to 7 lakhs	35%
	7 to 9 lakhs	10%
	9 lakhs And above	10%
Adoption of E- Accounting		
	Yes 95% No	5%
Area of e-accounting		
	Customer & Sales	100%
	Supplies & purchases	100%
	Banking	5.79%
	Invoicing	9.47%
	Nominal ledger	1.05%
	Reports	8.42%

Source – Primary Data

With reference to the personal profile of the respondents the above table shows that majority of respondents are from the group of 3 to 5 lakhs and 5 to 7 lakhs monthly turnover years i.e. 70 percent of total respondents. Out of total respondents 95 percent respondents are adopted e-accounting system in the business.

From the above table,

- Out of the total respondents 100% are adopted e-accounting for customers & Sales.
- Out of total respondents 100% are adopted e-accounting for suppliers & purchases.
- Only 15.79% respondents are 100% are adopted e-accounting for Banking
- Total 89.47 % of respondent says they adopt e-accounting for Invocing.
- Only 21.05 % of respondent says they use e-accounting for Nominal Ledgers.
- Out of the total respondents 68.42% are adopted e-accounting for reports.

Major of Findings:

· The majority of the respondents are shown positive (says Yes) response for e-accounting.

· Two major area where e-accounting process is used are,

1. Customers & Sales
2. Suppliers and purchases.

The majority of the respondents are also shown positive response (says Yes) in Invoicing & Reports.

But in e-banking & Nominal ledgers there is a poor response.

They are happy with the advantages of e-accounting. But due to lack of knowledge about the software and their applications they faced many problems.

Conclusion :

In the light of these major findings we can say that there is a massive scope for e-accounting in retailers & suppliers. Till the date large number of businessmen are unknown about all features of e-accounting. There is an urgent need to aware these people to use e-accounting services.

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Preliminary Phytochemical Scerrining of *Hyptis Suaveolens* (L). Poit Aerial part

Jaishree M. Jasutkar
Shri Shivaji College, Akola

ABSTRACT :

The aerial parts of *Hyptis suaveolens* (L). Poit were investigated for availability of preliminary phytochemical compounds. Different medicinal compounds as alkaloids, carbohydrates, glycosides, phytosterols, saponins, phenolic compounds and tannins were found. Dry powder of leaves was extracted with acetone, ethanol and distilled water. The solvent free extract obtained was then subjected to qualitative tests for the identification of various plant constituent from the sample. Among the various chemical compounds found alkaloids, flavonoids and phytosterols exhibited more prominent test. The results of phytochemical analysis of different extracts of *H. suaveolens* showed the richness of this plant in terms of phytoconstituents and this can be use for further research on medicinal potential of this wild plant.

Keywords: *Hyptis suaveolens*, medicinal plant, solvent extract, phytochemicals

INTRODUCTION:

Phytochemistry essentially deals with the enormous different types of organic substances that are accumulated by plants as byproducts of metabolic reactions. These are natural compounds and generally called as secondary metabolites. Natural products are the source of synthetic as well as traditional herbal medicine and are still in use in the primary health care system (Kirtikar and Basu 1975). The plant *Hyptis suaveolens* (L.) poit commonly known as **wilayati tulsi** and **Bhutganja** in local language**.** It belonging to the family Lamiaceae and is an ethnobotanically important medicinal plant. The plant has been considered as an obnoxious weed, distributed throughout the tropics and subtropics almost all parts of this plant are being used in traditional medicine to treat various diseases. The leaves of *H. suaveolens* (L.) have been utilized as a stimulant, carminative, sudorific, galactogogue and as a cure for parasitic cutaneous diseases (Siddiqui et al. 2009). Crude leaf extract is also used as a relief to colic and stomachache. Leave and twigs are considered to be antispasmodic and used in antirheumatic an antisuporific baths and anti-inflammatory, antiferility agents (Koche et al. 2010 and Ladan et al. 2011).

MATERIALS AND METHODS:

Extraction of plant material:

Plant material was first dried under shed and then powdered. The air dried powder was extracted in Soxhlet's assembly with acetone, petroleum ether, ethanol and distilled water. The extract obtained in each solvent was concentrated, distilling off the solvent and evaporate to dryness. Extract obtained in each solvent concentrated, solidified and weighed.

Phytochemical Tests:

The solvent free extract obtained as above was then subjected to qualitative test for the identification of various plant constituent from the sample. All the tests used for the analysis were taken from standard books of phytochemistry (Harborne. 1998).

Test for Alkaloids:
The small portion of solvent free chloroform, alcoholic and water extract was transferred in three test tubes and was stirred with a few drops of dilute hydrochloric acid and filtered. The filtrate was tested carefully with alkaloid reagents, such as Mayer's reagent (Cream ppt), Dragendorff's reagent (Orange-brown ppt), Hager's reagent (Yellow ppt) and Wagner's reagent (Reddish-brown ppt).

Test for Carbohydrates and Glycosides:
A small quantity of alcoholic and aqueous extracts was dissolved separately in 5 ml of distilled water and filtered. The filtrate was subjected to Molisch's test for detection of carbohydrates.
Small portion of the same extract was hydrolyzed with dilute hydrochloric acid for few hours in water bath and was subjected to Libermann-Burchard's test for detection of glycosides.

Test for Phytosterols:
A small quantity of ether, ethanol and water extracts was tested for presence of sterols with Libermann-Burchard's reagent.

Test for Fixed Oils:
A small quantity of petroleum ether and benzene extracts was passed separately between two filter papers. Oil stains on the paper indicated the presence of fixed oil.

Test for Saponins:
About 1 ml of alcoholic and aqueous extracts was diluted separately with distilled water to 20 ml and shaken in graduated cylinder for 15 minutes. One cm layer of foam indicated presence of saponins.

Test for Phenolic Compounds and Tannins:
Small quantity of alcoholic and aqueous extracts in water was tested for the presence of phenolic compounds and tannins with dilute ferric chloride solution (5%) and 10% lead acetate solution.

Test for Proteins:
Small quantity of alcoholic and aqueous extract was dissolved in a few ml of water and subjected to Biuret test.

Test for Gums and Mucilage:
About 10 ml of aqueous extract was added to 25 ml of absolute alcohol with constant stirring. The precipitate was dried in air. It was examined for its swelling property.

Test for Volatile Oils:
Volatile oil was detected in the ether extract.

Aromatic smell in the evaporated ether extract indicated presence of volatile oils.

RESULTS AND DISCUSSION:
Preliminary phytochemical screening has been done of leave of *H. suaveolens* (L.) and the results are incorporated in table 1 and table 2. Result in table 1 illustrate the texture, color of extract in different solvents. Preliminary phytochemical screening revealed the presence of different types of secondary metabolites such as alkaloids, glycosides, phytosterols, saponins, phenolic compounds and tannins, proteins and volatile oils while extract have given negative test for fixed oils, gums and mucilage. The test for carbohydrates, glycosides, sterols, flavonoids and alkaloids is positive in *Hyptis suaveolens.* Similar results were reported earlier in many medicinal plants (Ladan et al.2009; Shenoy C.et al.2009; Siddiqui S. et al.2009; Mbatchou et al.2010; Koche et. al. 2010; Pachkore et al.2011; Syed Imran et.al. 2012). The present study indicates that the plant is having significant medicinal potential and is rich in phytochemical composition. This study can further be use for detail phytochemical and pharmacological analysis of this wild medicinal plant from India.

Table-1: Physical analysis of solvent extracts of *H. suaveolens*.

Extracts	Observations
Acetone	Sticky and yellow green
Ethanol	Sticky and dark green
Distilled water	Sticky and dark green

Table-2: Preliminary phytochemical analysis of H. Suaveolens areal parts.

Phytochemical test for Solvent extracts

	Distilled water	Ethanol	Acetone
Alkaloids			
Mayer's	+	+	-
Dragendroff's	++	+	-
Wagner's	++	+	-
Phenolics and Tannins			
Lead acetate	++	++	+
Ferric chloride	++	++	+
Glycosides	+	+	-
Phytosterol	-	+	++
Saponins	+	-	-
Gums & Resins	+	-	-
Fixed oil	-	-	-
Volatile oil	-	-	++
Carbohydrate	+	+	-
Proteins	+	+	-

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PRELIMINARY PHYTOCHEMICAL ANALYSIS OF *ANISOMELES INDICA* (L.) O. KTZE

M. J. NAISE AND D. G. BHADANGE
Shri Shivaji College, Akola

Abstract:

Anisomeles indica (L) O. Ktze belongs to family lamiaceae. It is found throughout the tropical and sub-tropical region of India. It is annual, aromatic, undershrub, most common in Melghat forming large patches along the river banks. The plant is used as folk medicine, predominantly in the treatment of intestinal disorder and intermittent fever. The herb showed hypothermic activity when burnt and also acts as a mosquito repellant. The essential oil present in herb is useful in uterine infections.

The study of preliminary phytochemical in aqueous, methanolic and acetone extract of this plant showed the presence of various secondary metabolites like alkaloids, tannins, sterol, terpenoids, quinon, flavonoids and glycosides.

Key words: Preliminary phytochemistry, *Anisomeles indica.*

INTRODUCTION

Plants are used medicinally in different countries and are a source of many potent and powerful drugs (Shrivastava et. al., 1996). A wide range of medicinal plants and plant parts are being used to extract raw or crude drugs which possesses varied medicinal properties. The different parts used includes root, stem, flower, fruits, twigs and modified plant organs. Some of these drugs are collected in smaller quantity by the local community peoples and tribals to treat various aliments, While many others collect raw/ crude drugs in the form of plant parts in large quantities and traded in market as a raw material for many herbal industries (Chopara et al.,1956 and Uniyal et al., 2006).

The selected plant i.e. ***Anisomeles indica*** is used by tribals mostly for its stem and leaves, as antipyretic, analgesic and anti-inflammatory activity. It is also act as natural herbicide in wheat fields (Dharmasiri et. al., 2000 and 2003). In China and India, *Anisomeles indica* is used to treat gastric dysfunction, inflammatory disorders and hypertention (Yu-Yi Hou et. al., 2009).
Therefore the authors have attempted to study the preliminary phytochemistry of this medicinal plant.

Material and methods:

The plant collected during the month of December 2012, from Chikhaldara forest, Melghat region of Amravati district (MS). The collected plant was identified taxonomically by local taxonomist and using flora of Marathwada (Naik, 1998). The leaves were washed thoroughly 2-3 times with Distilled water. Leaf material was then air dried under shade. After complete shade drying the plant material was grinded in mixer and powder was kept in air tied bags until further experimentation.

Extraction:

The aqueous extract, methanolic extract and acetone extract of powdered sample were prepared by soaking 5gm of powder in 100 ml selected solvents for 12 hours. The extracts were then filtered using Whatman filter paper. Preliminary phytochemical analysis of aqueous extract, methanol extract and acetone extract of each

plant powder sample were carried out by (Harborne, 1973) and (Koche et al., 2010).

Result and Discussion:

The chemical constituents of *A. indica* were tested in shade dried leaves and stem. The results indicate that the leaves and stem of the plants revealed the presence of alkaloids, tannins, terpenoids, glycosides and phytosterols. Out of three solvents used for extraction, methanol was found most suitable which extracts more phytoconstituents and showed positive tests for all major phytochemicals tested (table-1). Apart from the secondary metabolites, some primary metabolites like proteins and carbohydrates was also tested for their availability in the extracts. It was observed that both proteins and carbohydrates of the plant can be easily extracted in all three solvents used, showing positive results (table-1).

Each of these secondary metabolites possesses specific properties and physiological activities (Sofowora 1973). There are many reports indicating the preliminary phytochemicals in various medicinal plants. Some of important reports includes that of Uniyal et al., 2006; Krishnaiah et. al., 2009; Koche et al., 2010; Shirsat et. al., 2012. Our results are in analogy with the above reports. The availability of the major phytocompounds like alkaloids, phenolics, flavonoids, tannins and steroids in various extracts of *A. indica* can be correlated with the medicinal potential of the plant. It can be concluded that, this plant could be further use for making specific drugs provided it could be exploited in detail, phytochemically and pharmacologically.

Table-1: Preliminary phytochemical analysis of *Anisomeles indica* leaves and stem Note: '+`=Present '-`=Absent

Sr. No.	Chemical Test for Plant extract						
		Methanol	Aqueous	Acetone			
		Leaf	Stem	Leaf	Stem	Leaf	Stem
1	Alkaloid	+	+	+	+	+	+
2	Flavonoid	+	+	-	-	+	+
3	Steroid	+	-	+	+	+	-
4	Tannin	+	+	+	-	+	+
5	Terpenoid	+	-	+	+	+	-
6	Quinon	+	+	-	-	-	-
7	Glycosides	+	-	+	-	+	+
8	Phenol	+	+	+	+	+	+
9	Carbohydrate	+	+	+	+	+	+
10	Protein	+	+	+	+	+	+

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Morphotaxonomical and Anatomical Study of Colebrookea oppositifolia Smith

Rupali Shirsat and Subhash Suradkar
Shri Shivaji College, Akola

Abstract:

Colebrookea oppositifolia Smith, is one of the wild lamiaceae member having great ethmedicinal potential. In the present investigation, an attempt was made to describe the morphological and anatomical features of this neglected medicinal plant. It was observed that the plant bear peculiar type of verticilaster inflorescence with panicled spike. The unique V-shaped vascular bundles in petiole and leaf midrib is prominent feature of this plant.

Key words: *Colebrookea oppositifolia,* morphology, anatomy.

Introduction:

The selected plant, *Colebrookea oppositifolia* Sm., is one of the most important plant of the family Lamiaceae. Its vernacular name in Marathi is ***Bhaman***. The plant has immense medicinal potential and generally used to cure epilepsy, urinary problems and hepatitis. It is also used as antimicrobial agent (Koche et al., 2010 and Shirsat et al. 2012). Event though, it has medicinal potential, it remained neglected till recent days. In the present study, the plant was investigated for its morphological anatomical features.

Material and Methods:

The plant was collected from Chikhaldara forest ranges, Amravati Division (MS) India. The plant was identified taxonomically using floras (Naik, 1998 and Kartikeyan and Singh, 2001). A specimen copy of the plant is deposited in herbarium of Department of Botany, Shri Shivaji College, Akola. The morphological and external features like trichomes and floral characteristics were observed under microscope. The anatomical analysis, was done after preparing permanent double stained preparations of leaf and petiole.

Observations and Results:

Morphological features:

Colebrookea oppositifolia Sm., is one of the most important plant of the family Lamiaceae. Its vernacular name in Marathi is ***Bhaman***. It is a much branched, white-tomentose shrub; branches sub-quadrangular, grooved (Fig. 1). Leaves were 4.5-14 × 1.0-3.5 cm in size, ternately whorled, elliptic-lanceolate, acute or shortly acuminate at apex, acute at base, crenulate, softly pubescent; petiole pubescent (fig. 1). Flowers white, nearly 5-10 cm long panicled spikes; verticils 2-6 mm apart (fig. 1). Calyx deeply 5-partite, hairy. Corolla-tube short; lobes 4, subequal. Stamens 4; filaments in functional male flowers exerted; included in functional female flowers. Pistillode rudimentary in functional male flowers; anthers uniform. Ovary small, 2-loculed, seemingly 4- partite; ovule with 5 hairy subulate lobes (Figs. 1). *C. oppositifolia* Sm. is distributed in the upper and lower Ghats of India, up to an altitude of 1200 meters collected from the hilly tracks of Chikhaldara reserve forest area (MS) India. One unique feature of this plant is it test bitter and is without odour unlike to its other family members.

Anatomical features:

Transverse section of petiole was circular in outline, shows an outer epidermis

covered with trichomes emerging all around, a large ground tissue and V-shaped vascular bundle (Figs. 2). Epidermis was single layered, covered by a thin cuticle, and made up of rectangular cells. Next to the epidermis lies multilayered angular collenchyma, cells measuring 5.6-8.2-10.5 × 1.8-2.6-3.4 ìm. Trichomes of both glandular and non-glandular types were found emerging from the epidermis; glandular trichomes were sessile with a globose head, containing cell content; non-glandular trichomes were long, uniseriate, multicellular (Figs. 2 C). Ground tissue was made up of parenchyma cells with intercellular spaces, measuring 22 × 18 ìm; some cells contain druses type of calcium oxalate crystals, some rectangular type of crystals while a few others contain acicular raphides; a few cells proximate to vascular bundle contain cell content. Vascular bundles are characteristic; two large vascular bundles are crescent shaped which encloses several smaller vascular bundles arranged in a y-shape. Vascular bundles are conjoint, collateral, surrounded by sclerenchymatous bundle sheath; xylem cells measure 13× 10 ìm and phloem cells measure 5 × 3 ìm (Figs. 2 A & B).

Transverse section of midrib region shows similar structure to that of petiole region (Fig. 2-D). Transverse section of lamina shows single layer of upper epidermis covered by a cuticle and a lower epidermis; upper epidermis cells measure 5 × 3 ìm while lower epidermis cells measure 8 × 5 ìm. Trichomes of both glandular and non-glandular types were found on upper and lower epidermis. Mesophyll differentiated into palisade parenchyma and spongy parenchyma. Palisade parenchyma consists of 1 to 2-layers of elongated, compactly arranged cells measuring 12 × 8 ìm. Spongy parenchyma consists of 4 to 6 layers of loosely arranged cells measuring 6 × 4 ìm. Vascular bundles were surrounded by sclerenchymatous bundle sheath; sclerenchyma cells measure approximately 6 × 4 ìm (Fig. 2-E).

Not much work was reported in relation to morphotaxonomy and anatomy of this plants. Only one report came in recent years indicating pharmacognostic characters of *C. oppositifolia* (Madhavan et al. 2011). Our results of anatomical feature are in analogy with that. The present work clarify the taxonomic and anatomical characters of *C. oppositifolia* and hence useful for researchers working the applied aspects of the plant.

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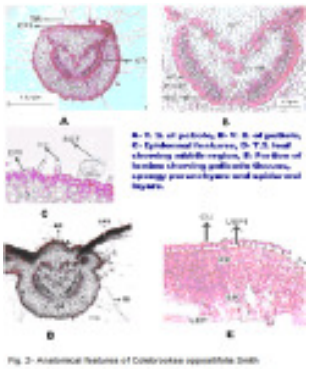
Fig. 1: A- Flowering twig, B- Abaxial surface of leaf, C: Adaxial surface of leaf



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Chemical composition and antibacterial activity of the essential oil of *Zingiber Officinale* Rosc. growing in Akola region

S.M. Sharma and D.G. Bhadange
Shri Shivaji College, Akola

ABSTRACT

Zingiber officinale Rosc. is an aromatic member of the family Zingiberaceae. It is known world wide, as a culinary herb, condiment spice, home remedy and medicinal agent. Many literature also reported antibacterial, anti-nause, anti-ulcer, anti-inflammatory and anti-arthritic properties of this plant. To evaluate its medicinal potential, it is require to investigate its chemical composition. The present attempt deals with the study of chemical composition of rhizome essential oil of *Zingiber officinale* Rosc. and its antimicrobial activity. Rhizome essential oil was obtained by hydro distillation and analyzed by gas chromatography-mass spectrometry (GC-MS). About 33 different component were identified which was characterized by a high percentage of zingiberene. The antimicrobial activity of the essential oil was also evaluated against Gram positive (*Staphylococcus aureus)* and Gram negative (*Escherichia coli, Salmonella typhimurium*) bacteria *by* disc diffusion method. Essential oil was found to be effective against all the microbes tested.

Key words: *Zingiber officinale* Rosc, Hydrodistillation, Essential Oil, GC-MS Analysis.

INTRODUCTION:

Plants are potent source of phytomedicine since times immemorial. It is estimated that 70 to 80% of the people worldwide rely chiefly on traditional health care system and largely on herbal medicines (Ramya *et al*., 2012). In recent years, demand of plant derived products are increasing due to its safety nature and increasing side effect of synthetic compound (Choudhary *et al*., 2011). Plants contain a broad range of bioactive compounds such as lipids, phytochemicals, pharmaceutics, flavors, fragrances and pigments. Plant extracts are widely used in the food, pharmaceutical and cosmetics industries. Plant based natural constituents can be derived from different parts of the plant like bark, leaves, flowers, roots, fruits, seeds, etc i.e. any part of the plant may contain active components (Wang *et al*.,2006 and Tiwari *et al*., 2011).

The rhizome of *Zingiber officinale* Rosc., is one of the most widely used species of the ginger family (Zingiberaceae) and is a common condiment for various foods and beverages. Ginger is a perennial herb which grows from underground rhizomes. The rhizome has thick lobes coloured from tan to white. Fresh ginger contains “gingerols” and when exposed to air and heat changes to “shogaols”. The nutritional content of ginger includes protein, lipids, carbohydrates, minerals and vitamins plus trace nutrients. Ginger also has capsaicin, curcumin and limonene as well as proteolytic enzymes. It has been use as indigenous medicinal system since 2,500 years in China and India for conditions such as headaches, nausea, rheumatism, and colds. Ginger is native to Southern Asia, but

it is now extensively cultivated in Jamaica, Nigeria, China, India, Fiji, Sierra Leone and Australia (Belewu *et al*., 2009 and Bhargava *et al*., 2012).

The present work deals with characterization of chemical constituent of rhizome essential oil of *Zingiber officinale* with the help of GC-MS data and screening of its antibacterial activity which provide medicinal property to it.

Material and method:

Collection of Plant Material

The plant material was collected from Dr. P. D. K. V. Agricultural University Campus, Akola. The plant was identified by local taxonomist and a specimen copy was deposited in Department of Botany, Shri Shivaji College, and Akola (MS) India. It was cleaned and air dried. Rhizome of *Zingiber officinale* was crushed in to powder form. Then, it was used for extraction of essential oil by hydrodistillation.

Hydro-Distillation:

In this method the plant material is fully dipped in the water. Hydro distillation is made with the Clevenger type apparatus. Hydro distillation is a method that implies the plant material being boiled in water. The volatile material is carried away in the steam through some tubes and then is cool in Condenser. The volatile oil is then removed from the top of the hydrosol (Atofani *et al*., 2010).

Hydrodistillation method is used to extract rhizome essential oil of *Zingiber officinale* Rosc. by using Clevenger type apparatus. 25 grams of dried and ground rhizome powder was placed into 500 mL round-bottom flask . 250 ml of distilled water was added in the flask and the contents of flask were boiled on heating mantel for 3-4 hour. Steam with essential oil passes through condenser and collected in receiving flask. The oil was separated from water body and dried over drying agent such as anhydrous sodium sulphate or magnesium sulfate. Then, essential oil was collected in brown coloured bottle and stored in refrigerator at 4 ºC, until further analysis.

Analysis using GC/MS:

GC-MS analysis of the oils was carried out on a Hewlett-Packard GC-MS system, Model 6859, with quadruple selective detector, 7683B serious auto injector and HP-5MS capillary column (30 m x 0.25 mm, film thickness 0.25 ìm). The carrier gas was Helium. The injector and source temperatures were 220ÚC. Mass spectra were recorded in the scan mode at 70 eV. The mass transfer line temperature was 290ÚC. The identification of compound was done on the basis of retention time, retention indices, MS Library search (NIST) .The relative amounts of individual components were calculated based on GC peak areas with using correction factors.

Antibacterial assay:

The antibacterial activity of the essential oils of *Z. officinale* was evaluated against Gram positive (*Staphylococcus aureus)* and Gram negative (*Escherichia coli, Salmonella typhimuriu*) bacteria *by* disc diffusion technique (NCCLS, 1999). The test was performed in sterile Petri-dishes) containing solid and sterile Mueller-Hinton agar (MHA) medium for the growth of bacteria. The pathogenic bacterial inoculums (10^6 CFU/ml) was spread over the Muller Hinton agar plate. 1 µl of the essential oil was pipetted on to 6.0 mm filter paper discs which were carefully transferred on to the surface inoculated the media. Streptomycin (10 mg/disc) was used as positive control.

Statistical analysis-*Zingiber officinale* samples were analyzed individually in triplicate for its chemical composition. Values are reported as mean± SD and data were analyzed by analysis of variance (ANOVA) by using techniques described by Prasad *et al*., (2011) at 5% significance level.

RESUT AND DISCUSSION:

Table :1- GC-MS Analysis of rhizome essential oil Composition Of *Zingiber officinale*

Sr. no.	Compounds	Retention Index(RI)	Content (%)	Identification mode
1	á –Pienene	939	0.45±0.05	RI,MS
2	Camphene	951	4.25±0.55	RI,MS
3	â – Pienene	976	0.30±0.02	RI,MS
4	Myrcene	990	0.63±0.02	RI,RT,MS
5	á-Phellandrene	1007	0.28±0.00	RI,RT,MS
6	â-Phellandrene	1032	3.15±0.65	RI,MS
7	Cineole	1034	0.62±0.03	RI,MS
8	Linalol	1100	0.35±0.01	RI,RT,MS
9	Borneol	1176	0.25±0.00	RI,RT,MS
10	Menth-8-ol	1198	0.22±0.03	RI,RT,MS
11	Caprinldehyde	1209	0.10±0.00	RI,MS
12	Citronellol	1232	0.15±0.00	RI,MS
13	Z-Citral	1242	0.30±0.10	RI,MS
14	Nerol	1255	0.12±0.00	RI,MS
15	Bornyl acetate	1285	0.10±0.00	RI,MS
16	á- Elemene	1337	0.15±0.00	RI,MS
17	Citronellol	1352	0.11±0.00	RI,MS
18	Copaene	1379	0.65±0.05	RI,MS
19	Geraniol acetate	1381	0.30±0.05	RI,MS
20	?-Elemene	1433	0.28±0.02	RI,MS
21	Aromadendrene	1465	0.60±0.04	RI,RT,MS
22	Chmigrene	1478	0.20±0.00	RI,MS
23	Curcumene	1487	5.20±1.05	RI,RT,MS
24	â-Eudesmene	1494	0.10±0.00	RI,MS
25	Zingiberene	1507	52.75±1.85	RI,RT,MS
26	Farnesene	1514	8.12±0.82	RI,RT,MS
27	â-Bisabolene	1517	5.27±0.20	RI,RT,MS
28	â- sesquiphellandrene	1526	0.20±0.00	RI,MS
29	Cadinene	1534	12.63±1.02	RI,MS
30	á-Selenene	1566	0.44±0.06	RI,MS
31	â-Cadin-4en-10ol- ol	1627	0.18±0.00	RI,MS
32	Caryophyllene	1638	0.22±0.03	RI,RT,MS
33	Trans-á-Bergamotene	1692	0.18±0.00	RI,MS
Total		98.74		

RI: retention index, RT: Retention time, MS: comparison of mass spectra with NIST, mean ± SD of three samples of *Zingiber officinale* Rosc**.** Analyzed individually in triplicate.

Table 2. Antibacterial activity of rhizome essential oil of *Zingber officinale* Rosc.

Bacterial strain	*Zingiber officinale* Roscoe ZOI (mm)	Streptomycin (+ve) ZOI (mm)
Escherichia coli	14	15
Staphylococcus aureus	19	18
Salmonella typhimurium	17	16

ZOI (mm) : zone of inhibition in mm

Qualitative and quantitative analysis of volatile oil of *Zingber officinale* was performed by GC-MS. The percentage analysis of composition of essential oil of *Zingiber officinale* is shown in table -1.

Thirty seven compounds were detected from essential oil of *Zingiber officinale*. The major part of this oil was shared Zingiberene (52.88%), Farnesene (8.50%), Curcumene (4.86%), â-Bisabolene (4.58%) and â-Phellandrene (2.92%). The major compound was identified as zingiberene which was in accordance with Sasidharan *et al.*(2010) anf Aziz *et al*., (2012).

The essential oils of *Zingber officinale* was evaluated against Gram positive (*Staphylococcus aureus)* and Gram negative (*Escherichia coli, Salmonella typhimurium)* bacteria. The antibacterial activity are summarized in Table 2. The extracted oil was found to be active against all the bacterial strains tested. The maximum zone of inhibition was found in *Staphylococcus aureus* followed by *Salmonella typhimurium, Escherichia coli.*

Conclusion -

Essential oil extracted from rhizome of *Zingiber officinale* with zingiberene, Cadinene, Farnesene, Curcumene, â-Bisabolene, Camphene and â-Phellandrene as major compounds. It had high effect on the growth inhibition of *Escherichia coli, Salmonella typhimurium* and *Staphylococcus aureus.* It is well known to us that the utilization of ginger for curing different diseases in various system of medicine. Therefore, it can be concluded on the basis of chemical characterization and antimicrobial activity of ginger essential oil that it could be used as natural antimicrobial agent against different pathogenic bacteria and in formulation of new drug from natural source. This activity of ginger may be correlated with essential oil composition of this species.

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Cloud Computing towards Green Libraries

Dr. Ravindra D. Sarode*
Assistant Professor, Deptt. of LIS, SGB Amravati University, Amravati
Mr. Ashish S. Raut**
Librarian, Shri Shivaji College of Arts, Commerce and Science, Akola

Introduction

The term "cloud computing" refers to a new generation of computing that uses distant servers for data storage and management, rather than using software on personal computers or saving to local servers that require a team of IT technicians to maintain and repair.

The applications of cloud computing for the libraries change the nature of library. Now the library server became strain less due to cloud and most of the information can put on the cloud. It is the transformation of digital libraries towards the 'Green Libraries'. It is an effect due to the 'Green computing', which is the requirement of 21st century.

1. What is Cloud Computing?

Cloud computing is comparable to grid computing, a type of computing where unused processing cycles of all computers in a network are harnesses to solve problems too intensive for any stand-alone machine. In simple terms cloud refers to:

Cloud computing can be understood as a way to use off-site computer processing power to replace content creation and servers that were traditionally hosted onsite. In layman's terms this means "using Web services for our computing needs" (Kroski, 2009). Cloud computer allows content creation to be made "when data and software applications reside on and are drawn from the network rather than locally on any one workstation". By utilizing online applications, users can create and save their files online, share content, work collaboratively with others or create entire services that can all be accessed online without need of having the programs on their own computer.

These online services can reduce the need for expensive software, hardware, and even advanced technical knowledge from library staff since cloud computing services are often streamlined to be very user-friendly. As well, "the focus shifts away from which devices effectively store data and able to run applications to which devices can provide the easiest access to data and applications which are stored at various places on the Internet".

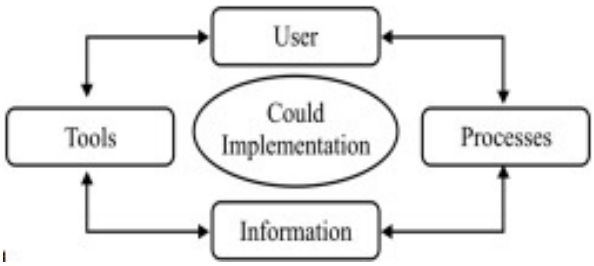
Figure-1: Cloud Service Management Implementation Framework
Source: (Padhy & Mahapatra)

1.1 Definitions of Cloud Computing

The concept of cloud computing is still evolving across the information technology, industry and academia. The some definitions of cloud computing are-

1.1.1 The Gartner Group:

The Gartner group (2012) defines cloud computing as, "a style of computing in which massively scalable and elastic IT-enabled capabilities are delivered as a service to external customers using Internet technologies".



1.1.2 Peter Mell and Timothy Grance:

Peter and Timothy (2011:2) define in their report of National Institute of Standards and Technology, Cloud computing as "a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources e.g., networks, servers, storage, applications, and services that can be rapidly provisioned and released with minimal management effort or service provider interaction".

1.2 Types of Cloud Computing

There are mainly four types of cloud computing such as infrastructure, platform, applications and services, the examples of each can be:

Type	What it is	Examples
Infrastructure	Buying Space/Time on External Servers	Amazon A3 Bungee
Platforms	An Existing software platform to build your own applications on	Facebook
Applications	Software applications accessed with a web browser	Google Docs Saleforce.com
Services	Ready to use services accessed with a web browser	ADP

illustrated that many cloud services actually incorporate two or more of these types. For example, Google docs provide infrastructure as well as applications. It should also be noted that many cloud applications and services are actually using another providers' cloud infrastructure to run their service.

1. Characteristics of the Cloud

Cloud computing is characterized by its basically flexible nature, which stands in stark contrast to the rigidity of systems tied to on-site, physical IT infrastructure. This nature of flexibility is the crucial source of many of the potential strengths and weaknesses of Cloud computing. From the perspective of the Cloud's architecture, flexibility can be seen in three main areas such as the potentially dispersed and far-flung geo-location of data servers and storage enabled by virtualization and remote access; the rapid elasticity and scalability enabled by the on-demand nature of Cloud computing resources; and the broad resource pooling in large-scale data centers, which allows for greater economies of scale and more efficient targeting of resources. So while the technological basis for Cloud computing is not new, the capability of the technology is. The features of Cloud computing are new dimensions and opportunities of an existing technology. The following are the characteristics of cloud.

Table-2: Characteristics of the Cloud

Source: KPMG India Cloud Publication (Indian Cloud Revolution)

1. Cloud computing and Challenges to Educational Sector

The Educational sector is one of the cornerstones of socioeconomic development. The Primary challenges associated with the educational sector in India are:

- Pour Quality of Education
- Reach of education to remote corners of the country
- Increasing cost of education
- Low engagement of students

Figure-2: Challenges to Educational Sector **(Source:** KPMG in India Analysis/ Indian Cloud Revolution)

The Cloud can transform the Educational sector by providing tools such as Learning Management Systems, Online portals, Virtual remote classrooms and Computer based tests. The benefits of using clouds computing in the educational sectors are standardized content, environment of collaboration, new modes for providing education, administrative efficiency, and universal access to educational information. (Accenture, 2010)

4. Architectural and Technical Requirements

Cloud computing is based on the simple concept in which systems and data can be stored and accessed over the network using large, scalable servers to handle the heavy lifting. Cloud computing uses virtualization to separate software from hardware, provides centralized security along with high-speed internal communications, and serves advanced data management needs where client computing is impractical (Goldner, 2010).

There is the possibility of downfalls and risk with cloud computing. For example, network connectivity is not a guarantee, and we cannot always rely on being able to connect to our data. Likewise, agreeing to a cloud service places a lot of trust in a company or service with which you may feel little affiliation.

Finally, for some patrons and institutions, engaging in social activities in the cloud is common with privacy concerns. Add to this the need for a new set of skills to implement and manage complex cloud services, and the whole thing may seem to be a bit too much. At its core, however, cloud computing allows libraries to re-examine their resource allocations.

4.1 Technical Requirement

The following things are important while uploading the library data on the cloud server and one should take proper care to decline the risk level and downfall situation.

- Clear architecture, separated services, e.g.: identity management, payment services, authentication and authorization
- Well defined interface (Open)
- Open standards
- Secure channels
- Network access and bandwidth

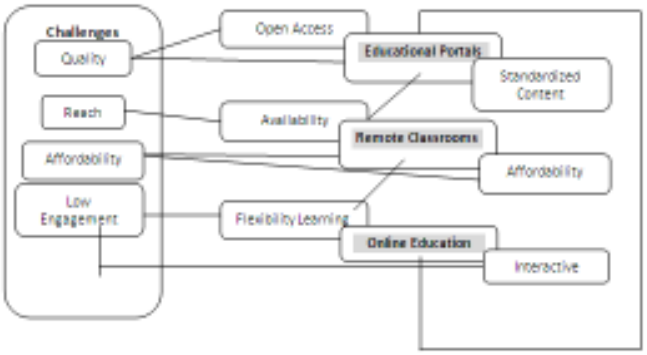
4.2 Top 10 Cloud Computing Providers

According to the searchcloudcomputing.techtarget.com, the list of World Top 10 cloud computing providers of year 2012 is, VMWare, Microsoft, Bluelock, Citrix, Joyent Inc., Verizon/Terremark, Salesforce.com, CenturyLink, Rackspace Inc., and Amazon Web Services (AWS).

5. Application of Cloud in the Libraries

Libraries will want to consider what types of information or processes they want to trust to the cloud. The responsibility of libraries to preserve information at the Top Tech Trends panel, making the point that outsourcing its preservation in effect relinquishes that obligation.

Libraries will need to consider not only this type of ethical quandary, but also practical ones such as the privacy of sensitive information such as patron records, and concerns about records retention requirements. But it needn't be an all-or-nothing decision as libraries may choose to continue to host some of their own systems while using the cloud for less sensitive processes such as hosting library websites, backing up media collections, or storing and accessing bibliographic data. (Goldner, 2010)



Some libraries have already begun to adopt cloud services to alleviate their IT departments and increase efficiency. In addition to these libraries, the Library of Congress has entered into a partnership with Duracloud for a one year pilot program testing out cloud storage capabilities, and OCLC has announced a new Web-scale, cooperative library management service.

6. Advantages and Disadvantages

Like any other technology, cloud computing do also have its advantages and disadvantages, which needs to be taken into consideration before implementing this new technology.

6.1 Advantages

The main advantage for moving to a cloud computing for a library is the ability to both try out new software without having to buy the hardware as well as being able to scale the computing power to meet the demand of users. A library's can be more flexible in raising the amount of cloud computing they require by contacting their vendor instead of physically having to acquire new hardware to meet increased demands. This method will save the library money and staff resources. Some another advantages of cloud computing are-

- Compliant Facilities and Processes
- Cost effective
- Enterprise Grade Services and Management
- Faster Provisioning of Systems and Applications
- Flexible and innovative
- Flexible and resilient in disaster recovery.
- Highly Secured Infrastructure.
- Reduces hardware and maintenance cost
- Round the clock access
- Simplicity of Integration.
- Simplified Cost and Consumption Model

6.2 Disadvantages

Though it is too much useful and save the money and avoid duplication of work, there are few disadvantages/ risks.

- Constant connectivity required
- Dependency
- Failure in compliance
- Quality problems with cloud service provider
- Risk or data loss
- Since all the development and deployment have been done by Cloud service provider, it is very difficult to get good grip on overall system.
- Time and Budget Constraints

7. Green computing and Green Libraries

With the demand for digital information increasing exponentially every year, more and more servers are also needed to sustain the same. Simply put, more servers not only mean more expenditure, it also means more carbon emission. Keeping this in mind, cloud computing may just provide the solution to the libraries which could make them a lot greener.

7.1 Green computing

Green computing is the environmentally responsible use of computers and related resources. Such practices include the implementation of energy-efficient central processing units (CPUs), servers and peripherals as well as reduced resource consumption and proper disposal of electronic waste (e-waste) (Murugesan, 2008). Cloud computing provides a meaningful step towards environmental sustainability such as-

- **Paperless technology.** Computing in a cloud means that you can send out emails instead of physical letters. This comes in handy for fund drives, event invitations and thank you notes. Cloud computing also helps reduce internal paperwork, like memos, announcements and newsletters. Also, you'll no longer have to keep paper files and databases, the cloud can manage all of that.
- **Less servers and computers.** The cloud infrastructure takes care of the majority of the computing. So smaller non-profits can get away with less computers, and larger non-profit won't need to invest in servers. Fewer servers' means less production costs and less electricity used by a non-profit's offices. Although there may be IT services you might want to host in-house, so you should check with your cloud provider to determine your specific needs.
- **Travel reduction.** Library Users utilize library resources at their home place and volunteers can work from home and donors can give from almost anywhere. Non-profit cloud hosting provides remote access to donation services. You can hold online fundraisers, manage the organization from on the road and allow donors to give from a variety of platforms. Donors can use their computer to donate through email and on the non-profits' website. New technologies also allow donors to give from their cell phone and through social networking sites
- **Automated functions.** Cloud computing can automate a number of tasks including sending out reminders, tracking donors and updating databases. It also avoids the duplication of work.
- **Enhanced Connectivity.** From social media to blogs and websites, cloud computing keeps you connected to your library users and spreads awareness of library services. This reduces the need for mailers, signs and advertisements (Curry, Guyon, & Sheridan, 2012)

7.2 Green Libraries

Generally libraries tend to have more servers than needed in order to manage the fluctuating demand for digital information. As a result, server's actual potential is never tested. Servers may sometimes even remain in the idle state and being in the idle state doesn't mean any reduction in the carbon emissions. However, cloud computing can help reduce this over provisioning of resources which will directly result in cutting down the overall number of servers deployed. Servers in the cloud will always have large number of operations to perform since they would be shared among the libraries and which would eventually result in utilizing the server's full potential. (Faiz Abidi & Hasan Jamal Abidi, 2012: 82)

Conclusion

Libraries have the opportunity to improve their services and relevance in today's information society. Cloud computing is one avenue for this move into the future. It can bring several benefits for libraries and give them a different future. In fact libraries cab becomes Green Libraries with the help of Cloud Computing.

No doubt there is risk in cloud to upload valuable data, but it is useful if the proper precautions are to be taken. It is time, money energy and resources saving

opportunity for libraries. The risk factor can be reduced to put other types of library data such as knowledge base data, license data, vendor data, etc. beyond shared bibliographic data. If it is happen then the libraries can really start to take advantage of cloud-computing technology to make libraries more efficient and build large collaborative communities of librarians and library users

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Synthesis of Some Bis (5-Hydroxy-4 (substituted isoxazolinyl) 1-phenoxy)methanes and Bis (5hydroxy-4-substituted pyrazolinyl)- Phenoxy)methanes and their antimicrobial activity.

P. M. Band

College of Engineering & Technology, N. H. No. 6
Babhulgaon Akola - 444 104

ABSTRACT :

Some bis-(5hydroxy4-(5-aryl-3-isoxazolinyl)1-Phonexy) methane and bis (5-hydroxy 4(1-phenyl,5aryl3-pyrazolinyl) methanes were reported by refluxing bis (5-hydroxy 4(3-aryl propane,1,3-dionyl)1 phenoxy) methane with hydroxylaminehydrochloride and phenylhydrazinehydrochloride in pyridine medium. But above title compounds were also synthesized by refluxing bis [(5-hydroxy 4, acetyl)1-phenoxy] methane with aromaticadehyde followed by hydroxylaminehydrochloride and phenylhydzine hydrochloride in alcholic KOH medium respectively .

Bis- (5-hydroxy -4-acetyl -1-phenoxy) methane (I) was prepared by known method The title compounds were synthesized by base catalysed condensation of compound (I) with aromaticaldehyde in presence of hydroxylaminehydrochloride and phynylhydrazinehydrochloride in alcoholic KOH respectively. This is new method of synthesis of which time duration is reduced and the yield is improved.

INTRODUCTION :

Sustituted isoxazoline and pyrozolines are known for their clinical important [2-13]. These compounds are important potential antibacterial and antigungal agents. In the view of this interest in the synthesis of these compounds have been developed considerably present work deal with the synthesis and antimicrbial activity of title compounds.

Bis (5-hydroxyl 4-acetyl) 1-phonoxy) methane was prepared by known method[1]

The title compounds can be synthesized by refluxing bis [(5-hydroxy, 4-acetyl)- 1 phenoxy] methane and aromatic aldehydes with hydroxyl amine hydrochloride and phenylhydrozinehydroxhloride in alcoholic KOH medium.

This is novel and new method for the Synthesis of above compounds. In this method the time interval is reduced and quality and quantity of yield has been improved.

The Compound (II) showed no-colouration with $FeCl_3$ solution due to strongly hydrogen bonded - OH groups , but it was soluble in NaOH giving yellow colouration indicating the presence of phenolic -OH group. The compound (II) showed yellow colouration with conc. H_2SO_4 indicating isoxazoline nucleus not having –COCH=CH- grouping methylenedioxy test was performed by heating compound (III) with gallic acid and conc. H_2SO_4 when emerald green coloration was observed which indicate the presence of -O-CH_2-O-linkage in the compound (I)

IR spectrum [7.9] of compound (I) clearly indicate presence of band due to -C=N- (1620 cm-1) , C-O-C (1125 cm-1), N-O(970cm-1). The NMR spectrum [7.9] distictily displayed the signal due to Ar-H proton at d6-6.5-800-O-CH-O-proton at d8-5.76,-CHof isoxazoline ring at d8-5.10,>CH_2 of isoxazoline ring at d8-3.36 .

On the basis of above fact compound (IIa) with m.p. 270^{0}C assigned the structure bis (5-hydroxy-4-(5-phenyl-3-isoxazolinyl)1-phenoxy)methane.

Table No. 1 :

Bis(5-hydroxy 4-(5-aryl 3-isoxazolinyl)1-phenoxy)methanes(IIa-d) and Bis (5-hydroxy 4-(1-phenyl-5aryl)3-pyrazolinyl 1-phenoxy) methanes (III a-d)

Compound	Substituted isoxazoline (II) and pyrazoline (III)	Yield (%)	M.p.
IIa	5-phenyl	50%	270^{0}C
IIb	5-methoxy phenyl	58%	278^{0}C
IIc	- (3,4-methylene dioxy phenyl)	56%	288^{0}C
IId	5-furyl	60%	247^{0}C
IIIa	5-phenyl	40%	205^{0}C
IIIb	5-methoxy phenyl	45%	210^{0}C
IIIc	5-(3,4-methylene dioxy phenyl)	42%	202^{0}C
IIId	5-furyl	42%	210^{0}C

C N Analysis found satisfactory

EXPERIMENTAL :

Preparation of bis (5-hydroxy 4(1-phenyl5-aryl 3-isoxazolinyl) 1-phenoxy) methane (II)

Mixture of (.0025 mole) compd I and aromatic aldehyde (.005 mole) was refluxed in alcoholic KOH medium for one hour.

After one hours, Hydroxyl amine hydrochloride was added to reaction mixture and then refluxed for one hour. The reaction mixture was poured in water and acidified with dil HCl. As white crude obtained was crystallized by dilute ethanol.

Preparation of bis (5-droxy 4-(1-phenyl 5-aryl 3-pyrazolinyl)1-phenoxy) methane (III)

Mixture of (.0025 mole) comp (I) and aromatic aldelyde (.005 mole) was refluxed in alcoholic KOH medium for one hour After one hour phenyl hydrazine hydrochloride was added toreaction mixture and then reflxed for one hour. The reaction mixture is pared in water and acidified with dil HCl. The crude product was crystallized from dil ethanol.

ANTIBACTERIAL ACTIVITY:

The compounds were screened for their antibacterial activity against various pathogenic bacteria such as *S. aureus, E. coil , P vulgaris* by using disc-plate method[8]. The medium used through out the experiments was HI media. Amongst compounds tested for antibacterial activity the antibacterial activity of compounds II was found higher than compounds (III) .

ANTIFUNGAL ACTIVITY:

The compounds were also screened for their antifungal activity by disc plate methods [8] against *Fusarium and A niger* Compounds (III) showed moderate activity, while other compounds showed less activity against the above organisms.

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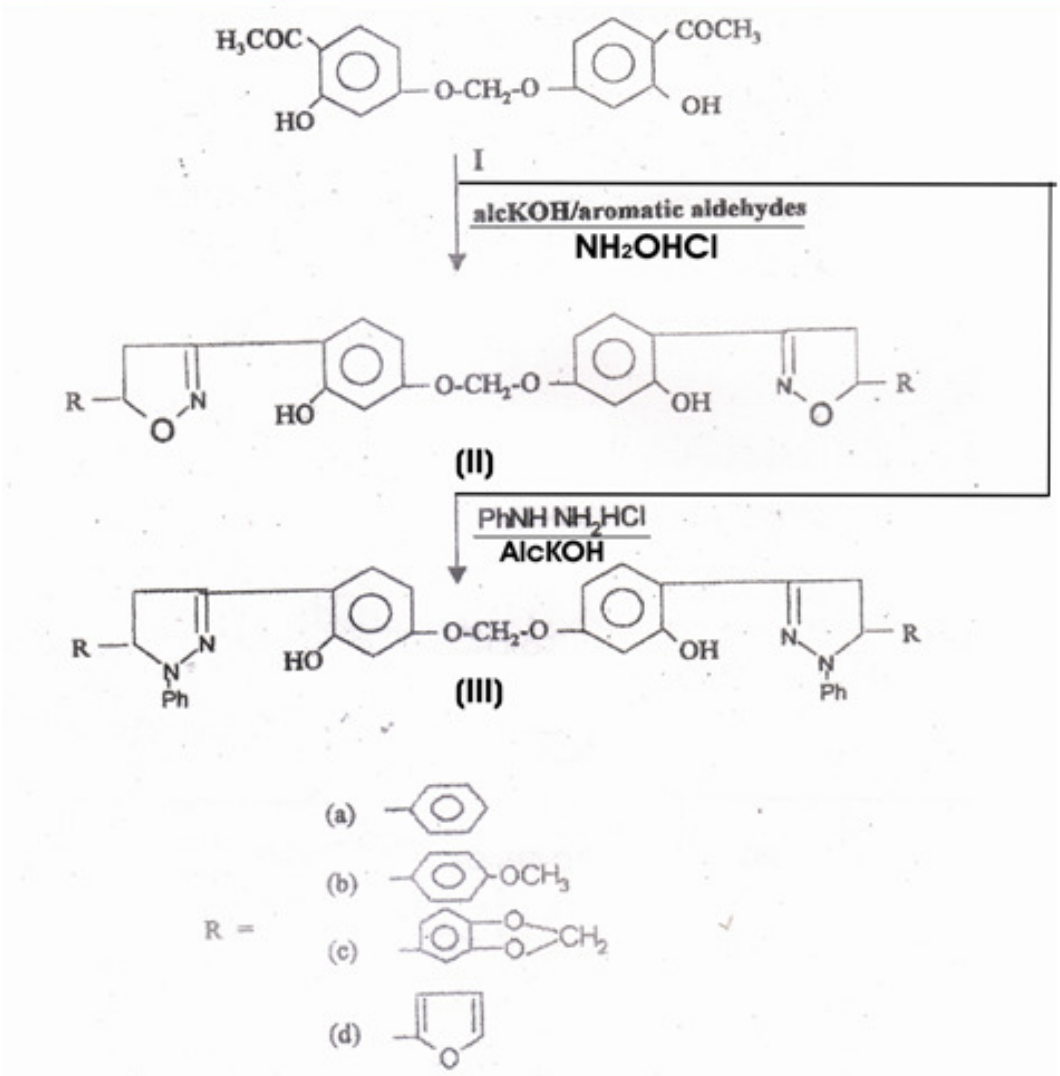

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Synthesis of Some Bis (Substituted) Methanes

P. M. Band

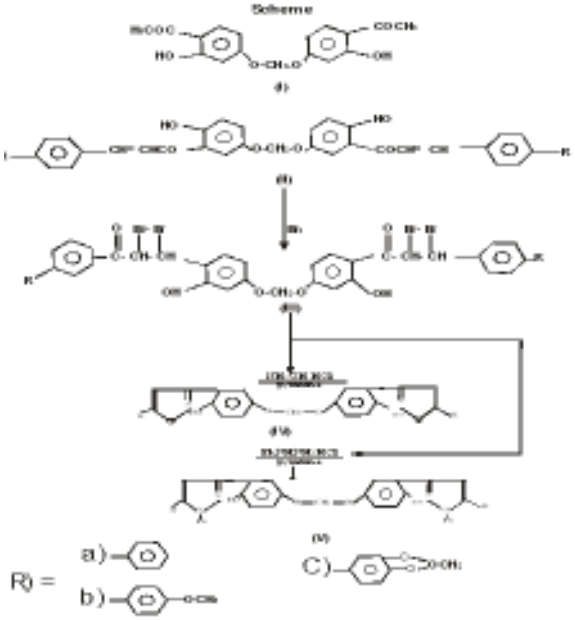
College of Engineering & Technology, N. H. No. 6
Babhulgaon Akola - 444 104

ABSTRACT :

Some bis (5- hydroxyl 4(5aryl3-isoazolyl)- 1 phenoxy)- methanes (IV) and bis (5-hydroxy 4 (1-phenyl, 5 aryl 3-pyrazole) methanes (V) were synthesized by refluxing dibromides of bis (5- hydroxyl – 4 (cinnamoyl)1- phenoxy methan with hydroxyl amine hydrochloride and phenyl hydrazine hydrochloride in pyridins medium. The identies of compounds have been established on the basis of usual chemical transformation of IR,NMR Spectral analysis.

INTRODUCTION :

Substituted isoxazoles and pyrazoles are known for their clinical importance [1-7] These compounds are potential anti bacterial antifungal agents. In the view of this interest in the synthesis of there compounds has been developed considerably. Some bis (5-hydroxy 4(5-aryl 3- isoxazolyl) (1-phenoxy) methane and bis (5- hydroxy 4-(1-phenyl 5-aryl 3- pyrazolyl) (1-phenoxy) methane were synthesized by refluxing bis (5- hydroxyl 4-(dibromocinnamoyl)1-phenoxy) methane with hydroxyl amine hydrochloride and phenyl hydrazine hydrochloride respectively in pyridine medium.



The identities of Compound (IV) have been established on the basis of usual chemical transformation IR,NMR spectral studies. IR spectrum of Compound clearly indicate the presence of band due to v (- C=N-) (1630cm-1) g (- c-o-c-) in Ar - O - CH_2O - (1125 cm-1) g (7 No)(970 cm) The NMR spectral distinctly displayed the signal due to Ar - H - proton at d 6.80- 8.00 ppm and O-CH2 - O proton at d5.76 ppm CH=C proton isoxazole ring at d 6.1 ppm.

On the basis of above facts compound (IV), mp 240^{0}C was assigned the structure bis (5- hydroxyl 4- (5- phenyl 3-isoxazolyl) 1- phenoxy methane (IV).

EXPERIMENTAL :

Preparation of bis (5 hdroxy 4- acetyl)1-phenoxy) methane (I)

Compound (I) was prepared by inter-O-methylation of resacetophenone by known procedure.

Preparation of bis (5- bydroxy 4-cinnamoyl)1-1 phenoxyl methane (II)

Compound (I) (0.01 mole) and aromatic aldehyde (0.02 mole) were dissolved in 40

ml ethanol. The reaction mixture was warmed up to 50^{0}C. Potassium hydroxide (0.4mole) was added to reaction mixture with constant stirring. The reaction mixture was kept over night. The yellow mass obtained was washed with 10% sodium bicarbonate followed by water. The crude product was dissolved in ethanol. A soluble fraction was taken out by fractional crystallization.

Preparation of bis (5- hydroxyl 4-(dibromo-cinnamoyl)1- phenoxy) methane (III)

Compound (II) (0.01 mole) was dissolved in Dioxane (10 ml) and to it bromine (3.2 ml) was added slowly with constant stirring. During this reaction the temperature of reaction mixture was not allowed to increase by cooling. The reaction mixture was kept for 20 minutes. When most of the product was separate out. It was washed with petroleum ether.

Table – No. 1 :

Bis - (substituted) methane and their Melting Point

SR. No.	Compound	Melting Point (^{0}C)
1	Bis (5- hydroxyl 4-cinnamoyl, 1-phenoxy) methane (IIa)	170
2	Bis (5- hydroxyl 4 (1 methoxy cinnamoyl) 1 - phenoxy) methane (IIb)	172
3	Bis (5 hydroxy 4 (3, 4 methylene dioxy - cinnamoyl) 1- phenoxy) methane (IIc)	178
4	Bis (5-Hydroxy 4 (dibromo cinnamoy 1 phenoxy) methane (IIIa)	230
5	Bis (5- hydroxyl 4 (dibromo 1- methoxy cinnamoyl) 1- phenoxy) methane (IIIb)	205
6	Bis - (5- hydroxy 4 (dibromo 3, 4 methylenedioxy - cinnamoyl)1- phenoxy methane (IIIc)	231
7	Bis (5 hydroxy 4 (5-phenyl 3- isoxazolyl) 1- phenoxy) methane (IVa)	240
8	Bis (5- hydroxyl & 4 (1- methoxyphenyl - 3 - isoxazolyl 1- phenoxy) methane) (IVb)	277
9	Bis (5- hydroxy 4- (3- methylenedioxy 3- isoxazolyl)1- phenoxy) methane (IVc)	215
10	Bis (5- hydroxy 4 (1- phenyl , 5 phenyl 3- pyrazolyl)1- phenoxy) methane (Va)	210
11	Bis (5- hydroxyl 4 (1- phenyl 5, 5- methoxy phenyl 3- pyrazoyl)1- phenoxy) methane (Vb)	212
12	Bis (5- hydroxy 4 (1- phenyl 3', 4'- methylenedioxy phenyl 3- pyrazolyl) 1- phenoxy methane) (Vc)	217

Preparation of bis (5- hydroxyl 4 - (5-aryl isoxazolyl) 1- phenoxy) methane (IV)

Compound (III) (0.025 mole) an NH2OH HCl (.005 mole) was refluxed in pyridine medium (10 ml) for 2 hrs. The product was

acidified by acetic acid and washed with water and crystallized from dil ethanol. Same procedure was applied for preparation of bis (5- hydroxyl 4 (1- phenyl 5- aryl 3- pyrazolyl)1- phenoxy) methane (V). Compound (III) (.0025 mole) and Ph $NHNH_2$ HCL (.005 mole) was refluxed in pyridine medium for one hour and reaction mixture were poured in water. The crude was crystallized from dill ethanol.

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Phytoplankton diversity and physicochemical characteristics of Dagadparwa reservoir, Dist. Akola (MS) India

P. P Ade
Shri Shivaji College, Akola

Abstract

The Dagadparwa reservoir is located 25 km away from Akola on Akola-Mangarulpir road, geographic coordinates $02^0$77'E longitude and 20' 43'N latitude. Phytoplankton and physicochemical characters of the Dagdparwa reservoir were investigated from September 2009 to April 2010. Twenty one identified and three unidentified species of chlorophyceae, ten species of Cyanophyceae and 18 species of Basilariophyceae were recorded. Physicochemical characters of the reservoir are also studied, temperature were ranges between 10 ^{0}c to 13.65 ^{0}c, pH 6.06 to 9.24, conductivity 77.85 µmhos/cm to 81.81 µmhos/cm, total dissolved solid 2100 mg/l to 3650 mg/l, Sachi disc depth 65.75cm to 103.75cm, euphotic limit 164.38 cm to 259.38 cm, vertical attenuation coefficient 0.02 to 0.03, dissolved oxygen 8.10mg/l to 9.60 mg/l, free $C0_2$ were absent throughout the period of investigation, phenolphthalein alkalinity 12.50mg/l to 25 mg/l, total alkalinity 165 mg/l to 173.50mg/l, total hardness 222 mg/l to 281.50mg/l, calcium carbonate 97.13mg/l to 114.45mg/l, calcium hardness 38.89 mg/l to 45.83mg/l, magnesium content 30.37 mg/l to 37mg/l , chloride 57.24mg/l 211mg/l, sulphate 0.91mg/l to 1.03mg/l, phosphate 0.34 mg/l to0.42mg/l and nitrate 0.83mg/l to 1.04mg/l were studied in the reservoir water. The major combinations i.e. between water temperature, pH, Total alkalinity and dissolved oxygen with Basilariophyceae, Chlorophyceae and Myxophyceae showed significant positive correlation.

Keywords **:-** *Cyanophyceae, chlorophyceae, basilariophyceae, physicochemical characters, coefficient of correlation of Dagadparwa reservoir.*

Introduction

The changes in the physico-chemical conditions of water can be reflected directly in the biotic community of ecosystem. The study of phytoplankton gives the number of kinds and occurrence of phytoplankton in a habitat. Phytoplankton's are primary producers and act as food source directly or indirectly for fishes, besides acting as indicators of water quality. Dagadparwa reservoir was constructed on Vidrupa river Dagadparwa village. Geographic coordinates $02^0$77'E longitude and 20'43'N latitude. It is a shallow lake of great importance for drinking, irrigation and industrial purposes. Extent of pollution that has occurred due to urbanization, anthropogenic activities; increased human interventions in the water bodies increased use of fertilizers and pesticide. Burgeoning population and water scarcity is affecting the quality of life significantly; India is no exception to this. Providing water in adequate quantity and quality for domestic water supply, irrigation and industrial requirements in all parts of the city is a tremendous challenge from several angles economic, technical management and social.

Phytoplankton is the major primary producers in many aquatic systems and is important food source for other organisms (Sukumaran et al 2008). Phyoplankton not only serve as food for aquatic animals, but also plays an important role in maintaining the biological balance and quality of water (Pandey et al 1998). The productivity of freshwater community that determines the fish growth is regulated by the dynamics of its physico-chemical and biotic environment (Wetzel, 1983). The pH, dissolved oxygen, alkalinity and the dissolved nutrients are important for the phytoplankton production (Bais and Agrawal, 1990). Plankton diversity responds rapidly to changes in the aquatic environment particularly in relation to nutrients.

Extensive studies have been conducted pertaining to qualitative and quantitative ecology of phytoplankton from both west and east coast of India (Subramanyan et al 1989; Jiyalal et al 1990; Ramesh et al 1992; Gouda and Panigraphy, 1996; Neelam et al 1998; Tiwari and Nair 1998; Sarkar et al 2006; Sinha and Islami 2002). Informations on relationship between physico-chemical parameters and water pollution indicators of planktonic fauna is very limited.

Recently, increased importance is given to the plankton productivity in relation to physical and chemical parameters of aquatic system and hence this is taken as the main objective in limnology and productivity of fresh water reservoir is still need in urban and suburban areas for the planning of aquatic cultural practices. Therefore, an extensive study of the phytoplankton diversity and physico-chemical parameters were made for the period of eight months in the selected station of Dagadparwa reservoir.

Material and Methods

The Dagadparwa reservoir is located25 km away on Akola Mangarulpir road of Akola City of Vidhrabha of the state of Maharashtra (geographic coordinates 02^0 77'E longitude and 20' 43'N latitude (Figure 1). It is a shallow lake of great importance for drinking, irrigation and industrial purposes .

Table No. 1 : Morphometric features of Dagadparwa reservoir Dagadparwa .

Sr. No	**Silent features**	**Measurments**
1	Town	**Dagadparwa**
2	Tahasil	**Barsitakli**
3	District	**Akola**
4	Irrigated area	**82.62 sq.km.**
5	Underwater area	**601 hect**
6	Forest area	**1.97 hect**
7	Max. Flood level	**319.70M**
8	Max storage level	**319.45 M**
9	River bottom level	**307M**
10	Reservoir length	**3490M**
11	Max. Ht of reservoir	**14.20M**
12	Benefited village and Tsahalis	**06,01**
13	No. Of doors and size	**04,12*5**

Samples were collected monthly from Sep. - 2009 to Apr.-, 2010 at fixed depth from four selected stations with a Rutner water sampler (2.5 L) separately for physicochemical analysis such as pH, temperature, electrical conductivity , TDS, Sechi disc depth , dissolved oxygen, Free Co_2 , P- alkalinity , T- alkalinity , Total hardness, Calcium carbonate hardness as CaCo3 , Calcium hardness as Ca ++, magnesium content, Chloride, nitrate, orthophosphate Sulphate were analyzed. All above mentioned parameters were analyzed with help of methodology described in (Golterman et al., 1978), (APHA, 2005).

For qualitative and quantitative analysis of phytoplankton, the samples were collected with help of plankton net in the bottle and stored concentrated sample and preserved in acetic Lugol solution and subsequently examined under a Microscope and count the individual number of Chlorophyceae, Myxophyceae and ascilariophyceae by drop count method .

The updated Identification of Freshwater Algae Manual was used predominantly for identification of species with the help of freshwater biology by Edmondson, 1959 and goole.com. Statistical analysis in the form correlation between physicochemical and phytoplankton were observed by ANOVA.

RESULSTS AND DISCUSSION

The fluctuation of phytoplankton diversity and physico-chemical characteristics and correlation of coefficient study of reservoir water are shown in Table 1, 2 and 3. A total of forty two genera and forty eight species of phytoplankton were recorded during the study period. The study area's water inhabits 15 genera and 20 species of chlorophyceae, 10 genera of Myxophyceae and 17 genera and 18 species of basillariophyceae. Monthly quantitative analysis of the phytoplankton recorded revealed that, of all the phytoplankton studied, members belonging to Bacillariophyceae recorded the highest number followed by Cyanophyceae, and Chlorophyceae. Bacillariophyceae emerged as a major algal group among the total phytoplankton Graph 1-4.

Cyanophyceae, they are more efficient in utilizing CO_2 at high pH level and thus their abundance indicates the Eutrophic nature of the studied water bodies. Cyanophyceae considered to be highly adaptive and colonized even in polluted water at higher temperature. In the present investigation 10 species have been recorded among which *Agmenellum quadruplicatum, Nostoc species, Symploca muscorum* and *Oscillatoria* species are dominant at the study period. Temperature has found to play a key role in the periodicity of this group. This statement has also been supported by Mishra and Saksena (1993), Unni (1984).

Chlorophyceae exhibit third order of dominance in the reservoir. These are moderately productive water bodies. The dominant group among the chlorophyceae are *Arthrodesmus sp, Coelastrum sphaericum , Cosmarium monomazum , Euastrum germinatum Odoginium sp, Staurastrum chaetoceras, Tetraedran regulare, Ankistrodesmus,* and *Pediastrum simplex,* were dominant are recoded in appreciable number in the reservoir. *Pediastrum simplex* were occurred throughout the period of investigation. Which could be indicated as pollution tolerant genera, Palmer (1980) and Mishra and Saksena (1993) have also reported these genera as the bio-indicator of organic pollution.

Bacillariophyceae exhibit first order in the Dagadparwa reservoir during September 2009 to April 2010 – following genera were found to be present, *Nitzschia, Synedra*, and *Fragilaria* species. Diatoms are usually abundant in alkaline waters having pH > 8 (Kamat, 1965) and as per Round (1981), *Nitzschia* can be dominant in the plankton when water is rich in organic nutrients. Diatoms are preferred food of many aquatic organisms in the upper trophic level and thus form the basis of productive fisheries. Ryther (1969) diatoms constitute the most important group of algae even though most species are sessile and associated with littoral substrate, Wetzel (1983).

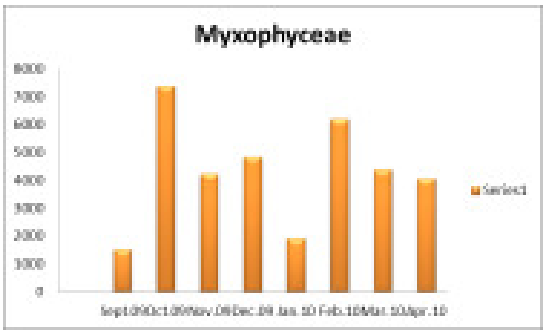
Phytoplankton are regarded as the chief primary producers of any aquatic environment (Wetzel, 1975), which fix solar energy by the process of photosynthesis, assimilating carbon dioxide, to produce carbohydrates, thus serve as an important link between the abiotic factors and the biota in the aquatic system (Saha *et al.,* 2000). Phytoplankton has great importance from ecological point of view.

Table:-1 Phytoplankton diversity of Dagadparwa reservoir during September 2009- April 2010.

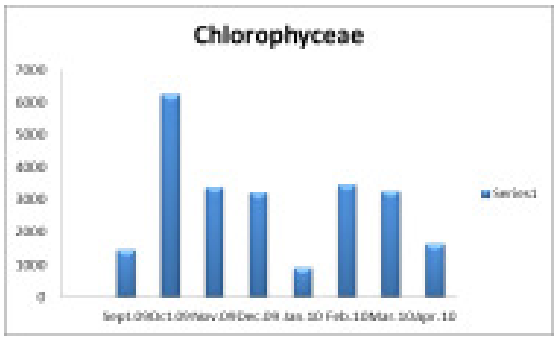
Sr. No.	PHYTOPLANKTON	Sept. 09	Oct. 09	Nov. 09	Dec. 09	Jan. 09	Feb. 09	Mar. 09	Apr. 09	Ave.	Min.	Max.
					Cyanophyceae							
1	***Agmenellum quadruplicatum***	354.0	678.0	361.5	516.0	NA	467.0	417.0	789.0	511.8	354.0	789.0
2	***Desmonema species***	45.0	456.0	394.5	151.3	333.0	321.3	345.0	NA	292.3	45.0	456.0
3	***Dichothrix gypsophila***	12.0	456.0	345.0	17.5	234.0	456.0	234.0	NA	250.6	12.0	456.0
4	***Fremyella species***	34.0	345.0	152.3	78.0	345.0	211.3	178.0	122.0	183.2	34.0	345.0
5	***Gomphosphaeria wichurae***	23.0	567.0	305.0	233.8	NA	449.0	289.5	456.0	331.9	23.0	567.0
6	***Nodularia spumigena***	32.0	345.0	195.0	357.3	NA	343.5	343.5	345.0	280.2	32.0	357.3
7	***Nostoc species***	32.0	567.0	290.0	376.3	125.0	345.0	290.0	123.0	268.5	32.0	567.0
8	***Osillatria species***	354.0	243.0	114.7	569.3	34.0	418.0	163.0	123.0	252.4	34.0	569.3
9	***Raphidiopsis curvata***	24.0	54.0	39.0	184.5	NA	129.0	39.0	NA	78.3	24.0	184.5
10	***Symploca muscorum***	45.0	543.0	299.5	261.8	56.0	351.0	280.0	465.0	287.7	45.0	543.0
					CHLOROPHYCEAE							
1	***Ankistrodesmus sp.***	12.0	34.0	34.0	44.5	34.0	29.5	12.0	NA	28.6	12.0	44.5
2	***Arthrodesmus sp.***	25.0	456.0	311.7	35.0	25.0	33.0	23.0	23.0	116.5	23.0	456.0
3	***Closterium leibleinu***	24.0	12.0	12.0	40.7	NA	38.0	12.0	NA	23.1	12.0	40.7
4	***Coelastrum chodati***	13.0	34.0	28.5	27.7	NA	30.0	30.0	45.0	29.7	13.0	45.0
5	***Coelastrum sphaericum***	24.0	222.0	122.5	49.8	NA	44.3	44.3	56.0	80.4	24.0	222.0
6	***Cosmarium granatum***	25.0	123.0	81.7	48.5	78.0	29.7	48.3	NA	62.0	25.0	123.0
7	***Cosmarium monomazum***	12.0	235.0	74.0	297.3	14.0	264.0	201.5	12.0	138.7	12.0	297.3
8	***Dactyosphaerium pulchellum***	11.0	77.0	42.0	53.8	25.0	62.7	42.0	24.0	42.2	11.0	77.0
9	***Euastrum germinatum***	24.0	337.0	124.0	50.3	47.0	148.7	123.3	24.0	109.8	24.0	337.0
10	***Gonatozy gon kinaham***	22.0	12.0	12.0	39.0	NA		0.0	NA	17.0	0.0	39.0
11	***Odoginium sp***	34.0	254.0	149.5	61.5	NA	70.0	70.0	95.0	104.9	34.0	254.0
12	***Palmella minuata***	25.0	211.0	93.0	64.5	45.0	43.3	50.7	94.0	78.3	25.0	211.0
13	***Pediastrum duplex***	33.0	67.0	56.0	44.7	45.0	61.5	56.0	56.0	52.4	33.0	67.0
14	***Pediastrum species***	35.0	35.0	35.0	35.0	NA	55.5	35.0	35.0	37.9	35.0	55.5
15	***Spirotaenia condensate***	45.0	45.0	34.0	45.0	45.0	63.0	54.0	NA	47.3	34.0	63.0
16	***Staurastrum chaetoceras***	25.0	578.0	328.0	49.7	NA	328.0	328.0	NA	272.8	25.0	578.0
17	***Staurastrum leptocladium***	33.0	65.0	48.7	52.8	36.0	121.0	64.3	55.0	59.5	33.0	121.0
18	***Staurastrum orbiculare***	44.0	76.0	54.7	52.0	76.0	58.7	51.7	44.0	57.1	44.0	76.0
19	***Tetraedran regulare***	57.0	432.0	163.0	245.3	12.0	174.7	250.5	45.0	172.4	12.0	432.0
20	***Westella botryoides***	223.0	67.0	61.5	311.0	NA	114.3	145.0	223.0	163.5	61.5	311.0
					Basilariophyceae							
1	***Amphiprora alata***	0.0	45.0	37.7	NA	NA	39.5	39.5	34.0	32.6	0.0	45.0
2	***Anomoeoneis sphaerophora***	23.0	467.0	300.3	54.7	345.0	71.0	60.3	89.0	176.3	23.0	467.0
3	***Cocconeis placentula***	33.0	234.0	134.0	55.8	34.0	150.5	134.0	234.0	126.2	33.0	234.0
4	***Coloneis amphisbaena***	134.0	456.0	270.7	458.0	134.0	311.3	203.3	222.0	273.7	134.0	458.0
5	***Cymatopleura solea***	245.0	432.0	181.3	349.0	45.0	243.5	284.7	453.0	279.2	45.0	453.0
6	***Cymbella sp.***	123.0	456.0	157.3	242.3	456.0	229.3	286.0	87.0	254.6	87.0	456.0
7	***Denticula thermalis***	37.0	57.0	47.0	51.0	37.0	256.5	246.5	NA	104.6	37.0	256.5
8	***Fragilaria capucina***	456.0	896.0	639.7	589.5	456.0	563.0	597.0	768.0	620.6	456.0	896.0
09	***Frustulia rhomboids***	345.0	556.0	237.7	345.0	NA	234.0	234.0	345.0	328.1	234.0	556.0
10	***Gamphoneis herculeanum***	45.0	678.0	361.5	359.7	NA	359.7	361.5	678.0	406.2	45.0	678.0
11	***Mastogloia danseii***	34.0	234.0	135.0	108.0	234.0	45.5	134.5	NA	132.1	34.0	234.0
12	***Navicula radiosa***	47.0	467.0	271.5	47.0	NA	257.0	246.0	NA	222.6	47.0	467.0
13	***Nedium affinis***	33.0	85.0	76.5	50.0	NA	115.3	139.5	234.0	104.8	33.0	234.0
14	***Pinularia nobilis***	56.0	567.0	276.0	355.0	27.0	355.0	348.7	234.0	277.3	27.0	567.0
15	***Surirella spe.***	12.0	445.0	167.3	289.5	12.0	456.0	228.5	445.0	256.9	12.0	456.0
16	***Synedra ulna***	56.0	56.0	39.5	139.0	56.0	123.0	49.5	NA	74.1	39.5	139.0

Note:- Above values were as average individual / l , NA= not available

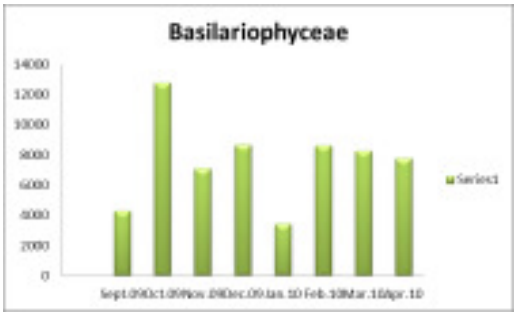
Graph :- 1 Monthly distribution of Myxophyceae



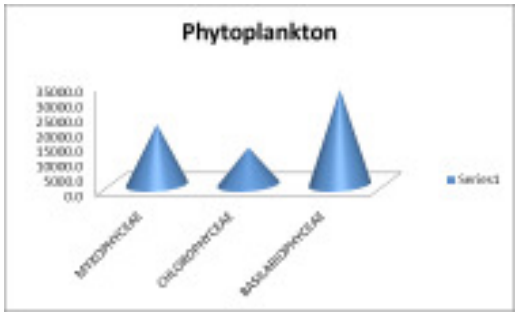
Graph:- 2 Monthly distribution of Chlorophyceae



Graph:- 3 Monthly distribution of Basilariophyceae



Graph – 4 Total phytoplankton of Dagadparwa reservoir



Water Temperature: Water temperature is very important parameter, because it influences the biota in a water body by affecting activities such as behaviour, respiration and metabolism. It is necessary to study temperature variations in water body, in animals ecophysiological and toxicological aspects because, water density and oxygen content are temperature related and hence temperature indirectly affects osmoregulation and respiration of the animal (Shinde et al 2010) .

The average, minimum and maximum water temperature value was recorded 13.15 °C,9.98°C and 21.25°C respectively. Correlation study shows that temperature shows significant positive correlation with conductivity (r= 0.77**), TDS (r= 0.90**) sulphate (r=0.70**) and nitrate (r= 76**) while it shows significant negative correlation with dissolved oxygen (r = -0.59*), Sechi disc depth (r= -0.65**), and transparency vertical attenuation coefficient (r= -0.71**) during September 2009 to April 2010 table 2 and 3.

In the present investigation water temperature show monthly variation in the reservoir water minimum temperature were during November 2009 and maximum during April 2010. Low water temperature during November 2009 and higher level of temperature during April 2010 because of high level of water and low atmospheric temperature during winter months and low level of water higher solar radiation and low level of water during summer months. Similar results also reported by Jawale and Patil, 2009, Shinde et al 2010, recorded

minimum temperature, in winter season and maximum in summer.

pH

pH is an important parameter that determines the suitability of water for various purposes. pH of water is important for the biotic communities because most of the plant and animal species can survive in a narrow range of pH from slightly acidic to slightly alkaline condition. During the study period the high pH (9.26) value at station 4 and low pH value (8.06) at station 1 was recorded. Statistical analysis shows that pH shows significant positive correlation with nitrate (r= 0.52*) and Chlorophyceae (r=0.68**) and negative significant correlation with P. alkl.(r=-0.91**) cyanophyceae (r= -0.79**) and basilariophyceae (r= -0.69**). The present results confirmed with the study of Mullar et al. (2010) observe, high pH values coincided with plankton density reaches peak. On the other hand, Puttaiah (1986) has obtained a direct relationship between water temperature and pH. Whereas, Mary Bai (1989) reported that the pH of polluted water fluctuates in the range of 8.0 to 9.0. In the present investigation pH recorded ranges between 8.06 to 9.26.Therefore, pH values all the stations shows slightly alkaline condition.

EC

Conductivity is the capacity of substance or solution to conduct electrical current, most of the salts in water are present in the ionic forms, capable of conducting electric current. EC recorded minimum of 77.65 ìmhos/cm and maximum of 82.71 ìmhos /cm in the reservoir water .While, higher values of electrical conductivity recorded in monsoon season and low during winter seasons. Correlation study shows significant positive correlation with TDS (r=0.71**) , Trans.V(r=0.61**) , Sulphate (r=0.72**) phosphate (r=0.54*) and nitrate (r= 0.85**) while significant negative correlation with SDD(r= -0.60**) ,Trans. E.(r=-0.66**). This may be due to agricultural run-off. Similar observations have been made by Mullar et al. (2010) and Nagarathna and Hosamani (2002).

Total dissolved solids

Total dissolved solids are affected by the geographical location of the water body, drainage, rainfall, deposit organic material at the bottom level, incoming water and nature of biota. The excess amount of total dissolved solids in water disturbed the ecological balance due to osmotic regulation and suffocation caused in aquatic fauna. In various water bodies in India, the total dissolved solids are variable. Kumbhar *et al.* 2009; Sharma *et al.,* 2010; Chinnaiah & Rao, 2011 and Kalwale & Savale, 2012. In present investigation, total dissolved solids in Dagadparwa reservoir have been observed up to 210 mg L-1 to 450 mg L-1 with an average value of 320.8 mg L-1. Lower values of total dissolved solids were recorded in the month of February 2010 and higher in the month of September 2009. High values of total dissolved solids during monsoon season may be attributed to increased high runoff of water from agricultural area. The present study emphasizes that T.D.S. is highly positively correlated with total alkalinity ,total hardness, hardness as Caco3, Ca++, sulphate, and nitrate (r =0.69**; r = 0.50*; r=0.64**; r= 0.64**;r=0.54;and r= 0.53*) respectively. However T.D.S. shows negative correlation with SDD (r=-0.66**) and Tarns. E (r=-0.78**)Similar results have also been observed by above workers.

Turbidity

Turbidity is a measure of the water's clarity or cloudiness. Scientists sometimes refer

to the clearness of the water as **water clarity**. When water is cloudy or murky it is said to be 'turbid'. Turbidity is caused when **sediment**, soil and other particles that settle to the bottom are stirred up in the water. The presence of sediment in the water can cause color changes in the water from nearly white to reddish-brown. The amount of **plankton** (microscopic plants and animals) present in the water can also affect turbidity. Algal blooms can turn the water yellow, blue, green, or even red-orange, and likewise increase turbidity.in the present study average minimum and maximum SDD (91.99 cm, 65.75 cm and 115.8cm) Trans. E (223.7cm, 164.4cm and 264.5 cm) and Trans. V (0.024, 0.02 and 0.03) respectively were recorded in the reservoir water table2 . Correlation study reveals that SDD shows significant positive correlation with Trans. E (r=0.96**) and Trans.V (r=0.60**). Whereas Trans E. shows negative correlation with Trans.V (r=-0.55) and Trans. V shows positive correlation with sulphate (r=0.55*) phosphate(r=0.56*) and nitrate (r=0.68**) and significant negative correlation with T.Alk. (r=-0.73**),T.hard.(r=-0.50*) and with cyanophyceae (r=-0.52*). Similar study also reported by Mustapha (2009) high transparency in summer season at shallow tropical African reservoir.

Dissolved Oxygen

It is an important factor in water as it regulates many metabolic processes of aquatic organisms. The dissolved oxygen almost all plants and animals need for respiration. The values of dissolved oxygen ranged between 8.1 mg/L to 10.5 mg/L. The minimum dissolved oxygen was recorded in the month of March 2010 and maximum in the month of November. In the present study DO significantly negatively correlated with water temperature (r=-0.59*) and positively correlated with T. Alk. (r= 0.51*). Similar trends were reported by Deshmukh and Ambore (2006), Ahamed and Krishnamurthy (1990).

Free Co2

The amount of free carbon dioxide depends on the decomposition of topsoil and chemical nature underlying rocks. By far, it is relatively abundant in natural waters and its important in photosynthetic activity requires no further explanation. Since the seasonal carbon flow in the system forms the very base of photo-pyramid (Goldman and Harne, 1983). In the present investigation the free carbon dioxide values were remain absent throughout the period of investigation (Table 2). Further, it is of interest to note that the observation reveals period of values of free carbon dioxide, which attributed slight increase in pH values as also, noted by Singhal et al., (1986) reported that free carbon dioxide and water temperature varied independently with low values of carbon dioxide when aquatic vegetation was more abundant and high values free carbon dioxide due to high water inflow to the reservoir. In the present study free carbon dioxide was absent during period of investigation.

Total alkalinity

Alkalinity of water is a measure of its capacity to neutralized acids and the total alkalinity is the total sum of carbonate and bicarbonate alkalinities. It is generally imparted by the salts of carbonates, bicarbonates, phosphates, nitrates, borates, silicates etc along with hydroxyl ions available in free state. The high alkalinity can be attributed to increased rate of organic decomposition during which free carbon dioxide is liberated and reacts with water to form bicarbonates thereby increasing the total alkalinity (Goel *et al.* 1984). According to Spence (1964), water bodies have been categorized into three major categories

based on the values of alkalinity, *viz.,* (i) nutrient poor, (ii) moderately nutrient rich and (iii) nutrient rich. In present study, the value of total alkalinity was ranging from 157.8 mg L-1 to 183.1 mg L-1 with an

average value of 171.7 mg L-1 and correlation study shows total alkalinity ahows significant direct correlation with other physicochemical parameter and with phytoplankton diversity with total hardness (r=0.99**) , Calcium carbonates (r=0.99**), Calcium (r=0.99**) Magnesium (r=0.99**) chloride (r=0.85**), sulphate (r=0.72**) and with Nitrate (r =0.62**)and with cyanophyceae (r=0.62**), chlorophyceae (r=0.73**) and Basilariophyceae(r=0.73**). Accordingly, the level of average total alkalinity was <60.0 mg L-1 which confirmed nutrients rich and productive nature of the reservoir. Garg *et al.* (2006 & 2009) in Harsi and Ramsagar reservoirs, Verma *et al.* (2011) in Kankaria lake and Verma *et al.* (2012) in Chandola lake, Saksena and Saksena (2012) in Raipur reservoir have found total alkalinity with its maximum value in summer and minimum in winter season. Similar results were observed in reservoir under study, the minimum alkalinity was recorded in winter and rainy seasons and maximum in summer season. During summer season the water level of reservoir decreases resulting death and decay of plants and living organisms. It was lower in winter and rainy seasons because of the fact that winter had high photosynthetic rate and in rainy season it is directly affected by the rains.

Total hardness

In the present investigation based on the scale represent low hardness value recorded 219 mg/L and high hardness value recorded 284.4 mg/L in the reservoir water. This indicate total hardness values ranged between 219 mg/L to 284.4 mg/L indicating the water is too hard. Total hardness show direct relation with Calcium , magnesium , chloride , sulphate , phosphate and nitrate and they also shows direct relation with biotic component (cyanophyceae , chlorophyceae and basilariophyceae) table 3. Patil et al. (1985) reported higher hardness during monsoon season and attributed it to the inflow of rainwater from agricultural fields carrying good amount of suspended salts. Present investigations are in agreement with these findings.

Calcium

Rich source of calcium will be drained through various sources, which results fresh water alkaline nature being associated with magnesium, barium, strontium etc. But according to reports high calcium content in the water considered no hazardous effect on human health. On the other hand, it plays very important role in growth and metabolism of aquatic organisms. In the present investigation average calcium content ranges from minimum of 37.47 mg/L to 48.14 mg/L in the reservoir. Calcium also directly related with chloride , sulphate, nitrate, cyanophyceae, chlorophyceae and basilariophyceae. Comparatively, calcium found to be maximum values in monsoon season.

Magnesium

Magnesium concentration in the water always remains lower than that of calcium content. Variations in magnesium concentration have been attributed to different biogeochemical activities in the water ecosystem. In the present investigation the average concentration of magnesium ranges from 30.37 mg/L to 39.88 mg/L respectively. Correlation study reals that magnesium shows direct relation with chloride, sulphate, nitrate, cyanophyceae, chlorophyceae and

basilariophyceae. Similarly, seasonal variations of magnesium concentration showed high during monsoon followed by northeast monsoon season. But comparatively less during summer season. Thus, concentration of magnesium remained lower than calcium throughout the study in all five water bodies. Dakshini and Gupta (1974) also witnessed similar variations.

Chloride

Higher concentration of chloride in the water may be due to discharge of domestic sewage and also excess of chlorine in water, it serves as an indicator of water pollution. During present study average annual chloride content ranges from minimum of 57.24 mg/L to maximum 85.5 mg/l. It exhibit direct correlation with sulphate, nitrate ,cyanophyceae, chlorophyceae and basilariophyceae respectively. The findings attributed high chloride value due to increase of organic matter.

Sulphate

Sulphates are naturally occurring anion present in all kinds of natural waters and primarily compounded to all types of minerals found in watershed and acid rain. They are carried in to the lakes through the rains. It is an important constituent of hardness with calcium and magnesium and is one of the key nutrients in the aquatic environment. In the present investigation, the sulphates were fluctuating between 0.82 mg L/1 and 1.22 mg L/1 with an average of 1 mg L/1 during the period of entire study. It may be mentioned that higher sulphates levels were recorded in September 2009 and lower in March 2010. The high values of sulphates may be due to run off sewage waste or due to oxidation of sulphide or sulphite into sulphate in the presence of photosynthetic sulphur bacteria. The relatively low values of sulphates were measured during winter mainly because of its uptake and accumulation by plankton and aquatic macrophytes as well as bacteria. Statistical study demonstrate that sulphate show significant correlation with phosphate (r=0.78**), nitrate(r=0.91**) and weak relation with cyanophyceae, chlorophyceae and basilariophyceae. These results are in conformity with Kirubavathy *et al.* (2005), Khare *et al.* (2007), Krishnamoorthi *et al.* (2011) and Prabhakar *et al.* (2012).

Phosphate

Phosphorous is considered to be the most significant component among the nutrients responsible for eutrophication of a water body, as it is the primary initiating factor. High concentrations of phosphates can indicate the presence of pollution and are largely responsible for eutrophic conditions. Lee *et al.* (1981) have classified the water bodies on the basis of phosphorus contents into five categories, *viz.*, oligotrophic, oligo-mesotrophic, mesotrophic, meso-eutrophic, eutrophic. Phosphorus is rarely found in high concentrations in freshwaters as it is actively taken up by plants. In the present study on Dagadparwa reservoir, the maximum value of phosphorous (0.49 mg L/1) was obtained in September 2009 and the minimum (0.31 mg L-1) in March 2010. Low values of phosphates during the summer season are due to its utilization by microphytes and macrophytes in their growth. Surface runoff from washings of agricultural fields and mixing with the incoming water to the reservoir made higher values of phosphorous in the reservoir. Similar reasons have been projected by Kaushik & Saksena (1999), Ganesan & Sultan (2009) and Prabhakar *et al.* (2012) in their studies. When the criterion of inorganic phosphorus is applied, Raipur reservoir can be placed

under eutrophic water body (Lee *et al.* 1981).

Nitrate

The nitrogen in water occurs as bound forms like nitrate, nitrite, ammonia and organic forms *viz*., urea, amino acids etc. Nitrates are products of oxidation of organic nitrogen by the bacteria present in soil and water where sufficient oxygen is present. High concentration of nitrates are useful in irrigation but their entry into water resources increase the growth of nuisance algae, macrophytes and trigger eutrophication and pollution (Trivedy & Goel 1986). In the present study on Dagadparwa reservoir, the level of nitrate was found to be 0.83 mg L/1 and 1.33 mg L/1 with an average of 1 mg L/ 1. Nitrates were present in higher concentration during summer and monsoon while lowest in winter season. Similar opinions were also expressed by workers working on different water bodies (Dagaonkar & Saksena 1992, Garg *et al.* 2006, Sinha & Biswas 2011, Prabhakar *et al*. 2012).

Conclusion

In conclusion, phytoplankton diversity (Cyanophyceae, chlorophyceae and basilariophyceae) and various physico-chemical characteristics of Dagadparwa reservoir like water temperature ,pH, transparency, electrical conductivity, total dissolved solids, free carbon dioxide, Dissolved oxygen, phenolphthalein alkalinity, total alkalinity, total hardness, calciumhardness as caco3 ,Calcium hardness as Ca++, Magnesium, chlorides, sulphates , phosphates and nitrate have been evaluated with that of the phytoplankton diversity and physico-chemical characteristics of water in different trophic status as assigned by various workers (Ohle 1938, Olsen 1950, Alikunhi 1957, Sawyer 1960, Spence 1964, Vollenweider 1968, Reid & Wood 1976, Lee *et al.* 1981, Unni 1983, Venkateswarlu 1983). It has been found that Dagadparwa reservoir can be categorized as oligo-mesotrophic with moderate amount of nutrients which may be due to agricultural practices being done by farmers in surrounding catchment area of this reservoir. Thus, the reservoir may serve as a good habitat for planktonic organisms and can also be very well used for further stocking of Indian major carps for their cultivation.

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Some folkloric medicinal plants from Patur Tahsil of Akola district (MS) India

D.G.Bhadange and P.G. Dhawale
Shri Shivaji College, Akola
Corresponding Auther : E Mail: pgdhawale2013@gmail.com

Abstract

Patur tahsil of Akola district is rich in ehnomedicinal plants. The present paper deals with study of plants used for ethnomedicinal purposes. The ethnomedicinal data of 20 plants species belonging to 15 families were collected from Patur forest. The ethnomedicinal plants are used by tribal pepoles, medicinal mens, vaidoo's and by practitioner of traditional medicinal system of medicine such as ayurveda, unani and siddha. The aim of present research was to record the indigenous knowledge about medicinal plants, Botanical names, common names, family and traditional practice of twenty plant species are discus here for treatment of various ailments.

Keywords: Ethnobotany, Ethnomedicine, Patur forest, meditional plants, tribals, vaidoo's.

Introduction

Plants and various plant products have been used to treat or prevent illness since before recorded history. 'Virikhayurveda' and 'Rig Veda' are few of the well known documentation in traditional herbal medicine available in form of literature written around 2000 B.C. According to World Health Organization (WHO) more than 80% of the world's population relies on traditional medicine for their primary healthcare needs (Anonymous, 1966). Though at present Indian health care system consists of both traditional and modem systems of medicines, both originated from ancient organized traditional systems of medicine like 'Ayurveda', 'Siddha' and 'Unani' and unorganized systems like various folk medicinal system (Trivedi, 2005).

Akola is an important district of maharastra and it display faily ethnobotanical rich plants and cultural diversity.The district is located in the vidarbha region in central india . It has area about 543.1 square kilometer situated 20.42^0 N and 77.02^0 E.

The natural vegetation of Patur forest includes a variety of plant species having economic importance. It yields timber, gum and resinous plants, food and fodder plants, and plants having medicinal value. Tribal are largely dependent on forest products for their livelihood. They are knowledgeable about the utility of the majority of these plants. They collect gum, resin, fodder, timber and fuel wood from the sanctuary area and offer it for sale in the nearby town. Therefore, most of the plant species are either becoming less abundant or on the verge of extinction. Several workers like Jain, 1963; Bhatnagar *et a*l., 1973; Bhalla *et al*., 1992; Bajpai and Mitra, 1997 and Dubey *et al*., 2001, have been investigating the ethnobotany of northern, southern and central India. Similarly Kamble and Pradhan, 1980; Naik, 1998. However, patur tahsil of akola disrict remains neglected, even though the vegetation may be of ethnobotanical interest.

Material and method

Ethnobotanical surveys were conducted in 2012-13 in tribal dominated and rural areas from Patur tahsil of akola district. Authors collected data on folk medicinal plants used by tribal and rural peoples used for curing various ailments (Table no. 1). These observations are based on personnel interviews with elderly tribal mens, womens and knowledgeable persons who practicing herbal therapy and are much familiar with forest area. Identification of collected plants was identified with the help of flora of Marathwada by V. N. Naik (1998), Flora of Akola District by Kamble, S. Y. and Pradhan, S. G. (1988). The voucher specimens were deposited in Department of Botany, Shri. Shivaji College, Akola. The botanical names ,common name, family, ethno medicinal uses and images of plant species are given in table no. 1.

Results and discussion

Research and extension work are the major pathways to integrate folk knowledge about ethnobotanical and ethnomedicinal plants for modern primary health care and human welfare. The major objective should be to match safe, effective remedies to common illnesses, using local medicinal plants and cost effective household needs. The problem is that very little is known about folk and traditional medicine proper, and it is impossible to say how effective they are without a lot more research.

This survey provides evidence that the tribal people and other villagers residing in the near vicinity of the Patur forest use about these plant species for the treatment of various ailments and household uses. The tribal people depend mostly on herbal medicines. The plants are generally used for pulmanary tuberculosis, stomach disorders, **, cardiac debility, ageing, sexual weakness.** skin diseases, heel pain, tooth ache, cough, inflamation, kidney diseases, fever, tonic, ulcer, asthma, snake-bite, jaundice, ear-diseases, **cardiac debility, ageing, sexual weakness,** brain stimulant, and in the treatment of cancer, bronchitis, asthma mouth sores and blood disorder,tretment of sterility in males . Some plants were used for the manufacture of houses, furniture and agricultural implements.

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Economic Philosophy of Mahatma Gandhi on Sarvodaya

Dr. R. M. Bhise
Associate Professor
Shri Shivaji Arts, Commerce & Science College, Akola

Introduction:-

Mahatma Gandhi is the great political leaders of third world countries, who have standing in the global community Mahatma Gandhi, tried their best to understand an oriental society. Mahatma Gandhi is the unquestioned 20th century prophet of the world. His great concern for all the oppressed & depressed made him committed to server these through his motherland. He started a good number of institutions to be manned by his chosen experts in their fields & gave them the perennial message of wiping every Lear from every eye. He desired to establish 'Saevodaya samaj' through granting power to the people at the grassroots so that they could enjoy gram swaraj for ever.

Gandhi's Economic philosophy of sarvodaya :-

Sarvodaya's identification of the common man as one who is at receiving end of grand plans from bureaucrats & policy makers, sermons from moralizers & good's & services from a market economy it a movement dedicated to the resurgence of human values. Welfare of all is based on the ancient scriptures & tradition of India. The 'sarvodaya' is the combination of two world 'sarvo' & 'uday'. It denotes the meaning up list of all it also gives the meaning 'good of all', 'services to all' & 'welfare of all' etc. it is concerned with Gandhian socialism. Its purpose is the socio-economic development of all. One of the remarkable finds in sarvosaya rural development strategy is the discovery of an intelligible language to open up the development dialogue with the people. The main purpose of sarvodaya is to create moral atmosphere in the society. Truth, non-violence & purity are the foundation of sarvodaya. Working for the equality means abolishing the external conflict between capital & land labour.

Swaraj and Swadeshi

Gandhiji (and Sarvodaya Movement after him) calls for the establishment of a Sarvodaya Social Order, based on the core principles of Swarajya and Swadeshi. These ideas have been further elaborated to include the following set of integrated princi0ples for the creation of a sane society in India.

a) There is need for the creation of a new value system in which the supreme value will be the welfare of man as an individual and as a social person.

b) All wealth, natural and man-made, should be considered as belonging to all men.

c) For the organization of social, political and economic life, the operational units will have to be such as to permit the effective participation, in its self-management, by the members of specific groups and loacal communities.

d) All the members of the community have the right to get employment and the means of satisfaction of their basic human needs.

e) The working of the social system will be based on truth and non-violence and efforts will be continuously made to see that the system is not based on exploitations of any individual or group either within the system or outside.

f) Education, persuasion and consent will be the major instruments for bringing about the desired change, in the individual and social values and practice. In the individual and social values and practice. In situations, wherein, individuals and groups refuse to see reason and resist the desired change, in spite of honest and concerted efforts to educate them and seek their support in favor of the changes, which a large majority have accepted, the weapons of Satyagraha will have to be used as the last resort, as the unfailing weapon of persuasion and education.

Objective of Sarvodaya

1) The voluntary communization of all wealth, tangible and intangible; in the case of a village, all lands would be rested in the village community and be held by the 'Gramsabha' of all adult villagers, on behalf of the villagers.

2) The principle of sharing, as the energizing and dynamic basis of individual and social action; every landowning villager would part with 1/20th part of his land, and annually give 1/40th part of his produce to the 'gram kosh', a village fund; every worker or service holder would give annually 1/30the part of his income. All those who own tangible wealth in any form will donate a part of their wealth or income as 'sampattidan.'

3) Constitution of the 'Gramsabha' in the village, which will be organizational unit and function as its government. All the decisions of the 'Gramsabha' would be taken on the basis of the

principle of unanimity and will be arrived at through discussion and persuasion.

4) The progressive, step by step, realization of the goal of 'gramswaraj', and exploitation free social order, through the positive method of an ever-widening circle of participation by the people at every step.

The Sarvodaya philosophy is capable of meeting the greatest challenge of the age. The most urgent need of today is the abolition of war, but since' peace without depends upon the peace within.' the elimination of war demands domestic peace within countries as well. The fundamental causes of war are psychological and sociological including economical, and it is impossible to separate them, Sarvodaya-by laying stress on the goodness of human nature, unity of mankind, service of man, application of the moral principles considered valid for individuals to group life and inter-state relations, the nonviolent process of change, social and economic equality, economic and political decentralization-tries to resolve the various kinds of tensions that disturb domestic and international harmony. It is capable of strengthening the force of love, creativity and joy of the life. Sarvodaya takes a whole view of man and emphasizes his spiritual nature. The very conception of Sarvodaya denotes going beyond the seeming conflicts of interests to a spiritual view of life. It strikes a happy mean between old spiritualism, which derided life and the prevailing materialism, which totally rejects the spiritual.

The four main pillars of Sarvodaya are

1. So long as people put their trust in violence the world will make no progress.
2. The system of party politics will not last, and will fail the people who believe in it.
3. Individual ownership of land is doomed to failure. Land and wealth must for

all. All must work together and all together must enjoy the fruits of heir labour.

4. Difference of caste and religion must not be recognized.

The whole programme of Sarvodaya is based on seeing good in every man. Only when we are able to see good, we can see God. We cannot hope to see God in his perfection all at once. We can only see a bit of Him at a time and the process is continued till the body lasts. That is why Gandhiji used to say,' My quest continues.'

Feature of the Sarvodaya :-

1. Sarvodaya is a strong ideology for prevention of socio-economic ills of the society.

2. It standees for creating high moral character in the society. It is only possible by truth, non-violence, self sacrifice & purity etc.

3. At aims at adopting self sacrifice for the sake of others, taking & giving to others. It is the best principle of sarvodaya.

4. It puts importance for the development of villages for this village should be given priority in giving aids.

Gandhi's sarvodaya centers around the small republic where the mass of people manage their affairs without depending on the state. In Gandhi's scheme, village panchayat plays a crucial role in the policy making. In a face to face society, people have an informal arrangement for the management of their affairs. One's village panchayat is formed, it's easy to create a sarvodaya economic. Political in institutions can be aim means for the management of local resources. Rich people can hand over their surplus land to the village panchayat which can distribute it to the needy. Labourial community contributes their labour to the village fund. The main agenda of Gandhian political programmers is the social reconstruction issue. The village panchayat can take care of education, heath. It can help in abolition of untouchability & weaving khadi for their needs. Thus the village community can turn in to a self – sufficient economy. Sarvodaya opposes to the ideas of egoism & wealth. There is no scope for class struggle in sarvodaya. Social good; rationality & communal harmony are basic principles of sarvodaya. There fore, sarvodaya accepts the universalist- ion of self government. The strategies of sarvodaya as mentioned earlier are born out of hard experience. Herein lies the strength of sarvodaya's developmental strategy. The hard experiences have their roots in Sri Lankan culture & imported have very often failed to bring out the desired results because when they were transplanted here, they lacked the social & cultural social necessary for their successful growth in Sri Lanka. Gandhiji's plan of production by the masses also has other distinct advantages over mass production. His ideal of village sarvodaya, it wasn't easy to establish ideal village & therefore, he emphasized the revival of village industries.

Conclusion:-

For a synthesis of various ideas that Gandhi expanded, one may construct what may be called a balanced growth. Sarvodaya understands of the village in its totality marks its approach to rural development which is different from the approach of the government or even other developmental agencies. The problems of the village are tackled by sarvodaya in their economic, social, cultural & religious dimensions. Gandhi propounded the theory of sarvodaya & applied it in the context of particular time, place & situation, each age & each problem needs a solution of its own & technique of its own to resolve the problem .The main technique of socialism

is nationalization that of sarvodaya is villagisation. Sarvodaya is a philosophy based on moral approach to the problems of mean kind. It believes in generation of human heart & mind. It wants to perfect the mechanism of representative democracy by utilizing moral idealism. He wanted to give a spiritual touch to all economic, social, political & other problems which he thought as the root cause of all prosperity & happiness. His ideas were always to the best interests & to the real solution of the problem of mankind.

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Estha: The Exploited Boy in Arundhati Roy's 'The God of Small Things'

Dr. Kiran S.Khandare
Associate Prof. in English,Shri Shivaji
Arts,Commerce & Science College, Akola

The year 1997 was an eventful one in the history of Indian writing in English. Arundhati Roy appeared with her first novel *The God of Small Things* and owns the booker prize for it. M. Krishna Nair, an eminent literary critic appreciated the universal appeal of the book. Arundhati Roy's contemporary writers Amitabh Ghosh, Anita Desai, Kamala Das, have praised her highly. Perhaps *The God Small Things* is one of the novels which got a wide acclaim from East to West and North to South. This novel is a product of a social reality .Though the events of the novel take place in Kerala it has a universal appeal. In this article my aim is to study the exploitation of Estha in *The God of Small Things.*

The children represent the future of the society so they deserve love and care, healthy and positive grooming. The great people like Mahatma Gandhi and Pandit Nehru are well known for their fondness for children. Even the constitution of India gives importance to children and defends their interests. Childhood is supposed to be a period when young ones are expected to live a carefree life. It is the duty of their parents to look after them, to provide them nourishing food and necessary clothes. The parents should be careful about the health, education and emotional needs of the children. As childhood is the period of growth and development they should be playful and joyful.

However in Indian society the picture is not satisfactory. Comparatively, the children of the upper classes are lucky. Their parents provide them good food, clothes, toys, medicine and education. Even emotional needs are fulfilled by the parents. In such families, the children are not victim of poverty. Nevertheless they suffer from the ill temper, obsessions or prejudices of their parents. In such cases we find that the parents think that their responsibilities end by admitting them in educational institutions and by spending money for them. In such cases the relations between the parents are strained and affect the mental health of children. If one or both of the parents are dead children becomes dependent on the relation who exploit them. Such unhappy experiences of childhood haunt the memory of people in later age and make them mentally ill. The children of widows and divorcees are usually destined to suffer in our society.

Being a realistic writer Arundhati Roy portrays the lot of Indian children in her novel. It is true that she does not present the lot of poor children in India but she portrays the general attitude of callousness, insensitivity and indifference. She depicts only three children in the novel namely Sophie Mole, Estha and Rahel. But through these three characters she reflects the ill fate of children prevalent in Indian society in well to do class. Their parents are divorced or sometime neglect their duty towards the children for personal interests. As we see Sophie Mole's mother is a white woman. She marries Chacko, a boastful young Indian. As she can't adjust herself with him so she gets separated. As a result the child Sophie

Mole feels alienated. The father of Estha and Rahel is a non white man. Estha and Rahel are forsaken by their father. Sophie Mole dies soon in an accident. Estha and Rahel survive but they face several difficulties. The novel can be viewed as a tragedy that destroyed the lives of Velutha and Ammu but certainly it is also a tale of how Estha and Rahel survived. To survive only is not important but how do they survive is also important. Children Estha and Rahel are not poor. They do not have to loose their childhood in early struggle for survival. Their problems are not related with body but with mind. Their tragedy is spiritual than physical or material.

The parents of Estha and Rahel were not poor. Their father was an assistant manager in a tea company while his mother's parental home had a pickle factory. But as their parents get divorced they are ill treated at the maternal grandfather's home. So they have to suffer without any fault of their own. The children being innocent could not understand the fact about their unwanted arrival at the home. However they soon came to know the fact about a double stigma of mixed parentage attached to them. As their father was Hindu and mother was Syrian Christian. Their grand aunt t Baby Kochamma and their maternal uncle Chacko disliked them. Moreover Chacko tell Ammu that children are not his responsibility. Even Kochu Maria, a maid servant at the home doesn't hesitate to remind Estha of his position in the house. She tells him that it was not his house.

Estha is agonized by such remarks and the coldness of his relations at Ayemenen. The separation of his parents has created a feeling of insecurity and uncertainty i.e. an identity crisis. His maternal aunt, Baby Kochamma and her friend Miss Mitten complain about Estha's rudeness. His aunt observes that his eyes are sly, uncouth and deceitful. She says that his eyes are growing wild. The unhappy boy Estha got some relief as he discovered the man Velutha, who loved Estha and Rahel. Gradually he had become a father figure to them. But condition changed when Ammu's secret relation with Velutha was revealed. Ammu was locked in her bedroom. The twins wanted to know the reason. Ammu was unable to weigh her words, had screamed

"If it was not for you I would not be here! None of this would have happened! I would have been free! I should have dumped you in an orphanage the day you were born! You are the millstone around my neck! (253).

Estha was sensitive and knew the meaning of millstone. He realized that both of them were unwanted. Their mother did not like them any more. So they wanted to run away even if it was raining. Estha's plan did not include Sophie but she insisted to join them. Unfortunately their little boat dashed with floating log and drowned. Sophie was drowned as she was not able to swim. It was merely an accident that turned it otherwise. However Estha was deemed guilty for the death of Sophie. Estha, Rahel and Ammu were allowed to attend the funeral of Sophie but they were forced to stand separately from the rest of the family. Then the boy was separated from his mother and sister and returned to his father who hardly loved him. It was argued that the boy needed his father's care and guidance. But the bitter truth was that Chacko wanted to get rid of his burden. In fact the idea to "return" him to his father came from the jealous mind of Baby Kochamma. But before he returns he has to pass the ordeal Baby Kochamma took him to the Kottayam police station to identify Velutha as the man responsible for kidnapping and murder. Velutha was so dear to him and the acquisition was false completely still Estha had

to obey Baby Kochamma as there was no other way to save his mother.

The experience left a deep, lasting impression on the boy's mind. He had looked into that beloved face of Velutha and said: Yes (32). The betrayal of Velutha leaves a sense of guilt in his psyche tormenting him like a mango hair between molars". (32) Estha had also the sad memory of inspector Thomas Mathew's misbehav with his mother and his calling her "Vaishya". His misbehavior and Ammu's reaction to it had left him uneasy forever.(7-8) The dramatic experience at "Abhilash Talkies" a case of sexual abuse by soft drink seller created a permanent sense of defilement and a constant apprehension of the return of the man.

As we know Estha returned to his father unwillingly he could not do good in the school, in and outside the house. He finished his school with mediocre results. He did not participate in group activities. Instead of going to the college he began to do the house work like sweeping, swabbing, laundering, cooking and shopping for vegetables. Gradually he stopped talking. He nursed his dog Khupchand well during illness and started walking alone for hours after its death.

The tragic story of Estha's life raises the question as he loses the speech. The answer lies in the fact the boy was brutalized by persons like Baby Kochamma, Kochu Maria, Inspector Matthews, Chacko and the soft drink man. But he does not rebel against his tormenters. He suffers passively. He could not raise the voice against the injustice done to him. Certainly this is the first reason of his silence.

The second explanation lies in the sense of shame and guilt that made him uneasy all the time. The sexual abuse by soft drink seller, the death of Sophie Mol for which he was accused, the betrayal of Velutha and Velutha's end are the major reasons. His acute feeling of loss accompanies the sense of shame and guilt makes him numb. The boy who had lost his dear one's –Ammu, Rahel, Velutha, Sophie, could not find any solace in the company of his father and step mother. Discarded by human beings Estha derived the comfort in his pet dog Khupchand. After the death of Khupchand he withdrew himself from the world. Perhaps Estha's silence can be explained as a defence mechanism of his agonized soul. There were at least two occasions in his life when speech resulted into bitter experiences. It seems that had he not started singing in the Abhilash talkies the sexual abuse could not have happened. Then due to compulsion of Baby Kochamma he said yes to the inspector's question in identifying Velutha as the person guilty for kidnapping and murder of Sophie Mol. Infact Estha was harmless child. He was the keeper of records. The natural custodian of bus tickets, bank receipt, cash memo's, cheque books (163) Even Baby Kochamma found him "Practical" "Tractable" "Farsighted" and "Responsible". But all his good qualities were neglected intentionally to suppress his personality.

It is irony of a situation such an innocent child was subjected to the worst cruelty of adults. His childhood was destroyed and his life ruined for no fault of his own. It constitutes a major tragedy in the novel. Such destruction of childhood makes us pathetic and sympathetic towards him. Indeed he was a "small thing" or "plaything" thrown back and forth by elders and their brutality doomed him totally. Innocence is a general trait of childhood and the mind of a child does not work exactly as that of a child. Despite all the rhetoric, the tragic story of Estha reveals that children are neglected in our society and little care is taken

to understand them. They are deprived of the attention and security they need. Even when laws are enacted to protect them, they are seldom enforced because the guardians are insensitive and the society is senseless about the children.

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QUALITATIVE PHYTOCHEMICAL ANALYSIS OF CAPPARIS GRANDIS L. (CAPPARIDACEAE) FROM AKOLA REGION (MS) INDIA

BHADANGE D. G. AND KHANDARE N. A
Shri Shivaji Arts,Commerce & Science College, Akola

ABSTRACT :

The preliminary phytochemical analysis of CAPPARIS GRANDIS L. from nearby forest of Akola region was carried out . the oualitative phytochemical analysis of CAPPARIS GRANDIS L. confirms the presence of various phytoconstituents like Alkaloids , Flavonoids , Phenols, Phlobatannin , Tannin , Steroids , Tarpenoids , Cardiac glycosides , Carbohydrates in solvent system .

KEY WORDS:
CAPPARIS GRANDIS L. PHYTOCONSTITUENTS , ETHNOMEDICINAL VALUE .

INTRODUCTION:

The whole of vegetable world has some or other medicinal properties infact after using plants for food early man looked to them again providing succour during ailments .

Medicinal plant have historyas long as the human civilization . Early Chinese, Indians, Hebrews and Egyptians have left us many written record eulogizing the medicinal properties of plants .Ayurveda the celebrated ancient Hindu system of medicine is almost wholly based on the plants. Drugs and medicine are obtained from practically all parts of the plants.

World plant biodiversity is the largest source of herbal medicine and still about 60-80 % world population rely on plant based medicine which being used since ancient ages as traditional health care system it is now clear that the medicinal value of this plant lies in the bioactive phytochemical constitute that produce definite physiological effect on human body . These natural compounds signify the base of modern drug as we use today

Phytoconstituents are the natural bioactive compounds founds in the plants . Thease phytoconstituents work with nutrient and fibre yo form an integrated part of human degence system against various diseases and stress condition phytochemicals are basically divided in to two groups i.e primary constituents according to there function in plant metabolism primary constituents comprise common sugars ,amino acids ,proteins and chlorophyll while secondary constituents consists of alkaloids ,flavonoids ,saponnin ,steroids ,tarpenoids ,carbohydrates and so on .The present study revealed the qualitative phytochemical analysis of CAPPARIS GRANDIS L. medicinally important plant used by the people of Akola district . CAPPARIS GRANDIS L. is the medium size treeabout 4-6 m tall .branches are dropping , bark is corcky ,yellowish brown leaves are alternate ,elliptic ,obovate ,purpulish ,berries globosepurpulish in colour dotted ,smooth 2-6 seeds

The flowering is in the February to April and the fruits in August to October.

MATERIALS AND METHOD

Material collection and sample processing.

The plant material was collected from local area and identified taxonomically in the department of Botany Shri Shivaji College

Akola (MS) India. The voucher specimen was deposited in the departmental herbarium.

The collected branches of the CAPPARIS GRANDIS L. are properly washed in the tap wate and then rinsed in the distilled water the rinsed branches are dried under shade for

10-12 days and powdered for further experimentation

QUALITATIVE ANALYSIS OF PHYTOCONSTITUENTS

Preliminary phytochemical tests of aqueous extract/powdered sample of plant was carried out as describe harborne (1973) and krishnaiah et al., (2009).

RESULT AND DISCUSSION

The present investigation was carried out CAPPARIS GRANDIS L. to study the presence of medicinally active phytochemicals in the CAPPARIS GRANDIS L. plant from the village people / tribals from the study area it was found that the tribals use this plant to cure arthritis skin eruption etc .

The result of qualitative phytochemical analysis is summerise in the table 1. For the qualitative analysis the sample was extracted in five different samples (Chloroform ,Methonol ,Acetone ,Petrollium ether ,and water).Alkaloids ,Flavonoids ,Phenolics ,Carbohydrate ,Tannin ,Phlobatannin SAponin and Carbohydrateare present in the plant (Table-1) .

The present result indicate that, the plant has diverse phytochemicals which might have responcible for its medicinal potential .Edioga et al ., (2005); Kawale(2009); Koche et al .,(2010) and Koche (2011); Dhore M A,Naik V N investigated various phytochemicals present in the wild medicinal plants and relate them with medicinal potential of the plants .However, the plant needs further phytochemical and pharmacological study to develop useful drugs from the plant .

Table-1

Sr.no	Solvents	Alkaloids	Flavonoids	Phenol	Tannin	Phlobatannin	Saponnin	Carbo-hydrate
01	Chloroform	+	-	+	-	+	+	-
02	Methanol	+	-	-	-	-	-	+
03	Acetone	+	-	-	-	-	+	-
04	Petroliumether	+	+	-	-	-	-	+
05	AqueousExtract	+	+	+	+	-	+	+

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Dr. Ambedkar's contribution to Indian Economy

Prof.Dr.R.K. Shaikh
Shri Shivaji College, Akola

-: ABSTRACT :-

Dr.Ambedkar started his academic career as an eminent economist and contributed substantially for Indian economic planning and development. Dr.Ambedkar analyses his various economic ideas at various occasions in the constituent Assembaly and earlier as a serious student of economics. An important aspect of Dr.Ambedkar versatile personality does not, however seen to have attracted enough attention expecially in the light of his achivement that he was an eminent economist.

His economic ideas should be seen in the context that nearly one-third population of country, still live below the poverty line and substantial number of people are landles and the state must, therefore, continue to play dominant role to bring in economic equality. Dr.Ambedkar's economic thought stood for the progressive transfarmation of society, removing glaring social and economic equalities.

Dr. Ambedkar's most economic writings related to the pre-indepandence period, they reflect not only unique freshness but also his deep insights into the problems. He approached and examined the economic issues will such forsight that his analysis and treatment of some of is very much relevent even today. Ambedkar was among the first set of Indian's who were trained in economics systematically and practiced it professionally. It is because that Abmedkar received education abroad under some of the most eminent economists of the time. His contribution as an economists to the Indian economy has by and large remained unoticed. Various memoranda and statements that he submitted to the government (under the British rule as well as in the independent India) are indicative of his deep insight into Indias economic problems. He was probabaly the first thinker to analyse economic dimensions of social maladies of Indian economy. Ambedkar emphasized the eradication of poverty, elimination of inequalities and ending exploitation of masses, weaker secctions and dalits in particular. He prefered industrialization for absorbing surplus agricultural labour and land reforms to increase agriculture production. Ambedkar considered agricultural industry and gold standard for maintaining stability of the value of Indian currency, smooth centre-state relations for coordinated economic development and

state intervention for an orderly growth of the Indian economy. Thus Ambedkar's economics is a vivid combination of dalit, emancipation, socialism and nationalism. Thus Dr.Ambedkars economic ideas have influenced the process of Indian planning both explicitly and implicitly.

General problem of economy :-

It is universally acknowledged that the general problem of the Indian economy are indeed serious. Mountaining unemployment, rising number of poor people, growing social tensions, concentration of resources in the hands of a few, lack of proper distribution of income, negligible access of marginalized sections to public facilities, labour unrest, gender based discrimination, pitable living conditions of urban slum dwellers, S.C. and S.T., agriculture industry and lack of moral values are some of the issues of concern in our economy Dr.Ambedkar tried his best to raise these issues time to time on every platform. Record shows that with his academic knowledge of subject like economics, political science, constitution and law contributed to the evaluation of a development philosophy and stretegy of economic planning and development. His life and career were fully dedicated to key socio-economic issues which the nation is facing even today.

Conclusion :-

Dr. Ambedkar thus left the stamp of his scientific and rational outlook, his profound scholarship and essential human nature on emerging Indian's post war economic policy of the country. He had clearly expresed his views on several facets of planing and development after analysing the prevaling problems of the country. This would explain clearly the relevance of Dr. Ambedkar as an economist, economic planner and developer for the present and future. In brief the impact of economic planning and development of Dr. Ambedkar on Indian planning has been substancial and will continue to be so in the decades to come. He was indeed an architect of economic planning & development of the country.

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डॉ. बाबासाहेब आंबेडकर और सामाजिक लोकतंत्र

प्रा. डॉ. जीवन हं. पवार
(राजनितीविज्ञान प्रमुख)

स्वतंत्रता, समता, बंधुता और न्याय इस मानवी मुल्योकी समाज मे प्रस्तापना करना यह डॉ. बाबासाहेब आंबेडकर का उद्देश था । दलीतो को उनके न्याय हक दिलाने और उनमे गरीमा जागश्त करने के लिए अपने पुरे जीवन मे कार्यरत रहे । उनके कार्यमे दलीतो को न्याय हक के लिए लढनेवाला नेता और राष्ट्रवादी नेता इस दोनो भुमिकायोका समन्वय हुवा था । भारत जैसे देश मे समाज परीवर्तन करने की प्रक्रीया आसान नही है । इस बात का बाबासाहब को एहसास था । पर निर्धारि और विशेष प्रयत्नो व्दारा परिवर्तन करना आसान है । यह बाबासाहब के विचारो का सुत्र था । डॉ. बाबासाहेब आंबेडकर की लोकतंत्र पर आत्यंतिक निष्ठा थी । सब ाासनो के प्रकार मे लोकतंत्र शासन प्रणाली सर्वोत्तम है । सामाजिक परिवर्तन लाने के लिए लोकतंत्र एक उत्तम मार्ग है । व्यक्तीस्वतंत्रता का रक्षण भी लोकतंत्र मे होता है। विविध व्याख्यानो ग्रंथो मे उन्होने लोकतंत्र का विचार व्यक्त किया । अमेरीका और इग्लंड जैसे देशो मे डॉ बाबासाहब ने वास्तव्य रहा था परीनामत: पाश्चात्य उदारमतवादी विचारोका प्रभाव उन पर था । डॉ बाबासाहब कहते, ' जिस सरकार पध्दती मे लोगो का आर्थिक और सामाजिक जीवन मे क्रांतीकारक बदलाव रक्त न गिरते होता है वहा लोकतंत्र है ।

सामाजिक लोकतंत्र की संकल्पना

सामाजिक समता एवं सामाजिक न्याय पर आधारित लोकतंत्र का डॉ. बाबासाहब ने समर्थन कीया । लोगोका, लोगो के लिए, लोगोव्दारा चलाया गया शासन लोकतंत्र है। यह अब्राहम लिंकन व्दारा लोकतंत्र की परिभाषा प्रसिध्द है। डॉ बाबासाहब की लोकतंत्रकी संकल्पना इससे अलग है । वे कहते है की लोकतंत्र ऐसा शासन का प्रकार है या पध्दती है जीसमे लोगो के आर्थिक एवं सामाजिक जीवन मे क्रांतीकारक परीवर्तन रक्तपात न करते हुवे कर सकते है । यही लोकतंत्र की असली कसोटी है । ब्रिटेन के ससंदीय व्यवस्था जैसा लोकतंत्र भारत जैसे देश मे होना चाहीए क्योकी.

१) लोकतंत्र मे जनमत को अग्रक्रम रहता है ।

२) जनमत भ्रष्ट सरकाकरको सत्तासे हटा सकता है ।

३) सांसदिय लोकतंत्र व्यक्ती गुणोका विकास करता हे । तथा व्यक्ती का विशाल दश्ष्टीकोन बनता है ।

४) जिम्मेदारी का ऐहसास निर्माण करता है, शांततापुर्वक मार्ग से सरकार बदल सकते है ।

५) लोग अपनी शिकयते और दु:ख को विधीमंडळ मे और विधीमंडळ के बाहर प्रकट कर सकते है ।

७) भ्रष्ट सरकारके खिलाफ जनमत तयार कर सकते है ।

उपरोक्त बातोसे डॉ. बाबासाहब ने लोकतंत्रका समर्थन किया है। राजनितीक लोकंतत्र से संतुष्ट न रहते राजनीतीक लोकंतत्र को सामाजिक लोकतंत्रमे परीवर्तन करना चाहीऐ। राजनितीक लोकतंत्र की निव सामाजिक लोकतंत्र पर मजबुतीसे आधारीत हुवे बगर राजनितीक लोकतंत्र टिकता नही । पर सामाजिक लोकतंत्र क्या है? स्वतंत्रता, समानता और विश्वबंधुता यह तत्वोपर आधारीत जीवनमार्ग ही सामाजिक लोकतंत्र है । यह तीनो तत्वो को अलग अलग नही माना जा सकता । यह तीनो तत्वो से कोई भी एक तत्व को नजरअंदाज करना लोकतंत्र को सुरंग लगाने जैसा है । ऐसा प्रतिपादन डॉ. बाबासाहब ने किया है वह कहते है,

भारतीय समाज मे समानता नही होना यह लोकतंत्र की एक महत्वपुर्ण न्युनता है । भारत देश मे सामाजिक और आर्थिक विषमताए बहुत बडी है । इस कारण लोकतंत्र कि स्थापना करते समय हम सब एक दूसरेके विरोधी सामुदायिक जीवन जी रहे है । राजनिती मे सामाजिक समानता के तत्वो का स्विकार करते तो इसी समय सामाजिक और आर्थिक क्षेत्रोमे विषमताए अस्तित्व मे है । ऐसा परस्पर विसंगतीपुर्वक जीवन बहुत समय तक रहने से राजनितिक लोकतंत्रको खतरा पोहूच सकता है । इस विसंगती को हमे शिघ्रतासे दुर करना है । नही तो विषमता से पिडीत लोग संविधान सभा व्दारा निर्मित लोकतंत्र को उडा देंगे यह इशारा डॉ. बाबासाहब ने किया है ।

लोकतंत्रात्मक समाजरचना

लोकतंत्र प्रस्तापित करने के लिए समाजरचना आवश्यक है । समानता और बंधुता यह तत्वो को ऐसे समाज रचना मे महत्वपुर्ण स्थान है । इस दो उच्च तत्वो की प्राप्ती के लिए फ्रान्स मे क्रांती हुवी इस घटना का उल्लेख इतिहास मे है । एक विशीष्ट व्यक्ती या वर्ग को विशेष हक या सहुलीयत नही मिलेगी । सामाजिक लोकतंत्र की आवश्यकता व्यक्ती का स्तर जन्म के अलावा गुणो के आधारपर हो । व्यक्ती और समाजजीवन मे लोकतंत्रका माहोल होना आवश्यक है । बहुसंख्य समाज व्दारा अल्पसंख्याकोका शोषन और अन्याय हो यह बात लोकतंत्र के दायरे मे न बैठने वाली बात है । इसलीए सामाजिक लोकतंत्र की नितांत आवश्यकता है । लोकतंत्र के यशस्वीता के लिए सामाजिक लोकतंत्र प्रस्ताविक होता अत्यंत आवश्यक है । समानता समानता अर्थ एक जैसा अभिप्रेत नही है । समान दर्जा और सभी को समानता का अवसर उच्च अर्थ समानता छमू प्दजमतकपेबपचसपदंतल छंजपवदंस त्मेमंतबी श्रवनतदंस ३७ ल्मंत ऐजए ऐनम ऐज;डंतबी. ।नहनेजद्ध२०१२ का है । प्रत्येक व्यक्ती को कुछ अधिकार प्रत्याभुत करना अर्थहीन हो जाएगा । यही सामाजिक संरचना से समानता दुर नही की जाती है । जिसमे उसका सर्वोत्तम विकास हो सके तथा इन अधिकारो को प्रवश्त्त करने के साधन उसे प्रत्याभुत नही किए जाते है । समाजमे सभि वर्गो मे एकता और बंधुभाव रहना समाजहित मे है । मात्र इसके लिए राजनीतीक, आर्थिक और सामाजिक क्षेत्रो मे समानता प्रस्तापित होना आवश्यक है । अन्याय का मुल कारण सामाजिक विषमता है । अन्याय मे बढोत्तरी होने से समाज मे संघर्ष होगा और ऐसे संघर्षो से अशांतता अराजकता और अस्थीरता निर्माण होगी । परीनामस्वरूप लोकतंत्र को खतरा तयार हो सकता है । विषमताए दुर करना निसर्ग व्दारा कुछ विषमताए निर्माण हुवी है । और वह समाज को चलाने के लिए आवश्यक हो सकती है । पर मानव व्दारा निर्मित विषमताए बहुत खतरनाक है । विषमताए दुर करने के लिए समानता स्थापित करना आवश्यक है । ऐसी समानता कानून व्दारा निर्माण करने से अच्छा स्वयंस्पुर्त तरीके से दिलसे निर्माण होना आवश्यक है । सभी समाज मे ऐसी भावनाए निर्माण करने से सही अर्थोमे सामाजिक लोकतंत्र स्थापित हो सकता है । समाज का विशाल और उदार नजरीया लोकतंत्र के तत्वो का पठन करने से अच्छा उन तत्वो को समाज मे प्रसारीत करने की आवश्यकता है । एक दूसरेमे सहकार्य और सदभावना रहना चाहीऐ केवल कर्तव्य समजकर सहकार्य का उद्देश न रखते हुवे लोकतंत्र है यशस्वीता के लिए आकांक्षाए दिल से होना चाहीऐ । लोकतंत्र के यशस्वीता के लिए उदार और विशाल दश्ष्टीकोन का स्विकार करना आवश्यक है । स्तर और अवसर के लिए समानता निर्माण होना आवश्यक है । समाज के सभी आवश्यकता और हितसंबंधो मे तालमेल, होना सामाजिक लोकंतत्र के यशस्वीता के लिए आवश्यक है । डॉ. बाबासाहब कहते है, ' भारतीय राजनीती मे व्यक्तीपुजा का बहुत बडा प्रभाव है । अन्य देशो के राजनिती मे यह व्यक्तीपुजा नही दिखाई देती । धर्म मे भक्तीमार्ग मुक्तीका मार्ग बन सकता है पर राजनीतीमे भक्ती मार्ग अध:पतन और तानाशाही का निश्चीत मार्ग है । संविधानात्मक मार्ग का स्विकार

लोकतंत्र को दश्ढमुल करने के लिए सर्वसामान्य व्यक्ती को कानुनी मार्गो पर विश्वास होना आवश्यक है । न्यायालय अपने हको का रक्षन करते है । इस बात का यकीन लोगो को होना चाहिए । इसलीए डॉ. बाबासाहब ने न्यायालयो के स्वतंत्रता पर जोर दिया है । अपना न्याय विभाग कार्यकारी और विधीविभाग से स्वतंत्र होना चाहीए इस बात को आग्रहपूर्वक बताया है । इस तत्व को संविधान मे शामिल कीया गया । संविधान समितीने उन्होने कहा ' मंत्रीमंडल से ज्यादा न्यायविभाग को स्वतंत्रता होनी चाहीए । न्यायालय कीसी के लाभ और हानी की फिकर न करने हुवे अपने कार्य का अच्छी तरीकेसे कर सके । इसी उद्देशोसे सर्वोच्च न्यायालयो के न्यायाधिशोकी नियुक्ती करने का अधिकार राष्ट्रपती को है लेकीन न्यायाधिशो नियुक्ती करने समय सरन्यायाधिशोकी सलाह लेना अनिवार्य है । लोकतंत्र को प्रभावशाली बनाने का मार्ग लोकतंत्रकी कुछ हामिया है । भारत मे लोकतंत्र को प्रभावशाली बनाने के मार्ग डॉ. बाबासाहब ने बताये उनमे छमू प्दजमतकपेबपचसपदंतल छंजपवदंस त्मेमंतबी श्रवनतदंस ३८ ल्मंत ेजए ेप्नम ेज;डंतबी. ।नहनेजद्ध२०१२ प्रमुखतासे

१) भारतीय लोगो की निरक्षरता दुर करना ।

२) परंपरागत रूढी और अस्पश्श्यता का निर्मुलन करना ।

३) जाती व्यवस्था और अस्पश्श्यता को दुर करना ।

४) आर्थिक विषमता को नष्ट करना ।

५) सामाजिक विषमता को नष्ट करना और सहिष्णुता निर्माण करना ।

६) विभुती पुजा नष्ट करना ।

७) भेदाभेद दुर करना ।

८) प्रभावि विरोध पक्ष का निर्माण करना

९) पक्षीय हितोसे ज्यादा राष्ट्रीय हितो पर खयाल देना ।

१०) संविधानिक मार्गो पर विश्वास दिलाना ।

११) उच्च स्तरका चारीव्म्य निर्माण करना ।

१२) व्यक्ती स्वातंत्रता और सदविवेक बुध्दी को लोकतंत्र का आधार मानना ।

१३) मंत्रीमंडळ मे अल्पसंख्याकको के प्रतिनीधी लेना ।

१४) राष्ट्रप्रेम की भावना भारतीयो से जागश्त करना ।

१५) अनाचार, भ्रष्ट्राचार यादी दुर्गुनो को कही स्थान नही देना । उनका विरोध करना

१६) सामाजिक और आर्थिक राजनितीक विषमता को नष्ट करना ।

डॉ. बाबासाहब कहते है, ' घटना मिली, स्वतंत्रता मिली तो अभि कुछ समाप्त नही हुआ । लोकतंत्र का यह वश्क्ष कोनसे भी मिट्टी मे नही बढता इसके लिए आवश्यक है लोकतंत्रीक मुल्यो के प्रति जागरूकता और उन मुल्यो का अहासास होना चाहिये ।

सारांश

शासन व्यवस्था, मानवी हक पक्ष प्रणाली लोकतंत्र के यशस्वीता के लिऐ आवश्यक स्थिती और भारत के स्थितीयो का अध्ययन डॉ. बाबासाहेब मे चिकीत्सक पुर्वक किया है । इनकी सांसदीय लोकतंत्र पर श्रध्दा थी । सामाजिक समानता और न्याय को उन्होने महत्व पुर्ण स्थान दिया सामाजिक परीवर्तन क्रांतीकार होना चाहिये । पर उसका मार्ग हिसंक नही होना चाहिए। लोकतंत्र मे संविधानात्मक और शांततापुर्वक मार्गोसे परीवर्तन किया जा सकता है । परीणामत: सामाजिक एवं आर्थिक विकास के प्रगती मे रूकावटे या सकती है । सामाजिक स्थिरता और व्यक्तीत्वके विकास के लिए लोकतंत्र आवश्यक है । स्वतंत्रता समानता बंधुता और न्याय इस तत्वो पर आधारीत शौषन से मुक्त व्यक्तीयो को प्रतिष्ठा का खुद रक्षण करनेवाला नैतिकता रखने वाला समाज बनाना सही लोकतंत्र प्रस्तापना है । समाज व्यवस्था मे बदलाव लाना चाहीये, छमू प्दजमतकपेबपचसपदंतल छंजपवदंस त्मेमंतबी श्रवनतदंस ३९ ल्मंत ेजए ेप्नम ेज;डंतबी. ।नहनेजद्ध२०१२ प्रगत यंत्र विद्या और सुधारणा इससे होनेवाले लाभ केवल कुछ गिने चुने लोगो को न मिलते हुवे सभि को मिलना चाहीए । मानवी समाज का ध्येय मानव को सुसंस्कृत और सुस्थित जीवन जीवन जीने के लिए समर्थ करने

वाला होना चाहिए । वह जीवन उसे जीने की आजादी होनी चाहिए । मानवी भावनाओ का सुसंस्कश्तीकरन करना यह उच्च ध्येय लोकतंत्र का होना चाहीए । क्योकी व्यक्ती केवल रोटी पर नही जीता उसे भी भावनाए है । लोकतंत्र के माध्यमसे भारतीयोमे स्वाभिमान स्वावलंबन, और आत्मोध्दार निर्माण करने की प्रेरणा डॉ. बाबासाहब आंबेडकरने जनसामान्यो प्रदान की है ।

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"भारतातील सामाजिक, सांस्कशतिक, संदर्भातून स्त्रीभ्रूणहत्या''

सहा.प्रा. मुरलीधर बी. रेवतकर
आठवले समाजकार्य महाविद्यालय, चिमूर जि. चंद्रपूर

प्रस्तावना :-

भारतीय इतिहासाची सुरूवात ही वैदीक काळापासून होते. वैदीक काळात स्त्रीयांचे स्थान अतिशय गौरवपूर्ण होते. त्याकाळी मुलाप्रमाणे मुलींचीही उपनयन विधी होत असे. वैदीक वाड:याच्या उत्तर काळात स्त्रियांचे दोन वर्ग मानले जात.सध्योद्धाहा व ब्रम्हवादिनी सध्योद्धाहा या शब्दाने विवाह होईपर्यंत अध्ययन करण्याऱ्या तरूंणीचा बोध होता.तर ब्रम्हवादिनी या वर्गात अविवाहीत राहून अखंड ज्ञानोपासना करणाऱ्या विदुषी स्त्रियांचा समावेश होत होता. त्या गार्गी मैत्रीय सुलभा इ. स्त्रियांचा समावेश होतो. वैदीक काळातीन अध्ययनाबाबत स्त्री पुरूषात मुळीच भेद केला जात नसे. म्हणूनच त्या काळात अनेक स्त्रीयां तत्वज्ञ, शिक्षक व वादविवाद पटू होत्या. परंतू आजच्या स्त्रीची अशी दैनावस्था का? घराला घरपण देण्यात स्त्रीचा सिंहाचा वाटा असतो. दोन्ही कुळाचा उद्धार करणारी म्हणून आपण तिच्याकडे आदराने पाहतो. तिला आदिशक्तीची उपमाही देतो. आणि त्याचा स्त्रीला आपण जन्माआधिच मारून टाकतो. का? मुलगा वंशाचा दिवा परंतू वंशाच्या दिव्याला जन्माला घालणारी ही सुद्धा एक स्त्रीच असते. हे आपण का विसरतो.मुलगी तापदायक, मुलगा कुलदिपक ही मानसिकता आज दिसून येते. मुलगी होताच सर्वांचे चेंहरे पडलेले असतात.

इंग्रजाच्या गुलामगीरीतून देश मुक्त झाला. परंतू पित्रुसत्ताक पद्धती रूढ असल्यामुळे स्त्री ही पुरूषाच्या गुलामगीरीतून मुक्त झालेली नाही. तिच्याकडे पाहण्याचा दशष्टीकोन भोगवादी असाच आहे. स्त्री भ्रुण हत्या या शब्दाचा अर्थ माहीत नसणारा माणूसही सोनोग्राफी सेंटरमध्ये जाऊन कन्यागर्भ असल्यास बाईला मोकडे करून आणतो. या शिवाय एकाच घरात मुलगा व मुलगी हे दोन्ही जन्माला आले तर मुलांना वेगळी वागणूक व मुलींना वेगळी वागणूक. मुलगी हे परक्याचे धन आहे डोक्यावरचे ओझे आहे अशाप्रकारे जन्मदातेच तिची हेडसांड करतांना दिसतात.

'नैसर्गीक रितीने जन्माला येणाऱ्या स्त्रीलींग भ्रूणास अनैसर्गीक, कशत्रिम रितीने स्वत:च्या निर्णयाने भ्रूणावस्थेतच घातलेला प्रतिबंध म्हणजे स्त्रीभ्रूणहत्या होय'

अध्ययनाचे उद्देश

१) जागतिक पातळीवरील स्त्रीपुरुष गुणोत्तराचे अध्ययन करणे.

२) स्त्रीभ्रूणहत्येतून निर्माण होणाऱ्या लिंगीय असमानतेचे अध्ययन करणे.

३) स्त्रीभ्रूण हत्येस जबाबदार घटकाचे अध्ययन करणे.

४) स्त्रीभ्रूणहत्येमुळेसमाजात निर्माण होणाऱ्या सामाजिक, सांस्कशतिक समस्यांचे अध्ययन करणे.

अध्ययन पद्धती

प्रस्तूत शोध निबंधामध्ये स्त्रीभ्रूणहत्येकरीता कारणीभुत घटक, त्यातून निर्माण होणारी सामाजिक असमानता व समाजावर होणारे परीणाम व त्यावरील उपाययोजना इत्यादीचे वर्णन करावे लागते. म्हणून वर्णनात्मक व निदानात्मक संशोधन आराखडयाचा अवलंब केला आहे.

तथ्य संकलन :-

प्रस्तूत शोध निबंधासाठी तथ्य संकलनाकरीता लिखित अहवाल ग्रंथ, मासिके, संकेत स्थळ, दैनंदिन वर्तमानपत्रे यांचा आधार घेतलेला आहे.

सारणी

जागतिक स्त्रीपुरूष प्रमाण (२०११) दर्शविणारी सारणी

रशिया	११६५	ऑस्टेलिया	१०११
फ्रान्स	१०५६	इथिओपिया	१०१०
जपान	१०५४	इंडोनेशिया	१००३
जर्मनी	१०३८	नायझेरीया	९९५
यू.के. (इंग्लंड)	१०३७	मलेशिया	९७०
ब्राझील	१०३१	इरान	९६८
अमेरीका	१०२६	भारत	९४०
कोरीया	१०२०	चिन	९२७
सौदेअरेबिया		९२७	

उपरोक्त सारणीवरून असे निदर्शनास येते की, २०११ च्या जनगणनेनुसार जगामध्ये सर्वाधिक स्त्रीयांचे प्रमाण रशियात असून त्या खालोखाल फ्रान्स या देशाचा नंबर लागतो. त्यानंतर इतर देशांचा नंबर लागतो.

(लोकराज्य मासिक सप्टेंबर २०११ पेज नं. ३४)

निष्कर्ष :- उपरोक्त सारणीवरून असा निष्कर्ष निघतो की, जागतीक पातळीवर स्त्रीयांचे प्रमाण ९८४ असले तरी भारतामध्ये हे प्रमाण खुपच कमी असून ते ९४० एवढे आहे. ही बाब भारताच्या दशष्टीने फारच चिंतेची आहे.

सारणी

भारताची २००१ व २०११ ची राज्यनिहाय लिंग गुणोत्तर दर्शविणारी सारणी

अ.क्र.	भारत/राज्यकेंद्रशासित प्रदेश	लिंग गुणोत्तरदर हजार पुरूषामागे २००१			लिंग गुणोत्तरदर हजार पुरूषामागे २०११		
	भारत एकूण १०००० पुरूषामागे महिला	एकूण९३३	ग्रामीण९४६	शहरी९००	एकूण९४०	ग्रामीण९४७	शहरी९२६
१	जम्मू - काश्मिर	८९२	९१७	८१९	८८३	८९९	८४०
२	हिमाचल प्रदेश	९६८	९८९	७९५	९७४	९८८	८५६
३	पंजाब	८७६	८९०	८४९	८९३	९०६	८७२
४	चंदिगढ	७७७	६२१	७९६	८१८	६९१	८२१
५	उत्तराखंड	९६२	१००७	८४५	९६३	१०००	८८३
६	हरीयाना	८६१	८६६	८४७	८७७	८८०	८७१
७	दिल्ली	८२१	८१०	८२२	८६६	८४७	८६७
८	राजस्थान	९२१	९३०	८९०	९२६	९३२	९११
९	उत्तरप्रदेश	८९८	९०४	८७६	९०८	९१४	८८८
१०	बिहार	९१९	९२६	८६८	९१६	९१९	८९१
११	सिक्कीम	८७५	८८०	८३०	८८९	८८३	९०८
१२	अरूनाचलप्रदेश	८९३	९१४	८१९	९२०	९२९	८८९
१३	नागालॅड	९००	९१६	८२९	९३१	९४२	९०५

१४	मनिपूर	९७४	९६३	१००९	९८७	९६६	१०३८
१५	मिझोरम	९३५	९२३	९४८	९७५	९५०	१०००
१६	त्रिपुरा	९४८	९४६	९५९	९६१	९५६	९७६
१७	मेघालय	९७२	९६९	९८२	९८६	९८३	९९७
१८	आसाम	९३५	९४४	८७२	९५४	९५६	९३६
१९	पश्चिम बंगाल	९३४	९५०	८९३	९४७	९५०	९३९
२०	झारखंड	९४१	९६२	८७०	९४७	९६०	९०८
२१	ओडिसा	९७२	९८७	८९५	९७८	९८८	९३४
२२	छत्तीसगढ	९८९	१००४	९३२	९९१	१००२	९५६
२३	मध्य प्रदेश	९१९	९२७	८९८	९३०	९३६	९१६
२४	गुजरात	९२०	९४५	८८०	९१८	९४६	८८०
२५	दमण दिव	७१०	५८६	९८४	६१८	८६७	५५०
२६	दादरा नगर हवेती	८१२	८५२	६९१	७७५	८६३	६८४
२७	महाराष्ट्र	९२२	९६०	८७३	९२५	९४८	८९९
२८	आंध्रप्रदेश	९७८	९८३	९६५	९९२	९९५	९८४
२९	कर्नाटक	९६५	९७७	९४२	९६८	१७५	९५७
३०	गोवा	९६१	९८८	९३४	९६८	९९७	९५१
३१	लक्षद्विप	९४८	९५९	९३५	९४६	९५४	९४४
३२	केरळ	१०५८	१०५९	१०५८	१०८४	१०७७	१०९१
३३	तामिळनाडू	९८७	९९२	९८२	९९५	९९३	९९८
३४	पॉण्डेचरी	१००१	९९०	१००७	१०३८	१०२९	१०४३
३५	अंदमान निकाबार बेट	८४६	८६१	८१५	८७८	८७१	८९१

(लोकराज्य मासिक सप्टेंबर २०११ पेज नं. २१)

उपरोक्त सारणीवरून असे निदर्शनास येते की, २००१ च्या जनगणनेत भारतातील महिलांचे प्रमाण एक हजार पुरूषामागे ९३३ इतके होते ते २०११ च्या जनगणनेत ७ पॉईन्ट ने वाढून ९४० इतके झाले आहे. २००१ च्या जनगणणेच्या तुलनेत २०११ मध्ये ग्रामीन भागातील महिलांची संख्या ९४६ वरून ९४७ इतकी झाली आहे. तर शहरी भागात ही वाढ ९०० वरून ९२६ इतकी झाली आहे. देशात केरळ राज्य सर्वात वरच्या स्थानावर असून तिथे१ हजार पुरूषामागे १०८४ स्त्रिया आहेत. ग्रामीण भागात महिलांचे प्रमाण १०७७ आणि शहरी भागात हे प्रमाण १०९१ आहे.

चंदीगडच्या ग्रामीण भागात ६९१ इतके कमी प्रमाण स्त्रीयांचे आहे. दमन आणि दिव मध्ये नागरी भागात लिंग गुणोत्तर देशात सर्वात कमी असून ९५० इतके आहे.

देशातील आठ राज्यांनी लिंगीय गुणोत्तरात ग्रामीण भागात घट दर्शविलेली असून यामध्ये जम्मू काश्मिर, हिमाचल प्रदेश, उत्तराखंड,बिहार, झाारखंड, छत्तीसगड , महाराष्ट्र, कर्नाटक आणि लक्षद्धिप या केंद्रशासित प्रदेशाचा समावेश आहे. तर दादरा नगर हवेली या केंद्रशासित प्रदेशानेही नागरी भागात स्त्रियांच्या प्रमाणात घट दर्शविली आहे.

उपरोक्त सारणीवरून असा निष्कर्ष निघतो की, २००१ च्या जनगणनेच्या तुलनेत जरी स्त्रियांच्या संख्येत वाढ होण्याची आंशिक लक्षणे जरी दिसून आली तरी ही वाढनगण्य स्वरूपाची असून आज घडीस १ हजार पुरूषामागे ६० महिलांची कमी दिसून येते. त्याच बरोबर साक्षरतेचे प्रमाण मात्र स्त्रीभ्रूणहत्येस कमी करण्यास उपयुक्त घटक आहे हे केरळ राज्याच्या लिंगीय गुणोत्तरावरून सिद्ध होते. केरळ राज्यात भारतात सर्वात जास्त साक्षरतेचे प्रमाण जास्त असल्यामुळे स्त्रीयांची संख्या पुरूषापेक्षाजास्त दिसून येते.

सारणी

भारताची २००१ व २०११ ची राज्यनिहाय बालकांचे (० ते ६ वर्षवयोगटातील) लिंगीय गुणोत्तर दर्शविणारी सारणी

अ.क्र	भारत/राज्य केंद्रशासित प्रदेश	लिंग गुणोत्तराचे प्रमाण दर १ हजार मुलामागे २००१			लिंग गुणोत्तराचे प्रमाण दर १ हजार मुलामागे २०११		
०	**भारत एकूण**	**एकूण**	**ग्रामीण**	**शहरी**	**एकूण**	**ग्रामीण**	**शहरी**
	१००० पुरूषामागे महिला	**९३३**	**९४६**	**९००**	**९४०**	**९४७**	**९२६**
१	जम्मू - काश्मिर	९४१	९५७	८७३	८५९	८६०	८५४
२	हिमाचल प्रदेश	८९६	९००	८४४	९०६	९०९	८७८
३	पंजाब	७९८	७९९	७९६	८४६	८४३	८५१
४	चंदिगढ	८४५	८४७	८४५	८६७	८६२	८६७
५	उत्तराखंड	९०८	९१८	८७२	८८६	८९४	८६४
६	हरीयाना	८१९	८२३	८०८	८३०	८३१	८२९
७	दिल्ली	८६८	८५०	८७०	८६६	८०९	८६८
८	राजस्थाान	९०९	९१४	८८७	८८३	८८६	८६९
९	उत्तरप्रदेश	९१६	९२१	८९०	८९९	९०४	८७९
१०	बिहार	९४२	९४४	९२४	९३३	९३५	९०६
११	सिक्कीम	९६३	९६६	९२२	९४४	९५२	९१७
१२	अरूनाचलप्रदेश	९६४	९६०	९८०	९६०	९६४	९४४
१३	नागालॅड	९६४	९६९	९३९	९४४	९३२	९७९
१४	मनिपूर	९५७	९५६	९६१	९३४	९२९	९४५
१५	मिझोरम	९६४	९६५	९६३	९७१	९६६	९७८
१६	त्रिपुरा	९६६	९६८	९४८	९५३	९५५	९४५
१७	मेघालय	९७३	९७३	९६९	९७०	९७२	९५७
१८	आसाम	९६५	९६७	९४३	९५७	९५७	९५५
१९	पश्चिम बंगाल	९६०	९६३	९४८	९५०	९५२	९४३
२०	झारखंड	९६५	९७३	९३०	९४३	९५२	९०४
२१	ओरिसा	९५३	९५५	९३३	९३४	९३९	९०९
२२	छत्तीसगढ	९७५	९८२	९३८	९६४	९७२	९३२
२३	मध्य प्रदेश	९३२	९३९	९०७	९१२	९१७	८९५
२४	गुजरात	८८३	९०६	८३७	८८६	९०६	८५२
२५	दमण दिव	९२६	९१६	९४३	९०९	९२५	९०३
२६	दादरा नगर हवेती	९७९	१००३	८८८	९२४	९६१	८७८
२७	महाराष्ट्र	९१३	९१६	९०८	८८३	८८०	८८८
२८	आंध्रप्रदेश	९६१	९६३	९५५	९४३	९४२	९४६
२९	कर्नाटक	९४६	९४९	९४०	९४३	९४५	९४१
३०	गोवा	९३८	९५२	९२४	९२०	९२४	९१७
३१	लक्षद्विप	९५९	९९९	९००	९०८	८८८	९१५
३२	केरळ	९६०	९६१	९५८	९५९	९६०	९५८
३३	तामिळनाडू	९४२	९३३	९५५	९४६	९३७	९५७
३४	पॉण्डेचरी	९६७	९६७	९६७	९६५	९५७	९६९
३५	अंदमान निकाबार बेट	९५७	९६६	९३६	९६६	९७५	९४७

(लोकराज्य मासिक सप्टेंबर २०११ पेज नं. २२)

उपरोक्त सारणीवरून असे निदर्शनास येते की, २००१ च्या जनगणनेनुसार १ हजार मुलामागे देशात ९२७ मुली होत्या त्यात ग्रामीण भागात ९३४ मुली तर शहरी भागात मुलीचे प्रमाण ९०६ इतके होते. २०११ मध्ये १ हजार मुलामागे मुलीचे प्रमाण कमी होवून ९१४ इतके झाले आहे. यात ग्रामीण भारतातील प्रमाण ९१९ तर शहरी भारतातील प्रमाण ९०२ इतके आहे.

उपरोक्त सारणीवरून असा निष्कर्ष निघतो की, २००१ च्या जनगणनेत मुलींच्या संख्येत लक्षणिय घट झालेली आहे या घटीला आधुनिक सोनोग्राफी सेंटर, गर्भजल परीक्षण, या तंत्राचा फार मोठा वाटा या घटकामध्ये आहे. मुलींच्या प्रमाणामध्ये अशीच घट कायम राहीली तर समाजाचे संतूलन ढासळून अनेक समस्या निर्माण होतील.

स्त्रीभ्रूणहत्येस जबाबदार घटक

१) मुलगा वंशाचा अघोषित दिवा असल्यामुळे स्त्रीभ्रूणाची हत्या केली जाते.

२) संपत्तीचा वारसा सुरक्षित रहावा म्हणून मुलगाच पाहीजे ही धारणा स्त्रीभ्रूण हत्येस जबाबदार आहे.

३) मुलांनी पिंडदान केल्यास मोक्ष मिळतो ही धारणा स्त्रीभ्रूणहत्येस जबाबदार आहे.

४) शैक्षणिक मागासलेपणामुळे मुलगा व मुलगी यांच्यात भेद करून स्त्रीभ्रूण हत्या केली जाते.

५) मुलींच्या शिक्षणाकरीता होणारा खर्च अनुत्पादक आहे म्हणून

वरील प्रमाणे सामाजिक सांस्कशतिक, शैक्षणिक, कौटूंबिक घटक स्त्रीभ्रूंण हत्येस जबाबदार आहे.

स्त्रीभ्रूणहत्येतूननिर्माण होणाऱ्या सामाजिक समस्या

१) पुरूषांच्या संख्येत वाढ होईल :- स्त्रीयांची संख्या कमी झाल्यामुळे एक स्त्री एक पुरूष हे समानतेचे गुणोत्तर नष्ठ होवून पुरूषांच्या संख्येत वाढ होवून सामाजिक समतोल कोलमडेल.

२) पुरूष समलैगींक सबंधात वाढ होवून अनैसर्गीक पद्धतीरुढ होईल.

३) मातश्सत्ताक व बहूपती पद्धती चा उदय

४) गुन्हेगारीत वाढ :- बलात्कार, कॉलगर्ल, वेश्याव्यवसाय यात वाढ होईल.

स्त्रीभ्रूणहत्येतून निर्माण होणाऱ्या सांस्कशतिक समस्या ोस्त्री ही सांस्कशतिक स्त्रोत आहे. :-

गर्भावस्थेपासून बाल्यावस्था, तारूण्यावस्था, युवा, प्रौढ या सर्व अवस्थेत स्त्रीचा वाटा हा सगळयात जास्त पुरूषांच्या आयुष्यात असतो. सगळयात महत्वाचा म्हणजे पुरूषाच्या आयुष्याचा सर्वांत जास्त वेळ हा स्त्री सोबत जातो. माणसाच्या आयुष्यात स्त्री हा प्रमुख घटक असते. व तीच खऱ्या अर्थाने संस्कशतिचे स्त्रोत आहे. कारण प्रत्येक सांस्कशतिक घटकाबाबत स्त्रीच पुरूषाला जाणीव करून देत असते. स्त्री भ्रूणहत्येमुळे सबंधित बाबीवर अनिष्ठ परीणाम झाल्याशिवाय राहणार नाही. हे खालील घटकावरून सिद्व होते.

अ) खानपान :- स्त्री मग ती आई, बहिन, मुलगी इत्यादी हाच घटक कुटूंबातील खानपान निश्चित करत असतो. कोणत्या दिवशी काय खायचे कोणत्या सनाच्या दिवशी कोणते पदार्थ खायचे व काय वर्ज करायचे हे स्त्री या घटकामुळेच ठरते. पुरूषमात्र बिनधास्त कुठेही व कधिही नको ते खाण्याचा प्रयत्न करतो. परंतू त्याला खाणपानाचे स्मरण करून देण्याचे कार्य स्त्री करत असते. स्त्री भ्रूणहत्येमुळे सबंधित घटकावर सुद्धा परीणाम पडेल.

ब) पोशाख :- पोशाख कोणता परीधान करायचा हे लहानपणापासून आईच्या रूपात बहिनीच्या रूपात तर तरूणपणी पत्नी व प्रेयसीच्या रूपात स्त्री हा घटकच आपल्याला सांगत असतो. स्त्री भ्रूणहत्येमुळे सबंधित घटकावर सुद्धा परीणाम पडेल.

क) सण उत्सव :- कुठलाही सण, उत्सव कुटूंबात कसा साजरा करायचा, हया गोष्टी ठरवायचे कार्य सुद्धा स्त्रीच करत असते. स्त्रीभ्रूणहत्याचे प्रमाण वाढल्यामुळे या सांस्कशतिक घटकावर सुद्धा परीणाम होतो.

क) नातेदारी व्यवस्था :- बरेचदा पुरूष हा नैमत्तीक नाते जोपासतो परंतू नात्याचे संगोपण करण्याचे कार्य ही स्त्रीच करत असते. सगळया नात्यांना प्रेम, ममता व जिव्हाळयाची, उब देणारी स्त्रीच असते. तीच्या मुळेच बहुतांश नाते जोपासले जाते. स्त्री भ्रूणहत्येमुळे सबंधित घटकावर सुद्धा परीणाम पडेल.

ड) व्रतवैकल्य :- भारतीय संस्कश्तीत व्रतवैकल्याला महत्वाचे स्थान आहे. यामुळेच मानसाच्या मनाला दिशा

निर्देश मिळत असते. व वाईट विचाराची होळी होत असते. ही व्रत वैकल्य मानसाला कारायला लावणारी स्त्रीच असते. व त्यामुळे व्यक्तिचे वर्तन नियंत्रीत होऊ शकते. परंतू स्त्रीभ्रूणहत्याचे प्रमाण वाढल्यास यात बदल घडून येतील व समाजात अशा असांस्कशतिक घटकाकडे समाजाचा कल वाढेल.

इ) मानसिक आधार :- पुरूषाला मानसिक आध ाराची आयुष्यात खुप गरज असते. अनेक असे प्रसंग ओढवतात की, ज्या प्रसंगी माणूस कोलमडण्याची शक्यता असते. परंतू स्त्रीच्या मानसिक आधारामुळेच माणूस पुन्हा उभा राहतो. हे महत्वाचे कार्य सुद्धा स्त्रीच करू शकते. मग ती आई, बहिन, वहीनी, पत्नी इत्यांदी रूपात का असेना? हया आधारावर सुद्धा आघात होऊ शकतो.

फ) नश्त्य, कला, अभिनय क्रिडा गायन इत्यादी सांस्कशतिक क्षेत्रातील स्त्रीचे योगदान हे खूप मोलाचे आहे. काही नश्त्य हे स्त्रीया साठीच बनलेले आहे. याचा अर्थ स्त्रीयांचा सांस्कशतिक वाटा किती मोलाचा आहे हे सगळयांच्या लक्षात येईल. परंतू स्त्रीभ्रूणहत्येमुळे या सगळया गोष्टींना समाजाला पारखे व्हावे लागेल.

उपाययोजना

१) मुलींना संपूर्ण शिक्षण मोफत दिले पाहीजे.

२) खाजगी सोनोग्राफी सेंटर बंद करायला पाहीजे.

३) सरकारी सोनोग्राफी सेंटर उच्च पातळीवरील उच्च अधिकार प्राप्त वैद्यकीय पातळीवरील समुहाच्या चमुशी संगणकीय जाळयाने (ऑनलाईन) जोडली पाहीजेत. यामुळे एका ठिकाणी होणाऱ्या सोनोग्राफीचे इतर तज्ञ मंडळी निरीक्षण करू शकेल. ज्यामुळे वैद्यकिय मंडळींना सांकेतिक

भाषेत मुलगा वा मुलगी यापैकी गर्भात काय आहे हे सांगणे कठिण होईल.

४) कुठल्याही वैद्यकीय कारणाने गर्भपात करायचाच झाल्यास एक न्यायीक प्राधिकरण असले पाहीजे ज्यात दोन विशेषित वैद्यकीय अधिकारी एक न्यायाधिश व दोन उच्च शिक्षित महिला, सामाजिक कार्यकर्त्या यांचा समावेश असला पाहीजे. व यांच्या सिफारशीनेच मंजूरी दिल्यास गर्भपात केला पाहीजे व त्याचे योग्य व पारदर्शक रेकार्ड सुद्धा ठेवायला पाहीजे.

५) महिलांना घटनेने दिलेला समान न्याय व अधिकार या गोष्टींची नेहमीच जाणीव ठेवायला पाहीजे.

संदर्भ ग्रंथ

१) आगलावे डॉ. प्रदिप
संशोधन पद्धती शास्त्रे व तंत्रे
विद्यापीठ प्रकाशन, नागपूर

२) गुप्ता डॉ. मंजू-गुप्ता डॉ.
स्त्रीभ्रूणहत्या ओर महिलाए
अर्जुन पब्लीकेशिंग हाऊस नवी दिल्ली २००९

३) लोटे रा. ज.
भारतातील सामाजिक समस्या
पिंपळापूरे ॲड कंपणी पब्लीशर्स नागपूर

४) मेश्राम प्रा. सुरेश
प्रात्यक्षिक, सामाजिक संशोधन
ऋषिकेश प्रिंट प्रोसेस नागपूर

५) दैनिक वर्तमानपत्रे
देशोन्नती (उंबरठा)
लोकशाही वार्ता
मंगळवार दि. ११ सप्टेंबर २०१२
गुरूवार दि.६ सप्टेंबर २०१२
सुनिता चौधरी यांचा लेख
देशोन्नाती
पुरोगाम्याच्या लेकी नकोशा झाल्या लेकी
दि. ८ जूलै २०१२)
मुळे डॉ. संजीवनी

६) मासिके
लोकराज्य सप्टेंबर २०११
२ सप्टेंबर २०११

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जी. ए. स्त्रीप्रधान कथेतील स्त्रीपात्रे

नरेंद्र ईष्वर घरत
सहा. प्राध्यापक (मराठी विभाग) श्री. बिंझाणी नगर महाविद्यालय, नागपूर

(निवडक कथांच्या संदर्भात)

प्रस्तावना:-

आधुनिक मराठी कथेच्या क्षेत्रात गुरुनाथ आबाजी कुलकर्णी उर्फ जी.ए. यांचे नांव महत्वपूर्ण मानले जाते. जी.एं. चे साहित्य एखाद्या सागरासारखे विस्तीर्ण असे आहे. पण नवकथाकारांच्या पिढीतील गंगाधर गाडगीळ, अरविंद गोखले, पु.भा. भावे, व्यंकटेश माडगूळकर, वामनराव चोरघडे यांच्या नवकथेपेक्षाही प्रभावी अशी कथा लिहून मराठी कथाविश्वात त्यांची कथा 'मैलाचा दगड' ठरली. जी.एं. चे एकूण अकरा कथा संग्रह प्रसिध्द आहेत. निळासावळा, पारवा, हिरवेरावे, रक्तचंदन, काजळमाया, सांजशकुन, रमलखुणा, पिंगळावेळ, कुसुमगुंजा, सोनपावलं आणि डोहकाळीमा (निवडक कथांचा संग्रह संपा.म.द. हातकणंगलेकर) या सर्वच कथासंग्रहातून जी. ए.ची जीवनदश्शटी दिसून येते. जी.एं.च्या जीवदश्शटीचे घटक म्हणजे शोकात्मता, अर्थशून्यता, परात्मता, असंबंध दता व मूल्यात्मकता हे होय. या त्यांच्या व्यापक जीवनदश्शिटकोनातून लिहिलेली कथा ही नव्या-जुन्या कालप्रवाहाच्या आणि विविध साहित्य प्रकार व साहित्यप्रवाह यांच्या संगमावर उभी असलेली कथा वाटते. जी.एं.नी मराठी कथेला एका असामान्य उंचीवर नेले. आपल्या व्रतस्थ प्रतिभाशाली लेखनाने मराठी कथेत मानदंड निर्माण केला. या त्यांच्या कथालेखनासंदर्भात सं.त्र्य. कुल्ली म्हणतात, ''व्यापक जीवनदर्शन, भव्य आणि उदात्त आशय, विचारांची झेप, भावनोत्कटता, अभिनव प्रतिमासश्शटी आणि असामान्य भाशाप्रभुत्व या वैशिश्टयामुळे जी.एं.ची कथा त्यांच्या समकालीनांमध्ये सर्वश्रेश्ठ ठरली. इतकेच नव्हे तर मराठी कथेचा मानदंड ठरली.''[१] (कुल्ली सं.त्र्य. 'आशयवेध' विजय प्रकाशन-नागपूर, प्र.आ.१९९७ पश्ठ क्र. ११९) जी.ए. च्या कथेत एकूणच मानवी जीवनाच्या अर्थशून्यतेबरोबरच जीवनातील, समाजातील भीशणता कथा वाचतांना प्रत्ययास येते. त्यांनी आपल्या कथांतून शारीरिक आणि मानसिक, भौतिक आणि आध्यात्मिक अशी विविध पातळयांवरील दु:खे रंगविलेली आहेत. व्यंग आणि वेड,विकश्ती आणि वांझपणा, दारिद्रय आणि भूक, अपयश आणि वैफल्य, पराभव आणि निराशा, भ्रम आणि वंचना, दु:खाची अटळता आणि जीवनाची बद्धता यातून जी.एं.च्या कथाविश्वात 'मूक मानवी वेदनाचा' मूलाकार प्रकट झाला आहे.

जी.एं. च्या जीवनदश्शटीत दु:ख, मश्त्यू, उदासीनता हे घटक महत्वपूर्ण असल्यामुळे त्यांची अनेक पात्रे अशिक्षित, सामान्य, जरी असली तरी ती दु:खामुळे असामान्य ठरतांना दिसतात. जी.एं.नी आपल्या कथासंग्रहात पुरुशप्रधान कथा ज्याप्रमाने लिहिलेल्या आहेत त्याचप्रमाणे त्यांनी स्त्रीप्रधान कथा सुध्दा लिहिलेल्या आढळतात. या लेखात स्त्रीप्रधान कथेतील स्त्रीपात्रांचा विचार करण्याचे ठरविलेले आहे.

स्त्रीपात्रचित्रण:-

जी.एं.नी रंगविलेली कथेतील पात्र जिवंत वाटतात इतकी त्यांच्या लेखनशैलीची ताकद आहे. जी. एं. कुलकर्णी कथेतील पात्राचे चित्रण असे आगळेवेगळे कसे करु शकतात हे त्यांच्या स्त्रीपात्रांच्या सहाय्याने समजने सोपे जाईल.त्यांची स्त्रीपात्रे वैश्विक वाटावी अशी अद्भूत रेखाटणे त्यांच्या कथेत आलेली आहेत.
जी.एं. नी आपल्या कथेत चित्रित केलेली बहुतेक स्त्रीपात्रे समाजाकडून, कुटुंबाकडून उपेक्षिली जातात. त्यांना समाजात इतर माणसांसारखे स्थान नाही. 'राधी' सारखे

पात्र समाजाच्या उपेक्षेतून आपले जीवन जगत राहते. 'शलॉट' मधील 'काशी' आपल्या सरडयासारख्या पायामुळे स्वत:च्या बापाकडून उपेक्षिली जाते. काशीच्या प्रखर जाणीवा,भावना,इच्छा,जी.एं. अगदी तपशीलवार 'शलॉट' या कथेत रेखाटतात. आपण खरे कुरुप आहोत आपले पाय सरडयासारखे आहेत ही जाणीव तिला खिन्न आणि एकटे करुन टाकते. आयुश्यभर काशीच्या बाप तिला कोंडलेले जीवन देतो. मेल्यावरही आपली सावली शापाप्रमाणे तिच्या जीवनावर कायमची पाडून ठेवतो. वर्शानुवर्श बंदिस्त राहिलेल्या काशीला बाप मेल्यावर स्वच्छंद, स्वतंत्र व्हावेसे वाटते परंतु काही वेळात ती पुन्हा त्याच बंधनात परत येते. "काशी दु:स्वपनात जगत असते, त्यातून तिला जेवढे बाहेर जग दिसते त्याची ओढ तिला लागते परंतु बाहेरचे जगही आपल्या बापाप्रमाणे क्रूर आहे. त्याने दिलेले हे पाय घेवून आपण त्या जगात उभे राहू शकत नाही. काशी स्वत: स्वत:च्या जीवनाला बदलवू शकत नाही. या जाणिवेतून ती खचून जाते.''[२]('ललित' : वसंत आबाजी डहाके, संपादक- म. द. हातकणंगलेकर, जी.एं. कुलकर्णी विशेशांक, फेब्रु. १९८९ पृ. २६) असे अभागी जीवन काशीच्या वाटयाला आलेले आहे. उपेक्षेबरोबरच जी.एं. च्या पात्रांच्या नशीबात अन्यायही लिहिलेलाच आहे. या अन्यायाशी लढता-लढताच जी.ए.ची पात्रे खऱ्या अर्थाने मोठी होत जातात उदा:- 'काकणे' या कथेतील कावेरी एका नराधम माणसाच्या वासनेचा बळी ठरते आणि त्यातच कावेरी आत्महत्या करते. 'मिस डिसोजा' सारखी निर्मळ मनाची आणि सेवाभावी वृत्तीची स्त्री आधार शोधण्यासाठी जाते तर तिचे शोशण करण्यासाठी तयारी तिचे सहकारी दाखवितात. जी.एं. ची ही पात्रे अन्यायाला बळी पडतात. जी.एं. च्या स्त्री पात्रांच्या संदर्भात आपल्याला असे म्हणता येईल की, या पात्रांच्या अंतर्मनातील वेदना त्यांना वेळोवेळी छळत असतांना दिसतात. त्यामुळे स्वत:च्या जीवनातील सुख आणि आनंद ते हरवून बसतात. ते सतत अस्वस्थ वाटतात. 'पडदयाआड' कथेतील 'नलिनी' स्वत: केलेल्या पापाबद्दल, अपराधाबद्दल अस्वस्थच असते. स्वप्नातून तिला आपण केलेल्या गुन्हयांची वेळोवेळी जाणीव होत असते. तेच शल्य तिच्या मनात नेहमी बोचत राहते अशी अंतर्मनातून दु:खी असलेली पात्रे जी.एं. आपल्या कथेत रेखाटतांना दिसतात.

जी.एं. च्या पात्रांच्या नाशाचा भार समाजाप्रमाणे नियतीवरही जातोच. नियती कधी-कधी पात्रांवर वरचढ होतांना दिसते. कावेरीवर नियती अन्याय करते. सकाळी शेण काढायला जायचे निमित्य झाले आणि कावेरीचा पवित्र देह शेणावारी भ्रश्ट झाला. हा नियतीचाच प्रताप. राधी आणि काशी यांनाही नियतीनेच घेरलेले दिसते. जी.एं.चे पात्रचित्रण ही एक आगळीवेगळी शैली आहे असे म्हणता येईल. शांता शेळके म्हणतात, "जे असुंदर,अनिश्ट,काटेरी फोफावत राहावे आणि जे मंगल,पवित्र,सुंदर ते व्यर्थ जावे ही जीवनातील एक अपरिहार्य, कठोर वस्तुस्थिती आहे. हा व्यर्थपणा जी.ए. च्या अनेक कथांमधून प्रत्ययाला येतो.'' ('ललित'-शांताशेळके, संपा.म.द.हातकणंगलेकर, १९८९,पृश्ठ क्र. १४) कारण आपल्या भोवतीचे सर्व लबाड, शोशक, वाईट प्रवृत्तीचे, भोगी आहेत. या लबाडांच्या, वासनामय लोकांच्या गराडयात ते जगू शकत नाही काही त्यांच्या लचका तोडतात तर काही त्यांच्या उपभोग घेतात, जीव घेतात. ही पशुप्रवृत्ती या ना त्या रुपाने समाजात असतेच. आपल्या समाजाची ही रीत आजही कायम आहे. म्हणूनच जी.एं. च्या कथा आशयाने परिपूर्ण, चिरंतन स्वरुपाच्या ठरतात.

जी.एं.च्या स्त्रीप्रधान कथेतील स्त्रीपात्रातील साम्यभेद:-

जी.ए. मोठया ताकदीने पात्रे उभी करतात आपल्या चिंतनाचा, विचाराचा रस ते त्या पात्रांमध्ये ओततात त्यामुळेच त्यांची पात्रे जगापेक्षा वेगळी आणि प्रभावी ठरतात. त्यांच्या स्त्रीप्रधान कथेतील स्त्रीपात्रांमध्ये काही साम्यभेद येतात ते पुढील प्रमाणे -

१. जी. एं. ची पात्रे साध्या, सरळ स्वभावाची, शांत अजातशत्रू असतात.

२. जी. एं. च्या कथेत कावेरीसारखी नवविवाहित

तरुणी आहे तर दुसरीकडे राधी सारखी पतीने सोडलेली स्त्री आहे.

३. त्यांच्या स्त्रीप्रधान कथेतील पात्रांचा शेवट शोकात्म होतो.

४. त्यांची काही पात्रे नियतीची तर काही पात्रे समाजाची बळी ठरतात.

५. जी. एं. च्या कथेत पात्रांच्या माध्यमातुन प्रकट होणारे सौंदर्य आणि कुरुपता या दोन्ही गोश्टी सारख्याच न्यायाचे अधिकारी होतात.

निश्कर्श :-

१. जी.एं. च्या कथेत मानवी जीवनातील दु:ख, व्यथा, वेदना, भावनीक गुंतागुंत, अस्तित्वाविशयक जाणीवा यांचे प्रकटीकरण आहे.

२. जी.एं. आपल्या पात्रांच्या माध्यमातून मानवी अस्तित्वाची मुळे शोधतात.

३. जी.एं. च्या कथेतील महत्वपुर्ण वैशिश्टय म्हणजे त्यांची पात्रे कोणतेतरी शारीरिक, मानसीक अपंगत्व घेऊन आपल्यासमोर येते.

४. जी.एं. च्या स्त्रीप्रधान कथेतील स्त्रीपात्रे विश्वाच्या या अफाट पसाऱ्यात एकटे पडल्याची जाणीव करुन देतात ती दुसऱ्यांकडुन फसविली जातात व उद्ध्वस्त होतात, शेवटी मरून जातात.

५. जी.एं. ची कथा कधी-कधी रहस्यमय, गूढ स्वरुपाची होते. कथेचा आशय सहजासहजी वाचकांच्या हाती येत नाही.

६. जी.एं. आपल्या कथेत अपरिचीत वास्तवाचे भान उजागर करतात.

समारोप :-

जी. एं. चे कथालेखन चौफेर आहे. नवकथाकारांच्या नंतरच्या पिढीतील प्रतिभासंपन्न कथाकार म्हणुन कथासश्टीत जी.एं. यांचे नाव आहे. जी. एं. च्या स्त्रीप्रधान कथेतील स्त्रीपात्रे वैशिश्टयांनी परिपूर्ण अशा आहेत. स्त्रियांचे दु:ख असो वा सुख असो ते मांडण्याची जी.एं. ची शैली, त्या पात्राला सजीव करुन टाकते. राधीचे, काशीचे, लताचे, मिस डिसोजाचे दु:ख त्यांच्या कथेतल्या एका स्त्रीचे राहात नाही. तर त्याला सार्वत्रिकतेचा सूर प्राप्त होतो. ते दु:ख वैश्विक बनते. ''जी.एं. चे कथा विश्व लोकविलक्षण माणसांनी गजबजलेले आहे. त्यांच्या वेदना, त्यांचा दुश्टावा यांचे उत्कट चित्र जी.एं. रेखाटतात. त्यांच्या वासना अतिशय गदड, त्यांच्या भावना अति उत्कट; ही माणसे पेटुन निघालेली पण तरीही अगतीक! ते कसल्या तरी वेडाने झपाटलेली पण ती सारी नियतीच्या हातची खेळणी! माझ्या जीवीताचा मिच चक्रचालक हा त्यांचा अभिमान खोटा! तरीही त्यांची जीवनेच्छा जबरच. जीवन्मश्ताचे जिणे वाटयाला आले तरी ती जगतात.

विश्वरचनेपासून दुरावल्याची माणसा-माणसातील विलगतेची, व्यक्तीच्या एकलेपणाची, भंगलेपणाची जाणीव किंवा अस्ताव्यस्त पसाऱ्याची जाणीव व्यक्त करीत असतात. जी. एं. यांच्या समोर मूलभूत प्रश्न असा आहे की, माणसाला 'स्व' चा शोध पुरा करता येईल काय? जीव, जगत अणि अदश्श्य शक्ती यांचा परस्पर संबंध कोणता? मानवी अस्तित्वाचा अर्थ तरी कोणता? जगण्याची क्रिया अखंड चालली आहे. त्यांचे प्रयोजन तरी कोणते? या तद्नुशंगिक प्रश्नांची उकल करण्याचा एक वेगळाच रस्ता जी.एं. यांना गवसला असावा.''[४] (सहा कथाकार - संपादक भालचंद्र फडके, प्रस्तावना, कॉन्टिनेन्टल प्रकाशन, पुणे, चवथी आवश्त्ती - २००२ पश. क्र. ३६-३७) असे स्त्रीप्रधान कथेच्या संदर्भात म्हणता येईल. म्हणुनच स्त्रीप्रधान कथेतील स्त्री पात्रांचा अभ्यास केल्यानंतर जाणवत राहते की, त्यांची स्त्रीपात्रे दु:खाचे डोंगर डोक्यावर वाहतांना दिसतात. जणूकाही त्यांच्याजवळ दुसरा पर्याय नाही. जी.एं. च्या पात्रांचा दु:ख हा स्थायीभाव आहे. जी.एं. ची पात्रे आयुश्यभर सुखाच्या शोधात असतात पण त्यांच्या हाती दु:खच लागते आणि त्याच दु:खाला कवटाळून त्यांचा शेवट होतो.

जी. एं. च्या विविधतेने समश्ध्द अशा लेखनामुळे मराठी कथेला प्रगल्भता प्राप्त झाली. हे नाकारता येत नाही. हेच जी. एं. चे मोठेपण आहे.

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भारतीय परराष्ट्रधोरण व जागतिक आव्हान दहशतवाद

प्रा. प्रतिभा गडवे (दातीर)
राज्यशात्र विभाग प्रमुख
बॅरी. शेषराव वानखेडे
कला व वाणिज्य महाविदयालय,
खापरखेडा, ता. सावनेर, जि. नागपूर

आज सुदश्ढ परराष्ट्रीय धोरण ती प्रत्येक राष्ट्राची आवश्यक गरज आहे असे म्हणावे लागते. ही केवळ आपलीच गरज आहे असे म्हणणे चुकीचे आहे. कारण पारंपारिक राज्यशास्त्राच्या लिखाणापासून एका राज्याचे दुसऱ्या राज्यांशी काहीतरी संबंध असावे असे लिखाण आढळते. उदाहरणादाखल कौटील्याच्या 'अर्थशास्त्र नामक ग्रंथात त्यांने परराष्ट्रिय धोरणासबंधीचे आपले विचार मंडल सिद्धांताला मध्यवर्ती ठेऊन व्यक्त केले होते.

राष्ट्रीय हित व सुरक्षितता हे आज प्रत्येक राष्ट्राचे अंतीम उद्दीष्ट असते. आजच्या बदलत्या जागतिक संरचनेत आपल्या राष्ट्रीय उद्दीष्ठयांचा मेळ जागतिक राजकारणाशी घातल्याशीवाय कोणतेही राष्ट्र अंतीम उद्दीष्ठांपर्यत जाउ शकत नाही.

आपल्या गरजांच्या पुर्ततिसाठी एक राष्ट्र दुसऱ्या राष्ट्रांबरोबर जे संबध प्रस्थापित करित असते त्यालाच परराष्ट्रधोरण असे म्हणतात. प्रो. मार्शल यांनी परराष्ट्रधोरणाला स्पष्ट करतांना असे म्हटले होते की, " परराष्ट्रधोरण म्हणजे राजसत्तेने आपल्या क्षेत्राबाहेरिल परिस्थितीला प्रभावित करण्यासाठी केलेला कश्तीच्या क्रम होय. तर फेलिक्स ग्रॉस ने परराष्ट्र धोरणाला एखादया राज्याशी कोणत्याही प्रकारचा संबंध किंवा व्यवहार न ठेवण्याचा निर्णय म्हणजे परराष्ट्रधोरण म्हटले होते. तर जोसेफ फ्रक्वेल ने "राष्ट्रीय हित हा परराष्ट्रधोरणाचा मुलभुत स्वरुपाचा सिध्दांत आहे असे म्हटले होते. म्हणजेच परराष्ट्रधोरणाच्या माध्यमातुन राष्ट्रीय उददीष्टे व ही उद्दीष्ठे गाठण्यासाठी लागणारी साधने साध्य करण्याचे काम करावे लागत असते. राष्टाची भुमी , राष्ट्राचे, संविधान, स्वातंत्र्य व सार्वभौमत्व, एकता व त्यांची संप्पती यांचे देशात व देशाबाहेर संरक्षण करणे राष्ट्राच्या स्वसंरक्षणासाठी राष्ट्रशक्तीत वाढ करणे अभिप्रत असते. परंतु हे सर्व साध्य करित असंताना एक गोष्टी महत्वाची ठरते की, जागतीक राजकारण कडे व त्यातील महत्वाच्या समस्याकडे पाठ फिरविता येत नाही. कारण अलिप्त किंवा तटस्थ राहून कोणतेही राष्ट्र स्वत:चे ईप्सित साध्य करु शकत नाही.

परराष्ट्रीय संबंध प्रस्थपित करण्याच्या गरजेतून भारतासारखा देशालाही कोणतीही सुदश्ढ अशी परराष्ट्रीय नीती स्वातंत्र्य प्राप्तीनंतर निर्माण करणे आवश्यक होते. तेव्हा पंडीत जवाहरलाल नेहरू यांच्या नेतश्त्वात व जागतिक राजकारणतील भारताचे स्थान, भारतीय राष्टांची ऐकंदर भौगिलिक, आर्थीक सामाजीक परिस्थिती लोकांच्या गरजा, आंतरराष्ट्र राजकारणातील परिस्थिती या सर्वाचा विचार करून एक परराष्ट्र धोरण भारतासाठी आखण्यात आले कि ज्याचे शिल्पकार पंडीत जवाहरलाल नेहरुना म्हटले जाते. खालील मुलतत्वे असलेले हे परराष्ट्रधोरण आजही भारतामध्ये क्रियाशील आहे. १) अलिप्तता २) वसाहतवाद साम्राज्यवाद व वर्णभेदाला विरोध ३) आंतरराष्ट्रीय शांतता व सुरक्षितेवर भर ४) पंचशिल तत्वे ५) आफ्रिका, आशिया खंडातील राष्ट्राबरोबर मैत्रीचे संबंध ६) दोन्ही महासत्तांबरोबर

मैत्रीचे संबंध ७) आंतरराष्ट्रीय संघटनांचे समर्थन ८) दक्षिण आशियांतील राष्ट्रांबरोबर विशेष मैत्रीचे संबंध इत्यादी मूलतत्वांनी प्रेरित असलेले हे परराष्ट्रधोरण आजही बदलत्या परिस्थितीनुसार मुळ उद्दीष्ठांना कोणत्याही प्रकारच्या धक्का न लावता अधिक वास्तववादी व व्यवहारी बनले आहे. काळानुरुप वेगवेगळया नेतश्त्वाच्या कालखंडात या परराष्ट्रधोरणाने आपली वास्तविकता स्पष्ट केली आहे.

भारताच्या राष्ट्रीय हितसंबंधाचे संरक्षण करुन जागतिक शांतता टिकविण्यासाठी प्रयत्न करणे, राष्ट्रांराष्ट्रातील वाद शांततेच्या मार्गाने मिटवण्यावर भर देणे, संयुक्त राष्ट्रसंघाला पूर्ण सहकार्य, जागतिक सत्तागटा पासून अलिप्तता, शेजारिल राष्ट्रांबरोबर मैत्रीचे संबध प्रस्थापित करणे व टिकविणे संयुक्त राष्ट्राच्या आंतरराष्ट्रीय कायदयाचे पालन करणे, मानवी किंवा नैसर्गिक आप्पतीत सापडलेल्या राष्ट्रांना पूर्णपणे सहकार करणे ही उददीष्ठे आजही भारतीय विदेशी निती पाठपुरावा करतांना दिसते व त्यावर तोडगा काढणे व ती हस्तगत करण्यासाठी ही भारतीय राजकिय व्यवस्था क्रियाशील दिसून येते प्रत्येक कालखंडातील हया पररांष्ट्रधोरणची वाटचाल पाहता पंतप्रधान इंदिरा गांधीच्या काळात ते परराष्ट्रधोरण अधिक व्यवहारी व वास्तववादी झालेली आपणास दिसून येते. आपल्या सीमेंचे संरक्षण करण्यासाठी इंदिरा गांधीनी काही कठोर पावले उचलली, जसे बांगला देशी घुसखोराचा प्रश्न सोडविण्यासाठी १९७१ मध्ये पाकिस्थान विरुध्द केलेले युध्द त्यानंतर १९७६ पासून चीनबरोबरचे राजनैतीक संबंध सुधारण्यासाठी घेतलेला पुढाकार इंदिरा गांधीच्या काळापासून धार्मीक मुलतत्ववादांच्या आंकाक्षेने प्रेरित होउन एक गंभीर धोका म्हणजेच दहशतवाद डोके वर काढू लागला होता, कि ज्या समस्येने आज जागतिक स्वरुप धारण केलेले आहे.

भारतीय परराष्ट्रधोरणसमोर आज राष्ट्राबाहेर जी निरनिराळी आव्हाने उभी आहेत. त्यातील आतंकवाद किंवा दहशतवादाचे आव्हान ते अतिशय भयानक स्वरुपाचे आहे. भारतीय राजकिय व्यवस्था व परराष्ट्र धोरण खिळखीळे करण्याचा घाट हया भयावह समस्येने घातलेला आहे. नरसिंहराव राजवटीच्या कारकिर्दीपासून भारतात हया समस्येने उग्र स्वरुप धारण केले आहे. असे म्हणावे लागेल. भारतीय राष्ट्रीय हितसंबंधधाचे संरक्षण करणे व जागतिक शांतता टिकविण्यासाठी प्रयत्न करणे संयुक्त राष्ट्रसंघाला सर्वतोपरीने सहकार्य करणे या आपल्या परराष्ट्रीय धोरणाच्या उददीष्ठांना अनुसरुन आज संयुक्त राष्ट्रसंघ व अमेरीका या सोबत भारताची भूमिका दहशतवाद निर्मूलनासाठी महत्वपूर्ण ठरत आहे.

द्वितीय महायुध्दानंतर २० व्या शतकात १९७९ ला सोविएत राशीयाने अफगााणीस्तानात केलेल्या हस्तक्षेपामुळे उदभवलेले नागरी युध्द त्याला अमेरिकेने केलेली मदत त्यातुन निर्माण झालेली तालीबानी राजवट व त्यातुन दहशतवादाची महविनाशक समस्या निर्माण झाली.

"आमुलाग्र" राजकिय आणि सामाजिक परिवर्तन घडवून आणण्याच्या उद्देशाने शासनावर दबाव आणण्यासाठी हिंसाचाराच्या मार्गचा अवलंब करणे दहशतवादात अभिप्रेत असते. आंतररराष्ट्रीच दहशतवाद ही दोन किंवा त्यापेक्षा अधिक देशांमध्ये सक्रिय असणारा दहशतवाद असतो. राष्ट्रातील निष्पाप नागरिक,देशाच्या आर्थीकदृटया महत्वाच्या प्रगतिच्या स्थळांना, लष्करी स्थळांना दहशतवादात लक्ष्य करुन बॉम्बस्फोट घडवून आणणे व विध्वंस करणे अशी कृत्ये दहशतवादात केली जातात. राजकिय नेत्याचे खून करणे, अपहरण विघ्वंसक शस्त्रात्रे निरपराध लोकांना ठार मारणे नृशंस हत्या इ. मार्गाचा साधन म्हणून वापर करुन देशात दहशतीचे वातावरण निर्माण केले जाते. भारतात काश्मीर भूभागावर ताबा मिळविण्यासाठी स्वातंत्रप्राप्ती नंतरच्या काळापासून सुरु असलेल्या दहशतवाद कि ज्याचा बिमोड करण्याचा प्रयत्नांत भारतातील दोन पंतप्रधानांना आपल्या प्राणांना मुकावे लागले हे सर्वविदीतच आहे.

भारतात १९९४ मध्ये झालेलेबॉम्बस्फोट, १९९९ मध्ये काश्मीरमधील दहशतवादी संघटनांनी

इंडियन एयरलाईन्सच्या विमानाने अपहरण करुन मौलाना मसुदसारखा कळव्या दहशतवादयांच्या सूटकेची केलेली मागणी काश्मीरात, मुफ्ती मोहम्मंद सईद यांच्या मुलीचे केलेले अपहरण त्या मोबदल्यात दहशतवादयांच्या सुटकेची केलेली मागणी, भारतीय संसंदेवरझालेला दहशतवादी हल्ला या शीवाय नुकताच २६ नोव्हे. २०११ रोजी मुंबईवर पाकीस्तानी अतिरेक्या कडून झालेल्या दहशतवाादी हल्ला. व १९८९ पासून काश्मीर खोऱ्यातील चालू असलेल्या सीमापार दहशतवादी हल्लाच्या प्रकारात की ज्यात आतापर्यत भारतातील ५० हजाराहुन जास्त निरपराध लोक मारले गेले या ताध्यमातून दहशतवादाचे चटके भारतीय जनतेने सोसले आहे. व अजुनही रोजच दहशतवादी छायेत भारतीय समाज जीवन जगत आहे. व या दहशतवादी कारवायांमागे आंतरराष्ट्रीय दहशतवादी संघटना अल-कायदा व पाकीस्तान यांचा हात असल्यामूळै आंतरराष्ट्रीय पातळीवर त्यांच्यावर कार्यवाहि करण्यासाठी भारत वांरवार आंतरराष्ट्रीय जगत व अमेरीकेकडे मागणी करित आहे केवळ भारतालाच या अल कायदा या संघटनेचा धोका नसून त्याच्या लीस्टवर अमेरिका , ब्रिटन, रशीया, भारत, इस्त्रायल ही राष्ट्रे आहे. अमेरिकेसारखा महाशक्ती असलेल्या राष्ट्राला या सर्वाची माहीती असूनही जागतीक राजकारणतील दादा बनण्याच्या महत्वकांक्षेपोटी अमेरिकेने याकडे वारंवार हेतुपुरस्सर दुर्लक्ष केले आहे. परंतु ११ सष्टे. २००१ मध्ये अमेरिकेचे आर्थिक केंद्र व विश्व व्यापार केंद्र असलेल्या न्युर्याकयेथील वाशीन्टन डीसी मधील पेटांगॉनच्या इमारतीवर हल्ला झाला तेव्हापासून अमेरिकेने याकडे गांर्भीयांने पाहायला सुरवात केली. एकटया भारतात जम्मू काश्मीरच्या खोऱ्यात हिंसाचाराचे थैमान घालणाऱ्या हिजबुल मुजाहिदीन, लष्कर- ए- तोयबा, जैश-ए- महम्मद या सारख्या पाकीस्तान समर्थित लष्करी संघटना आहेत.

भारतातील दहशतवादामध्ये भारताच्या राष्ट्रीय सूरक्षेला व आंतरराष्ट्रीय धोरणाला सीमेबाहेरील दहशतचादाबरोबर धर्मीक मुलतत्ववादाच्या भावनेतुन निर्माण झालेल्या 'सीमी' सारख्या संघटनेचा धोका निर्माण झाला आहे. यासाठी देशपातळीवर भारत तर प्रयत्न करित आहे परंतु हा आंतरराष्ट्रीय धोका असल्याने जागतिक शांतता व सुरक्षितेला हातभार लावण्याच्या आपल्या परराष्ट्रीय धोरणाच्या प्रयत्नातून भारत अधिक प्रयत्नशील असलेला आपणांस दिसतो. भारतीय जनता पक्ष व आघाडी सरकारच्या काळात दहशतवादी प्रवृत्तीतून कारगील संघर्ष पाकीस्तानने भारतावर लादला परंतु भारताने तो मोडून काढलाव दहशतवादाचा बिमोड करण्यासाठी जगाने आम्हाला मदत करावी अशी मागणी जगाकडे व अमेरिकेकडे केली पाकीस्तान विरुध्द सर्व दहशतवादी पुरावे अमेरिकेला दिले. पाकीस्तानला दहशतवादी राष्ट्र म्हणुन घोषीत करावे अशी मागणी अमेरिकेकडे केली परंतु त्याकडे हेतुपुरस्सर दुर्लक्ष करण्यात आले. परंतु २००१ च्या अमेरिकेवरील दहशतवादी हल्यानंतरमात्र भारत व अमेरिका ही दोन रांष्ट्रे जवळ येण्यास मदत झाली. व स्वत:वर जेव्हा दहशतवादाचा कुठराघातझाला. तेव्हाच अमेरिकेने या विरुध्द पावले उचलायला सुरवात केली.

जगतिक शांतता व सुरक्षितेवा टिकविण्यासाठी व राष्ट्रीय सुरक्षा अबाधित राखण्यासाठी दहशतवादाने ग्रस्त समस्येवर तोडगा काढण्यासाठी रशिया व तीन मध्य आशीयाई राष्ट्रे यांच्या प्रयत्नांतून "शांघाय सहकार्य सघटंना'' स्थापन झाली असुन त्यांचे सदस्यत्व मिळविण्यासाठी भारत प्रयत्नशील आहे. २००२ मध्ये चीनसारख्या भारताचा शत्रु व सदैव कुरापती काढणाऱ्या राष्ट्राने पंतप्रधान झु रोंगजी यांच्या भारत भेटी दरम्यान भारतआणि चीनने दहशतवादाचा सामना करण्यासाठी संयुक्त कार्यकारी गटाची "जे. डब्लू. जी. ची स्थापना करण्याचे मान्य करणे हे भारतीय परराष्ट्रीय धोरणाचे निश्चितच यश आहे असे आपणाला म्हणावे लागते. शिवाय अमेरिकेसारखा भारताला दुटप्पी स्थान देणाऱ्या देशाने भारतासोबत अनेक लष्करी करार दहशतवादाचा बिमोड करण्यासाठी केलेले आहे.

परराष्ट्रीय धोरणाच्या आपल्या उददीष्ठांअतंर्गत दहतशतवादांच्या समस्येचा बिमोड करण्यासाठी भारताने

संयुक्त राष्ट्रसंघाला सर्व पातळीवर सहकार्य केलेले दिसून येते. १९७१ मध्ये दहशतवादाविरुध्द सामुहीक प्रयत्नासाठी आम सभेचा ठराव याला भारताचा पूर्ण पाठीबा आहे व तो अंमलात आणण्यासाठी भारत राष्ट्र व आंतरराष्ट्रीय पातळीवर कटीबध्द राहील असे भारताने जाहीर केले. संयुक्त राष्ट्रसंघटनेकडून दहशतवादयांकडून नागरिक, राजकिय प्रतिनिधी यांचे अपहरण करुन त्यांना ओलीस ठेवण्याच्या कश्त्यांविरुध्द प्रत्येक राष्ट्रांने कडक कारवाई करावी या भुमिकेला भारताचा पाठीबा आहे. ४ डिसें. १९८९ रोजी संयुक्त राष्ट्रसंघाने आमसभेत दहशतवादी संघटनांचा वापर, त्यांना मदत, प्रशिक्षण देणाऱ्या राष्ट्राविरुध्द जो ठराव मंजूर केला त्या अंर्तगत अश्या दहशतवादी राष्ट्रांचा निषेध याशिवाय आंतरराष्टीय दहशतवादाचा सामना करण्यासाठी युनोच्या सर्व सदस्य राष्ट्राना सहकार्याचे आणि सामुहिक प्रयत्नांचे आवाहन करण्यात आले आहे. व सर्व सदस्य राष्ट्रांनी दहशतवादाचा सामना करण्यासाठी देशांर्तगत कायदयामध्ये कडक उपायाची तरतुद करावी असेही आवाहन करण्यात आले आहे याशिवाय संयुक्त राष्ट्रसंघाकडून दहशतवाद निमूर्लन विभागाची निर्मिती करण्यात आलेली आहे. दहशतवादाला मिळणाऱ्या आर्थिक समर्थनाविरुध्द ठराव प्रस्तावित करण्यात आला आहे. संयुक्त राष्ट्रसंघटनेकडून दहशतवादाच्या निमूलन विभागाची निमिर्ती करण्यात आलेली आहे. दहशतवादाला मिळणाऱ्या आर्थि समर्थवाविरुध द ठराव प्रस्तावित करण्यात आला आहे. संयुक्त राष्ट्रसंघटनेकडून दहशतवादाच्या निर्मुलनासाठी जे अनेक उपाय सांगितले आहे त्याचे सकारात्मक समर्थन व त्यावर उपाययोजना राष्ट्रीय सुरक्षितता व आपल्या परराष्ट्रीय धोरणांच्या तत्वांना अनुसरुन भारत सदैव करित आलेला आहे. नुकतेच भारतातील दोन उदाहरणे मुंबई बॉम्बस्फोटाचा प्रमुख सुत्रधार अजमल कसाब व संसदेवरिल हल्लयाचा प्रमुख सुत्रधार अफझल गुरु यांच्याविरुध्द त्यांना फाशी देऊन कायदयाची केलेली कडक अंमलबजावणी हे सांगता येईल. दहशतवादाविरोध ी कश्त्यांचा आंतरराष्ट्रीयरित्या निषेध करुन आपण आपल्या परराष्ट्रधोरणाशी बांधील आहोत. हे भारताने सदैव आपल्या वर्तणूकीतून व आचरणातून जगााला दाखवून दिलेले आहे. परराष्ट्रधोरणातील तत्वाचे पालन करण्यासाठी प्रसंगी फार मोठी किंमत मोजून सदभावनापूर्ण दश्ष्टीकोन अंगीकारुन आपण तत्वांशी बांधील आहोत हे देखील भारताच्या अनेक निर्णय आणि कश्तीतून स्पष्ट होते. पंचशिल तत्वांतर्गत शांततमय सहअस्थित्व पररस्परांतील वाद शांततेचे मार्गाने सोडविण्यावर भारताचा भर दिसून येतो. याचे प्रत्यंतर चीन, पाकिस्तान व अमेरिकसारख्या देशांशी तीव्र मतभेद असुन हे देश आपले नुकसान करण्यात सदैव तत्पर असतात असे असुनही, दहशतवादी कश्त्यांत पाकिस्तान महत्वपूर्ण भुमिका वठवितो हे माहित असूनही, भारतात फाशी झालेले दहशतवादीहे पूर्णपणे पाकिस्तान प्रशिक्षित होते. त्यांनी भारतात केलेल्या दहशतवादी कश्त्यांचा समावेश भारताविरुध्द पुकारलेल्या अघोषित युध्दाचा प्रकार आहे. हे माहित असुनही त्यांचा मुत्युनंतर त्यांच्याबददल्च्या अनेक बाबतीत भारत मानवी हक्काच्या दश्ष्टीने विचार करतो मात्र तो दहशतवाद संपवु इच्छीतो हे त्याच्या आदर्शवादी पण तेवढयाच व्यवहारवादी परराष्ट्रीय ध ोरणाचे उत्तम उदाहरण सांगता येईल.

भारतीय राष्ट्रासमोर व एकूणन संपूर्ण जगासमोर दहशतवादाची समस्या निश्चितच गंभीर आहे. या साठी प्रत्येक राष्ट्रांने विषेश धोरण अनुसंरून राष्ट्रीय पातळीवर अनेक उपाययोजना करुन या दिशाहिन संघर्षाचा अंत करणे आवश्यक आहे. यासाठी अनेक सामाजिक व सांस्कश्तिक उपाय राजकिय उपाय, आर्थिक उपाय त्यासाठी करणे आवश्यक आहे.

परराष्ट्रधोरणाला मुळातच राष्ट्राचे हित साध्य करणारे एक अभिकरण म्हटले जाते तेव्हा हया नितिचा ही समस्या समुळ उखडून टाकण्यासाठी प्रभावीपणे उपयोग राष्ट्रांना करता यायला हवा व भारताच्या परराष्ट्रीय ध ोरणचा या अंगााने विचार केल्यास निश्चितच त्यात सकारात्मता दिसून येते. त्याला यश मिळत असलेले दिसून येते. परंतु हे परराष्ट्र धोरण अमलात आणतांना

बरीच तारेवरची कसरतही भारताला करावी लागते. कारण दहशतवादासारख्या समस्येविरुध्द कठोर उपाययोजना करायच्या म्हटल्यास पाकिस्तान सारख्या शेजारी राष्ट्राचा रोष ओढवून घ्यावा लागतो एवढेच नव्हे तर जगातील इतर राष्ट्रांमधुनदेखील दहशतवादी गुन्हेगारांना दिलेल्या शिक्षेबाबत मानवाधिकाराची चाचपणी करतांना दिसून येतात. बिन लादेन, सद्दाम हुसेन सारखा देशद्रोही लोकांना अमेरिका जेव्हा दंडीत करतो तेव्हा भारतासारखे देश ती एक योग्य व सकारात्मक कृती म्हणून त्याकडे पाहतात मात्र भारताबदद्ल तसे होतांना दिसून येत नाही.

तरिही आज भारतीय परराष्ट्रधोरणाबाबत आंतरराष्ट्रीय जगातील ऐक प्रतिक्रिया म्हणून या दशष्टिने पाहता येईल की, आशीया खंडातील उभरती महाशक्ती म्हणून आज जग भारताकडे बघत आहे.

संदर्भ सूची :-

१) तोडकर बी.डी. डॉ. भारत आणि जग
२) तोडकर बी.डी. डॉ. आंतरराष्ट्रीय संबंध
३) देवळाणकर शैलेद्र डॉ :- आंतराष्टीय संबंध
४) रायपुरकर वसंत डॉ. :- आंतरराष्टीय संबंध
५) Gopa Kumar – International Terrorism and Global order in 21 st Century.

अध्यात्मशिवायनम्फ – एक चिंतन

प्रा. डॉ. वृषाली भोसले
संस्कृत आणि कोषशास्त्र विभाग, डेक्कन कॉलेज, पुणे.

विसाव्मा शतकात आधुनिक संस्कृत साहित्माची निर्मिती – 0 * इ 0 प्रमाणात झाली. त्मात डॉ. श्रीधर वर्णेकर मांचे मोगदान खूप मोठे आहे. विशेषकरून श्री. वर्णेकरांनी शिवचरित्रावर भरपूर लिखाण केले आहे. त्मांचे ङ्कशिवराज्मोदमम्फ हे महाकाव्म व ङ्कशिवराज्मभिषेकम्फ हे नाटक सर्वांनाच परिचित आहे. मा ग्रंथाबरोबरच श्री. वर्णेकरांनी शिवचरित्रावर आधारित ङ्कअध्मात्म–शिवामनम्फ नावाचे काव्म रचले आहे. परंतु हे काव्म जरा दुर्लक्षितच राहिलेले दिसून मेते. अद्यापपर्मंत हे काव्म सर्वसामान्म वाचकांपर्मंत पोहचू शकलेले नाही. त्मामुळेच प्रस्तुत निबंधात ङ्कअध्मात्म–शिवामनम्फमा ग्रंथाविषमी चर्चा करणार आहे.

छत्रपती शिवाजीमहाराजांचे केवळ नाव जरी उच्चारले तरी सर्वत्र उत्साह सळसळतो तेव्हा अशा मा आदर्श राजाविषमी नवीन पिढीला परिचम व्हावा माकरिताच श्री. वर्णेकरांनी शिवचरित्रावर बरेच लिखाण केलेले दिसून मेते.

प्रस्तुत काव्मांची मांडणी कवीने अतिशम वेगळ्मा पद्धतीने केलेली दिसून मेते. हे काव्म संवादरूपी आहे. स्वामी विवेकानंद जेव्हा महाराष्ट्रात मेतात तेव्हा ते लोकमान्म टिळकांकडे जातात व छत्रपती शिवाजीमहाराजांविषमी विचारतात. तेव्हा लोकमान्म टिळक शिवजन्मापासून ते शिवराज्माभिषेकापर्मंत जे जे प्रसंग महाराजांच्मा आमुष्मात घडले त्मा सर्व प्रसंगाविषमी इत्थंभूत माहिती विवेकानंदांना सांगतात. अशा पद्धतीची प्रस्तुत काव्माची पार्श्वभूमी आहे.

१) काव्माची पार्श्वभूमी –

काव्माच्मा सुरूवातीलाच विवेकानंद लोकमान्म टिळकांना विचारतात–

भगवान्! परदास्मेन दु:सहेन चिरादिह।
हन्त! हिन्दुसमाजोऽमं जीवन्मृत श्वाधुना।।
अशि. १–२

निरूत्सको निरूसाहो निराकांक्षो निरूद्यम:।
लोकोऽमं निष्प्रतापश्च
कथं स्वातन्त्र्ममाप्नुमात्।। अशि.१–३

मावर लोकमान्म विवेकानंदाना सांगतात,

ङ्कविस्मृतात्मप्रभावस्य सत्वहीनस्य सर्वथा।।
राष्ट्रस्मास्म प्रबोधार्ममुपामोऽम
हि तत्वत: ।। अशि. १–१९

शक्तिर्बुद्धिर्धृतिर्नीतिर्विजिगीषा विवेकिता।
पिण्डितेवास्म राष्ट्रस्म चरित्रे शिवभूपते:।।
अशि. १–२०

शक्ति, बुद्धि, धृति, नीति, विजिगाषा, विवेक हे गुण राष्ट्रात हवे आणि हे सर्व गुण छत्रपती शिवाजी महाराजांच्मा चरित्रात दिसून मेतात.

पुढे लोकमान्म टिळक स्वामी विवेकानंदाना छत्रपती शिवाजी महाराजांनी समाजापुढे कसा आदर्श ठेवला, मृत समाजाला कशाप्रकारे जागृत करून त्मांच्मात स्वराज्माची भावना कशी प्रज्वलित केली. मनस्वी छत्रपती शिवाजी महाराजांचे वर्णन करतांना लोकमान्म म्हणतात,

दृष्ट्वा हिन्दुसमाजस्म दैन्मं दुर्दास्मसम्भवम् ।
संस्थापने स्वराजस्म सोऽभवत् कृतनिश्चम: ।।
अशि. २–३१

भीषण दास्मातून निर्माण झालेली हिंदू समाजाची ।
ऽ(अवस्था बघून, छत्रपती शिवाजी महाराजांनी स्वराज्म स्थापनेचा निश्चम केला.

तुल्मशीलबलोपेतै: स्ववमस्म:र्मनस्विभि:।

स जगा. क दा वीरो रोहिडेश्वरमन्दिरम्।। अशि. २-४०

आपल्मासारखे शील आणि बलानेमुक्त असलेल्मा आपल्मा सोबत्मांना घेऊन महाराज रोहिडेश्वराला गेले.

म्लेच्छराज्म-विनाशाम स्वराज्मस्थापनाम च।
तत्र प्रतिज्ञां तेऽकुर्वन् बालवीरा: शिवानुगा:।।
अशि. २.४१

अशाप्रकारे म्लेच्छराज्माच्मा विना६ ची आणि स्वराज्म स्थापनेची शपथ मा वीरांनी घेतली.

पुढे कवी शिवचरित्राची व ०/च्ची तुलना करताना दिसून मेतो.

शिवचरित्र - रामामण साम्म -

कवीने प्रस्तुत काव्मात शिवचरित्राची तुलना रामामणाशी केलेली दिसून मेते.

चरितं शिवराजस्म विजमश्रीविराजितम्।
वीराद्भुतरसं पुण्मं रामामणामइवापरम्।।
अशि २-४१

शिवाजी महाराजांच्मा चरित्रात विजमश्री विराजमान आहे. तसेच वीर आणि अद्भूत रसाने ते मुक्त आहे. हे चरित्र पुण्मकारक असून जणू काही दुसरे रामामणच आहे.

मेथे कवीने शब्दांची सुरेख गुंफण करून छत्रपती शिवाजी महाराजांच्मा चरित्राची महती मोग्म शब्दात मांडलेली दिसून मेते. मजणू काही दुसरे रामामणचंफ मा वाक्मावरून असे जाणवते की, राजा म्हणून राम आणि शिवाजी महाराज मांच्मातील साम्म कवीला दाखवामचे असेल.

एकश्लोकी रचना-

परंपरेमध्मे ज्माप्रमाणे एक श्लोकी महाभारत, एकश्लोकी रामामण आढळून मेतात, त्मा परंपरेवर प्रभावीत होऊन श्री वर्णेकरांनीही मअध्मात्मशिवामनम्फ मा काव्मात एकश्लोकी रचनेत संपूर्ण शिवचरित्र सांगितले आहे.

आदौ मातृमुखेन शिक्षणम%घ सन्मित्र सम्मेलनं
दुर्गाद्याक्रमणाफझुल्लहननं पर्णालनि: सर्वणम्।
शास्ताशासनमागराअपसरणं सिंहासनारोहणं
राष्ट्रोत्थानपरं शिवामनमिदं स च
? न्तनीमं सदा।। (अशि.)

मज्या शिवाजींनी प्रारंभी माता जीजाबाईंकडून शिक्षा प्राप्त केली, उत्तम मित्रांना एकत्र करून तोरणा आणि इतर किल्ल्यांना हस्तगत केले, अफजलखानाचा वध केला, पन्हाळगडाऱ्या वेढ्यातून निसटले, * अ ण्यात शाहिस्तेखानाला घरात घूसून मारल आणि पळवून लावल, शेवटी सिंहासनारूढ झाले. (या सर्व प्रसंगाला घडविणारे) राष्ट्राचे उज्ज्वल करणारे परमश्रेष्ठ छत्रपती शिवाजी महाराजांचे हे मशिवायन. च म आपणसर्व चांगल्याप्रकारे आणि विचार* इ ० च ५ ंक वाचावे.फ

मेथे कवीने अतिशम साचेबद्ध रचना करून एकश्लोक शिवचरित्र सांगून आपल्मा संस्कृत भाषेवरील प्रभूत्वाचा ठसा मेथे उमटविला आहे.

काव्माचे शीर्षक-

मअध्यात्मशिवायनम्फ या शीर्षकालाच अध्यात्माचा स्पर्श झालेला दिसून येतो. मशिवायनम्फ या नावावरूनच काव्याची महती समजते. तसेच अध्यात्मशिवायनम्फ या नावावरून हे छत्रपती शिवाजी महाराजांचे स्तुती स्त्रोत्र असावे हे हि लक्षात येते. महाराजांनी जे काम हाती घेतले होते ते फार मोठ्या स्वरूपाचं होते, त्यामुळे लोकांची श्रद्धा महाराजांवर खूप मोठ्या प्रमाणात होती. जनतेच्या या श्रद्धेला, विश्वासाला महाराज पूर्णपणे खरे उतरले होते. म्हणूनच आजही चारशे वर्षानी लोकराजा म्हणून छत्रपती शिवाजी महाराजांकडे आदराने बघितले जाते. आदर्श नेता म्हणून त्यांच्या राज्यकारभाराचे, राजकीय नियोजनाचे धडे आजही तरूणवर्गाला मार्गदर्शक ठरलेले आहेत. म्हणून श्री वर्णेकरांनी अतिशय समर्पक शीर्षक मअध्यात्मशिवायनम्फ हे प्रस्तुत काव्याला दिलेले आहे.

अध्मात्मशिवामन् काव्माची वैशिष्टे -

प्रस्तुत काव्मात अनेक अलंकारांचा वापर कवीने केलेला आहे. त्मापैंकी एक म्हणजे श्लेषालंकार -

काव्माच्मा प्रारंभीच मंगलश्लोक दिलेला आहे.

ओं नमोऽस्तु परेशाम श्रीमन्मङगलमूर्तमे।
ऋद्धिसिद्धिसमेताम निगमोद्गीतकीर्तमे
प्रतिपच्चन्द्ररेखाङकजटाजूटकिरीटिने।
नम: श्रीशिवराजाम दुर्गाधीशाम मोगिने।।

प्रस्तुत श्लोकात शंकर आणि शिवाजी महाराज दोघांनाही लागू होणारे विशेषणे वापरली आहे.

शंकरला नमन करतांना प्रस्तुत श्लोकाचा अर्थ असा होईल, मजो दुर्गेचा (पार्वतीचा) स्वामी अशा दिप्तीकान्ती अशा शिवशंकराला प्रणाम असो. जो परेश आहे. मंगलमूर्ती आहे, रिद्धी–सिद्धिने युक्त आहे, ज्याची किर्ती वेदात गायीली गेली आहे. जो प्रतिपदेच्या एक कला असलेल्या चंद्राला आपल्या जटांमध्ये धारण करतो.

तसेच छत्रपती शिवाजी महाराजांवर प्रस्तुत श्लोकाचा अर्थ असा होईल. जो दुर्गोंचा (किल्ल्मांचा) स्वामी, मोगी आहे अशा श्री शिवाजी महाराजांना नमस्कार असो. जो महान भूपति आहे आणि मंगलमूर्ती आहे, रिद्धी–सिद्धीनेमुक्त आहे, जो सर्वत्र गामल्मा गेलेली किर्ती धारण करीत आहे, जो आपल्मा मस्तकावर धारण केलेल्मा मुकुटामध्मे प्रतिपदेच्मा चंद्राप्रमाणे सतत वाढत जाणारी उन्नती प्राप्त करणारा आहे.

अशाप्रकारे अत्मंत समर्पक विशेषण कवीने प्रस्तुत श्लोकात वापरली आहे व ती शंकर आणि शिवाजी महाराज दोघांनाही तंतोतंत लागू होतांना दिसून मेतात. सर्वाना परिचित असलेल्मा अनेक श्लोकरचना प्रस्तुत काव्मात आहे.

उदा.–

सर्वमङगलमाङगल्म शिवं सर्वार्थसाधनम्।
सर्वाश्चर्ममम दिव्ममगाधं विश्वतोमुखम् ।।

तसेच कवींचा अनेक शास्त्रग्रंथांचा अभ्मास प्रस्तुत काव्मात जागोजागी दिसून मेतो.

उदा.

भजन्ति कुदिला: नीचा: आर्जव बलवस्तरा:।
मदि प्रबाधिता मुक्त्मा रिपुभिर्बलक्तमै: ।।

अर्थशास्त्रावर आधारित वरिल श्लोक आहे.

श्री. वर्णेकरांनी अतिशम सोप्मा भाषेत प्रस्तुत काव्माची रचना केलेली दिसून मेते. मराठी शब्दाची संस्कृतरूप करून चपलखपणे बसवलेली आहेत.

उदा.–

सिद्धप्रसादत: पुत्र उमादेव्मामजीजनत्।
शहाजिरिति विख्मातो भोंसलान्प्रमभूषणम्।।

सिद्धपीठाच्मा (शंकराच्मा) प्रसादाने उमादेवीच्मा गर्भातून शहाजी नामक पुत्र उत्पन्न झाला जो विख्मात भोसले वंशाचा आभूषण बनला.

प्रस्तुत काव्मात वीररस असून, प्रासादगुण आहे, अनुष्टुप वृत्तात सर्व रचना केलेली आहे. स0 चन्ती वृत्त बदल नाही. काव्मा शेवट अध्माम झाल्मावर फलश्रृतीचे सात श्लोक दिले आहे. स्तोत्रकाव्मासारखी रचना दिसून मेते. प्रस्तुत काव्म शिवजन्माच्मा दिवशी व शिवराज्मभिषेकाच्मा दिवशी, नातेवाईक, मित्रमंडळी मांच्मा समवेत म्हणावे असे सांगितले आहे.

उपसंहार – आजवर शिवचरित्रावर जे लिखाण झाले त्माची पद्धत अशी होती की, कवी स्वत: ती कथा सांगत आहे किंवा एखाद्या पंडिताकडून ती गोष्ट इतरांना ऐकवत आहे. परंतु प्रस्तुत काव्मात वर्णेकरांनी अतिशम प्रभावी व्मक्तींचा संवाद दाखविला आहे. ज्मा व्मक्तींमुळे समाजातील तरूण पिढीला स्फूर्ती मिळते, समजा ज्मांच्माकडे अतिशम आदरमुक्त भावनेने बघतो अशा लोकमान्म टिळक व स्वामी विवेकानंद मांच्मा संवादरूपातून शिवाजी महाराजांची मशोगाथा कवीने मेथे मांडली आहे. मूळातच शिवाजी हे नाव जरी उच्चारले तरी सर्व समाजात उत्साह सळसळतो आणि अशातच जाज्वल्म देशाभिमान असलेल्मा नेत्मांच्मा मुखातून शिवाजी महाराजांचे चरित्र, त्मांचे राजकीम, कर्तृत्व समाजातील तरूणवर्गा समोर मांडले तर ते आणखीच प्रभावी होईल मा उद्देशाने वर्णेकरांनी काव्माची रचना केलेली दिसून मेते.

संदर्भग्रंथसूची

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New Interdisciplinary National Research Journal /Year 1st, Vol. 2nd Sep 2012-Feb 2013 /ISSN NO. 2279-0349

कायदा आणि सामाजिक न्याय

डॉ. आनंदा काळे,
समाजशास्त्र विभाग प्रमुख,
श्री शिवाजी कला, वाणिज्य व विज्ञान महाविद्यालय, अकोला

स्वतंत्र भारताच्या समोरील अनेक संकटे व सामाजिक समस्यांबाबत डॉ. बाबासाहेब आंबेडकरांनी आपल्या भाषणामध्ये समस्त भारतीयांना जाणीव करून दिली होती की, ज्या घटनेत आपण 'जनतेसाठी जनतेचे व जनतेने चालवीलेल्या राज्याचे तत्व अंतर्भुत केले आहे ती घटना दिर्घकाळ पर्यंत टिकावी अशी आपणास ईच्छा असेल तर भारतापुढील संकटे समजुन घेण्यास विलंब करता कामा नये. तसेच त्यांचे निराकरण करण्यास असमर्थ राहता कामा नये. भारत भू-मातेची सेवा करण्याचा हाच खरा मार्ग आहे. भारतामधील कोट्यावधी जनतेला कायद्याद्वारे सामाजिक न्याय मिळाला पाहिजे ही खरी अपेक्षा, परंतु ह्या संबंधी भारतीय समाजव्यवस्थेचे अवलोकन केले असता असे दिसून येते की, सामाजिक वास्तविकता वेगळी आहे. व्यक्ति आपले हक्क, अधिकार मिळवुन घेण्याकरीता सर्वात शेवटी कायद्याचा आधार घेतो. कायद्याद्वारे आपणास योग्य न्याय मिळेल अशी सर्वसामान्य नागरीकांची अपेक्षा असते. समाजातील सर्वच लोकांना त्यांच्या मनाप्रमाणे न्याय मिळेल असेही नाही, परंतु बहुतांश लोकांना कायद्याद्वारे न्याय मिळायला पाहिजे ही रास्त अपेक्षा आहे. राज्यातील प्रत्येक व्यक्तिला कायदा लागू आहे. राज्याला सुध्दा सर्वश्रेष्ठ कायदा म्हणजे राज्य घटना लागू असते.

राज्य घटनेच्या भाग ४ मध्ये राज्याच्या धोरणासंबंधी मार्गदर्शक तत्वे सांगितली आहेत. कलम ३९ मध्ये अशी तरतुद आहे की, स्त्री-पुरूष या दोघांनाही उपजिविकेची पुरेशी साधने मिळवण्याचा हक्क आहे, समाजातील भौतिक साधनांची मालकी आणि नियंत्रण अशा तऱ्हेने विभागले जावे की ज्यायोगे सर्वांचे जास्तीत जास्त कल्याण होईल. संपत्तीचे केन्द्रीकरण होईल अशी अर्थव्यवस्था अंमलातच नसावी. स्त्री व पुरूषांना सारख्या कामाकरीता सारखा पगार, मजूरी, मोबदला मिळावा. कामगारांचे आरोग्य, शक्ती व मुलांचे कोवळे वय याचा दुरूपयोग केला जाणार नाही ह्या सर्व घटनात्मक कायद्यांमुळे स्वतंत्र भारताच्या नागरीकांना हा देश माझा आहे असे मोठ्या स्वाभीमानाने सांगता येईल. आपल्या प्रत्येक हिताचे रक्षण होत आहे अशी जेव्हा त्याची पक्की धारणा होईल तेव्हा प्रत्येकाचा ऊर आनंदाने भरून येणार यात शंका नाही. भारतामधील प्रत्येक राज्यामध्ये व महाराष्ट्रातील प्रत्येक जिल्हा, तालुक्यामध्ये बालकामगार व कामगारांची पिळवणुक होतच आहे.

खारपाणपट्यातील शेतमजूरांची स्थिती यापेक्षाही वाईट आहे. अशिक्षीतपणा, दारिद्र्य, बेकारी, लोकसंख्या आणि काम न मिळण्याची भिती म्हणजेच उपाशी राहण्याची वेळ ह्यामुळे आपल्या करिता राज्याच्या धोरणामध्ये मार्गदर्शक तत्व आहे आणि त्यामुळे आपणास सामाजिक न्याय मिळेल ह्यावर ह्या लोकांचा आता विश्वास सुध्दा डळमळीत झालेला आहे.

संशोधनाचे उद्दिष्टे :-

१. भारतीय समाजव्यवस्थेमधील कायदा आणि सामाजिक न्यायाचा अभ्यास करणे.

२. सामाजिक न्यायाच्या विपरीत परिस्थितीचा अभ्यास करणे.

संशोधनाची गृहीत तत्वे :-

१. भारतीय बहुजन समाजातील शेतकरी, शेतमजूर, कामगार ह्यांची स्थिती हलाखीची आहे.

२. ग्रामीण समाजव्यवस्थेमध्ये पूर्ण वेळ काम मिळत

नसल्यामुळे लोक नगरामध्ये स्थानांतरण करतात आणि त्यामुळे नागरी समस्यांमध्ये वाढ होत आहे.

नागरी क्षेत्रापेक्षा ग्रामीण मजूराची विशेषत: महिलांची स्थिती अतिशय दयनिय आहे. एका दिवसाला आठ तास काम करण्याची ४० ते ५० रूपये मजूरी ठरलेली आहे. काम करायचे असेल तर करा अन्यथा पोटा करिता शहरात स्थानांतरण ह्या शिवाय दुसरा पर्याय नाही. सामाजिक स्थरीकरणात वरच्या पातळी वरील आणि सर्वात खालच्या स्तरातील समाज घटकांनी सर्व प्रथम नागरी भागात स्थानांतरण केल्याचे स्पष्ट झाले आहे. मध्यम वर्गीयांनी आणि बलुतेदारांनी स्थानांतरण केल्यानंतर ग्रामीण अर्थव्यवस्था पुर्णत: मोडकळीस निघाली आणि नागरी भागात आर्थिक, सामाजिक समस्येचा उद्रेक झाला आहे. अशा वेळी आम्हास राष्ट्रपिता महात्मा गांधी, महामानव डॉ. बाबासाहेब आंबेडकर, महात्मा ज्योतीबा फुले, राष्ट्रसंत तुकडोजी महाराज ह्यांचे ग्रामीण समाज व्यवस्थेबद्दलच्या विचारांचे स्मरण करून कायदा व सामाजिक न्यायाचे तत्व प्रत्यक्षात उतरविणे गरजेचे असल्याचे स्पष्ट होते.

निष्कर्ष :-

१. प्रत्येकाला त्याच्या श्रमाचा योग्य मोबदला मिळायला पाहीजे, परंतु सामाजिक न्यायाच्या तत्वाचे पालन होतांना दिसून येत नाही.

२. स्त्री आणि पुरूष यांच्यामध्ये ज्याप्रमाणे आर्थिक आणि सामाजिकदृष्ट्या दुजाभाव निर्माण केला जातो, त्याचप्रमाणे ग्रामीण व नागरी समाजव्यवस्थेत फारकत करून दुजाभाव दिसून येतो.

संदर्भ ग्रंथ -

१. भारतीय राज्यघटना
- अनुवादक त्र. र. देवगिरीकर
२. श्रमाचे अर्थशास्त्र
- प्रभाकर देशमुख
३. ग्रामीण व नागरी समाजशास्त्र
- रा. ज. लोटे
४. भारतीय सामाजिक संरचना व समस्या
- रा. ज. लोटे
५. सामाजिक संशोधन पध्दती
- डॉ. प्रदीप आगलावे

New Interdisciplinary National Research Journal /Year 1st, Vol. 2nd Sep 2012-Feb 2013 /ISSN NO. 2279-0349

कुपोषण - कारणे, परिणाम व उपाययोजना

प्रा. प्राची भांबुरकर
श्री शिवाजी महाविद्यालय, अकोला

प्रस्तावणा

भारत देश हा कृषीप्रधान देश आहे. भारतातील ७० % जनता ही खेड्यात राहते व शेती करते. आज कृषीतंत्रज्ञानाचा विकास होऊ अन्न धान्याचे व खाद्यपदार्थाचे उत्सापादन वाढले आहे. अन्नधान्य संरक्षणाच्या पद्धतीचा विकास झालेला आहे. वैद्यकीय क्षेत्रात विकास होऊन आधुनिक वैद्यकिय सोयी सुविधा उपलब्ध झालेल्याआहे. तरीही ग्रामीण भागात व आदीवासी भागात कुपोषणाचे प्रमाण आढळून येते असे का ? असा प्रश्न उद्भवतो. कुपोषणाची समस्या दुर करायची असेल तर ग्रामीण भागातील लोकांच्या मानसिकतेत बदल करणे गरजेचे आहे. जोपर्यंत ग्राभीण भागातील लोकांची मानसीकता बदलणार नाही तोपर्यंत कोणत्याच प्रयत्नांना यश येणार नाही.

कुठल्याही देशाच्या प्रगतीचा मार्ग हा देशातील लोकांच्या आरोग्यावर अवलंबुन असतो. आहाराविषयीच्या गैरसमजुतीमुळे गरोदरपणात स्त्रिला योग्य आहार मिळत नाही. याचा परिणाम गर्भवती स्त्रीवर व तिच्या गर्भावर होतो व कुपोषित बालक जन्माला येते.

''कुपोषण म्हणजे जेव्हा शारीरिक आवश्यकतेनुसार काहि घटक अजिबात मिळत नाही, तर काही घटक कमी अथवा जास्त प्रमाणात मिळतात. तेव्हा त्याचे जे परिणाम शरीरावर दिसतात. त्यालाच कुपोषण म्हणतात.''(डॉ.आशा देऊसकर २००४) प्रत्येक कुटूंबात मुल हे चैतन्याच वातावरण निर्माण करते. मुलांचे कौतुक हसणे, खेळणे, बडबडणे यात सारे कुटुबीय दंग झालेले असतात. अशा या मुलांना फुलासारखे जपणे, त्यांच्यावर योग्य संस्कार घडविणे. त्याला खेळ, कला, शिक्षण यासाठी योग्य ती संधी उपलब्ध करून देणे ही पालकांची जबाबदारी असते. परंतु बालकांना पुरेसा आहार, आरोग्य सुविधा व निरोगी राहण्यासाठी पोषक वातावरण नसल्याने आजही जगात लाखो बालकांचा मृत्यु होतो.

कुपोषणाची चिन्हे आणि लक्षणे

मुले त्यांच्या वयापेक्षा लहान दिसतात आणि शारीरिकदृष्ट्या अक्रीयाशील मानसीकदृष्ट्या दुर्बल आणि वारंवार संक्रमनांना बळी पडणारी अशी असतात.

भुक न लागणे, अतिसार सामाण्यता: होतो. वाढ खुंटते त्वचा कोरडी आणि लोंबणारी दिसते. कसे विरळ फिक्कट करडे किंवा लाल पिवळे दिसतात. नाडीचा आणि श्वसनाचा वेग कमी असतो. तोंडावर व ओठावर ओरखडे व खवले पडतात. रोगप्रतिकार शक्ती कमी होते.

कुपोषणाची कारणे

१) गरीबी
२) अज्ञान
३) अंधश्रद्धा
४) अपूरा व कमी प्रतीचा आहार
५) आहाराविषयी व मुलांच्या पोषणा विषयी गैरसमजूती व अपूरी माहिती
६) संसर्गजन्य आजार उदा. गोवर, अतिसार,

श्वसनसंस्थेचे आजार

७) स्तनपान न देणे किंवा अपूरे देणे

८) पूरक आहर खुप उशीरा सुरू करणे

९) दोन मुलांत कमी अंतर

१०) लसिकरणाचा अभाव.

परिणाम

१) शरीराकरीता आवश्यक असलेली पोषकतत्वे न मिळाल्यामुळे कार्यशक्ती कमी होते.

२) शरीराचे वजन हळूहळू कमी होते.

३) अभावाचे रोग जसे, बेरीबेरी, झुरगी,कमी उंची, हाडे ठिसुळ, पचनशक्ती कमी इ.

४) त्वचे संबंधीत विकार

५) स्थुलपणा येतो.

राष्ट्राच्या विकासावर होणारा परिणाम

मुले ही राष्ट्राची संपत्ती आहे. दरिद्र्यातून उद्भवलेली कुपोषणाची समस्या संपूर्ण देशभर आहे. राष्ट्राच्या प्रगतीसाठीपोषणाचा पाया पक्का असणे आवश्यक आहे. समाजातील प्रत्येक घटक निरोगी असेल तर तो राष्ट्राचा खरा विकास होईल.

उपाययोजना

१) स्तनपान

पूर्ण स्तनपान म्हणजे पूर्ण अन्न असे म्हणतात. कुपोषणावर अनेक उपायापैकी स्तनपान हा महत्वपूर्ण उपाय आहे.

२) जंतुसंसर्ग

अनेक कारणामुळे होणार जंतुसंसर्ग मुलांपासून दूर ठेवला पाहिजे कोणतीही बाधा होणार नाही याची काळजी मातांनी घ्यायला पाहिजे.

३) औषधीयुक्त वनस्पतीचा उपयोग

मागासवर्गीय क्षेत्रात उपलब्ध असणाऱ्या वनस्पती जसे मोहफुल, बेहडा, हिरडा लिलामाली, सफेद मुसळी इ. वनऔषधीचे गुणधर्म व महत्त्व लोकांनी जाणून घेऊन त्याचा उपयोग करावा.

कुपोषणाच्या समस्येवर सरकार राबवीत असलेले कार्यक्रम

१) कुटूंबातील सदस्यांची संख्या मर्यादीत करणे.

२) कुटूंब कल्याण व आरोग्य विभाग

३) वेगवेगळे पोषण विषयक कार्यक्रम

या कार्यक्रमांतर्गत पूरक आहर कार्यक्रम शालेय स्तरावर राबविण्यात येते. त्यामुळे कुपोषणास आळा बसण्यास मदत होईल.

४) सकस आहार योजना

या अंतर्गत पोषण विषयक जागृतीवर भर दिला जातो.

संदर्भग्रंथ सूची

१) मानवी पोषण व आहारशास्त्राची मुलतत्वे

२) आहार आणि पोषण – मिनाक्षी तोरणेकर

३) पोषण कुपोषण – आसीडीएस पूस्तीका

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क्रीडा क्षेत्रात स्त्रि-पुरूष समानतेचा स्तर

प्रा. रूपाली अं. टोणे (इंगोले)

शारीरीक शिक्षण संचालक-श्री शिवाजी महाविद्यालय, अकोला

भारतात विविध खेळांत पुरुष खेळाडूंनी उत्तुंग कामगिरी केली आहे. पण क्रिकेट वगळले तर आज इतर सर्व खेळांना लोकमान्यता वा खरा लोकाश्रय लाभला तो महिला क्रीडापटुंमुळे. पी.टी. उषा, सानिया, के. मल्लेश्वरी, बुला चौधरी, अंजली वेदपाठक, सायना नेहवाल ही नावे घेतली की याचा प्रत्यय येतो.

'अबला नव्हे सबला' या म्हणीचा दाखला सर्रास दिला जातो. आजची स्त्री कोणत्याही क्षेत्रात मागे नाही. ती पुरुषांच्या बरोबरीने त्यांच्या खांद्याला खांदा लावून आगेकूच करते आहे. स्वत:चे वैशिष्ट्यपूर्ण स्थान निर्माण करते आहे. पोलादी हे विशेषण केवळ पुरुषांनाच नव्हे तर महिलांनाही लावले जाते. थोडक्यात सांगावयाचे तर एकविसाव्या शतकात 'रांधा,वाढा,उष्टी काढा' ही म्हण महिलांनी इतिहासजमा केली आहे. हे सगळे ऐकल्यावर एखादा म्हणेल की, भारताची अमुक टक्के जनता खेड्यात राहते. खेड्यातील अमुक टक्के महिलांपैकी अमुक टक्के महिला अजूनही खस्ताच खात आहेत. या मताविषयी दुमत करून चालणार नाही. पण प्रत्येक क्षेत्रात महिला स्वत:च्या हिंमतीवर धडाकेबाज कामगिरी करीत आहेत, ही कौतुकाची गोष्ट नाही का ? भारताच्या क्रीडा क्षेत्रात तर महिलांनी थक्क करणारी कामगिरी केली आहे. बहुतेक खेळांमध्ये कारकिर्द करणाऱ्या खेळाडूंची नावे विचारल्यास भरीव कामगिरी केलेल्या खेळाडूत महिलांचेच नाव आधी आठवते. टेनीस म्हटले तर कृष्णन, अमृतराज, पेस-भुपती पेक्षा सानिया मिर्झाचे नाव तुलनेने अधिक गाजले. ॲथलेटिक्समध्ये सुवर्णकन्या पी.टी.उषा हिने तिरंगा फडकाविल्याचे आधी आठवते. वेटलिफ्टींगमध्ये ऑलिम्पीक ब्रांझ पदक विजेत्या करनाय मल्लेश्वरीचा पराक्रम मैलाचा दगड ठरतो. स्काशसारख्या फारशा परिचित नसलेल्या खेळातही मिशा ग्रेवाल, मुनेश्वरी कुमारी, जोत्स्ना चिनप्प, दिपिका पल्लीकल यांनी ठसा उमटविला आहे.

भारतासारख्या विकसनशील देशात क्रीडा संस्कृती अस्तित्वात आहे का ? हा संशोधनाचा विषय ठरू शकतो. कबड्डी व खो-खो सारख्या देशी खेळात महिलांचे सामने असल्यावर क्रीडाप्रेमींची कमी आणि आंबटशौकिनांची गर्दी जास्त व्हायची आणि अजूनही होत असते. क्रिकेटमध्ये एकसारखे सपाटून मार खाणाऱ्या 'टिम इंडिया'च्या हिरोंची हारकिरी पाहतांना क्रिकेटप्रेमींना काहीही वाटत नाही मात्र याच क्रिकेटवेड्या आपल्या देशाच्या महिला क्रिकेट पट्टूंविषयी अजिबात माहिती नसते. ही आपल्या समाजाची शोकांतिकाच असेल.

स्त्री-पुरुष समानतेवर अध्ययनाची गरज

महाराष्ट्रात समता आंदोलनाची सुरुवात जरी १९८७ मध्ये झाली असली तरी २० मार्च १९८८ पासून या चळवळीला गती आली. महाराष्ट्रातील

महिलांच्या समस्या व त्यांना मिळणारी असमानतेची वागणूक या अन्यायांना तोंड फोडण्यासाठीच जणू ही समता आंदोलन चळवळ सुरू झाली. या आंदोलनात सर्वच धर्मांचा समावेश होता. ५ में १९८८ रोजी अहमदनगर येथील जिल्हाधिकारी कचेरीवर आपल्या मागण्या पूर्ण करण्यासाठी पहिल्यांदा मोर्चा नेला गेला त्यात ११०० हिंदू, १५५ मुसलमान, ७३ बौद्ध, १८ खिश्चन महिलांचा सहभाग होता.

जोपर्यंत स्त्रीला पुरुषांप्रमाणे स्वातंत्र्य, स्वाभिमान, प्रतिष्ठेने जीवन जगण्याच्या दृष्टीने आणि स्वत:चा विकास घडवून आणण्याच्या दृष्टीने अनुकूल असे समाज वातावरण बनणार नाही तोपर्यंत राष्ट्राचा विकास हा गतीने होणार नाही. असे मत अनेक मान्यवरांचे होते आणि ते सत्यच होते. पण मुंबई व महाराष्ट्रात इतरही ठिकाणी ही चळवळ अतिशय जोमाने सुरूच होती. १९९१ साली तिने महारूद्रावतार धारण केला.

प्रत्येक क्षेत्रात स्त्रियांना समानतेची वागणूक मिळावी म्हणून प्रयत्न सुरू झाले. त्यांना तशी संधी व सवलत उपलब्ध करून देण्यास सर्व प्रयत्नशील झाले कारण आंतरराष्ट्रीय स्तरावर या विषयांवर जोमाने काम तर सुरूच झाले होते व या हक्काच्या लढाईत मोठमोठे राष्ट्र आपला सहयोग देण्यास तयार झाले होते.

मात्र तुलनेने पाहिले तर क्रीडा क्षेत्र यात थोडे मागेच राहिले होते. खासकरून भारतात या विषयाकडे योग्य ते लक्ष पुरविल्या जात नव्हते असे लक्षात येत होते. कारण क्रीडेतील महिलांचा सहभाग जरी वाढला तरी त्यांचा स्तर वाढविण्याची आवश्यकता व योग्य तितक्या योजना व लक्ष सरकार व त्याचबरोबर समाजाचे नव्हते. क्रीडा क्षेत्र पाहिले तर बऱ्याच गोष्टीत अजूनही स्त्री–पुरुष मतभेद केल्या जात होता. मग ते क्रीडा आयोजन, पुरस्कार वा स्पर्धा का नसो प्रत्येक बाबतीत महिला खेळाडूंना दुय्यम स्थान मिळत होते. प्रसार माध्यमांचे देखील आवश्यक तितके लक्ष महिला खेळाडूंकडे नाहीच असे म्हणायला हरकत नाही.

आंतराष्ट्रीय स्तरावरचे उदाहरण घेतल्यास बरेचदा टेनिस स्पर्धांमध्ये महिला खेळाडूंच्या सामन्यांची वेळ व स्थान बदलविण्यात आले. ते केवळ पुरुष गटातील सामने प्रसादरमाध्यमांनी निश्चित केलेला व सुयोग्य वेळी व्हावेत म्हणूनच. आपल्या देशात खेल प्राधिकरण मध्ये खेळाडूंसाठी भरपूर चांगल्या योजना आहेत पण दु:खाची बाब अशी की त्यात कुठलीच योजना फक्त महिलांसाठी नाही. महाराष्ट्र सरकारजवळ महिला खेळाडूंसाठी वेगळे असे बजेट नाही. ही शोकांतिकाच म्हणावी लागेल. मात्र इतर देशात दिवसेंदिवस महिला खेळाडूंकडे पुरेपूर व जास्त लक्ष पुरविल्या जात आहे. त्याचप्रमाणे त्यांच्यासाठी वेगळे बजेट व अतिरिक्त सुविधां देखील पुरविल्या जात आहेत.

संशोधनकर्तीच्या अनुभवावरून असे निदर्शनास आले की, दिवसेंदिवस महिला खेळाडूंचा सहभाग हा कमीच होतांना दिसतो आहे कारण समाज व सरकार या दोघांचेही त्यांच्याकडे पुरेसे लक्ष नाही. उदा. नुकत्याच दिल्लीत झालेल्या राज्य महिला बुद्धिबळ स्पर्धेच्या निवड चाचणीत फक्त २ महिलांचाच सहभाग

होता. काही वर्षापूर्वी महाराष्ट्रात महिला खेळाडूंसाठी क्रीडा उत्सवाचे आयोजन करण्यात येत होते. पण नवीन क्रीडा सहभाग वाढविण्यासाठी योजने अंतर्गत स्थलांतरित महिला खेळाडूंकडे पुन्हा एकदा दुर्लक्ष केल्याचे दिसते.

भारतात महिला खेळाडूंना खेळात सहभागासाठी भरपूर संघर्ष करावा लागतो. त्यांच्यासाठी ती एक तारेवरची कसरतच आहे. त्यांच्या एका बाजूने समाजाचा व त्यांच्या खेळाप्रती नकरात्मक दृष्टीकोण असतो तर दुसऱ्या बाजूने असमानतेची वागणूक व असुविधा असतात. जर काही महिला लग्न व बाळंपणानंतरही आपला खेळ सुरू ठेवत असतील तर त्याचे प्रमुख कारण त्यांचे पती हे स्वत: खेळाडू व त्यांचे प्रोत्साहन हे होय. आपल्या देशात याची बरीच उदाहरणे आहेत. स्प्रींटर जोडपे–रीतू अब्राहम व सुनल ओ. शायनी विल्सन व पती व्हीलसन, बॅडमिंटन खेळशडू –मधुमीता बीष्ट व विक्रम सिंग, बुद्धिबळ खेळाडू– प्रविण आणि भाग्यश्री, अनुपमा गोखले व रघुनंदन गोखले, हॉकी– सुरजीतसिंग व चंचल रंधवा, ॲथलेटिक्स अंजु व बॉबी जॉर्ज यांच्यासारखे आणखी काही पुरुष खेळाडू आहेत ज्यांनी स्त्री खेळाडूंचे महत्त्व समजून त्यांना अधिक प्रोत्साहित केले.

आरती पुनप्पा यांचे पालक हे उत्कृष्ट दर्जाचे राष्ट्रीय खेळाडू असून त्यांचे महिला क्रीडेबद्दल मत विचारले असता, पुरूषांच्या खेळाला आपल्या देशात जास्त महत्त्व दिले जाते मात्र महिलांच्या खेळाकडे त्यांच्यापेक्षा अर्धेदेखील महत्त्व दिल्या जात नाही. कारण खरे तर आंतराष्ट्रीय स्तरावर भरपूर खेळांचे आयोजन महिलांसाठी केल्या जाते मात्र कोणी प्रायोजक समोर येत नसल्याने महिला खेळाडू त्यापासून वंचित राहतात. हा दृष्टिकोन बदलावयचा असेल तर यावर आफ्रिका, अमेरिका, फ्रान्स, युगांडा, जर्मनी, चायना, इंग्लड या देशांप्रमाणे आपल्या देशातही या विषयाकडे अधिक लक्ष देऊन त्यावर अध्ययन करणे गरजेचे आहे. जेणेकरून स्त्री–पुरूष समानता दरी दूर करण्यास मदत होईल.

सी.सी. कॉवेल यांच्या मते '' शारीरिक शिक्षण ही एक सामाजिक प्रक्रिया आहे. स्नायुवर्धक हालचाली व सांघिक खेळातून व्यक्तीच्या वर्तणुकीत बदल घडवून आणला जातो त्यास शारीरिक शिक्षण म्हणतात.

शारिरिक शिक्षणाचे उद्देश व ध्येय पाहता त्यात एक महत्त्वपूर्ण घटक म्हणजे शारीरिक व मानसिक विकासाबरोबरच व्यक्तीचा सामाजिक विकास करणे होय.

समाज म्हटला तर स्त्री व पुरुष या दोन्ही घटकांचा त्यात समावेश आलाच आणि भारतीय संविधानाचा अभ्यास केला तर असे लक्षात येईल की भारतीय संविधानात स्त्री व पुरुष यांना समान हक्क व समान महत्त्व प्रदान करण्यात आले आहे. हा त्या काळातील थोर पुरुषांचा दूरदृष्टीकोनच म्हणावा लागेल की ज्यांनी जर देशात स्त्री व पुरूष सारख्या कसोटीने खांद्याला खांदा लावून प्रत्येक क्षेत्रात कार्य करतील तरच देशाच्या यशस्वीतेचा व प्रगतीचा मार्ग मोकळा होईल हे ओळखले.

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Leaf and Stem anatomy of *Salvadora persica* L.

Isha S. Nagwanshi
Shri Shivaji College, Akola

Abstract:

Salvadora persica L belongs to family Salvadoraceae. The present study is based on anatomical investigation of vegetative parts like stem and leaf. Both leaf and stem show excess deposition of cuticle and papillae. Presence of extra large vessels in stem with interxylery phloem is an unique feature of this plant. On the basis of these characters it can be said that the plant has a tendency towards xeric conditions.

Keywords: *Salvadora persica* L, stem and leaf anatomy, papillae, interxylery phloem.

Introduction:

Salvadoraceae belongs to order Brassicales. It comprises of 3 genera (*Azima, Dobera*, *Salvadora*) including 12 species. Out of which *Salvadora* Comprises of five species, including*S. australis, S. oleiodes* and *S. persica*. It is native to the Middle East. Out of the five species of *Salvadora*, two species i.e., *Salvadora persica* L and *Salvadora oleiodes* Decne are available inIndia (Purkayastha 1985). *Salvadora persica* L commonly known as the "Miswak" tree. It is a small tree or shrub and xerophytic in nature. *Salvadora persica* is commonly used as medicinal
plant by global Muslim community (Sher *et al.,* 2010).

Gamble (1922) described gross features of these species in brief. Metcalfe and Chalk (1950) summarized microscopic features at the generic level. Den Outer and Van Veenendaal (1981) described wood and bark anatomy of *Azima tetracantha*. Carlquist (2002) provided some detail of wood and bark anatomy of the family. Saxena and Gupta (2004) reported perforated ray cells in Salvadoraceae. Further in 2005 they correlated Brassicales with Celastrales on the basis of perforated ray cells.

The systematic anatomy is mainly aimed towards relating structure particularly of vegetative organs, to taxonomic classification of the plants in which the characters are exemplified. Accurate microscopical and macroscopical descriptions of medicinal plants must be carried out to maintain standards of safety and quality and to authenticate the crude drug materials properly. Most of the drugs that are extracted from leaves, barks, roots and rhizomes may be difficult to identify from their macroscopical appearance only; they must be complemented by microscopical characterization.

The microscopical features *of S. persica* were studied to investigate anatomical diagnostic features which might prove helpful to its correct identification and taxonomic position.

Material and methods:

The plant selected for the study is *Salvadora persica*. The plant was collected from Ugwa village, District Akola which is located in north of Maharashtra

(India). Plant was identified taxonomically by local taxonomist and with the help of flora of Akola district (Kamble and Pradhan, 1988), flora of Marathwada (Naik, 1998) and flora of Maharashtra (Singh and Kartikeyan, 2000).

Preparation of Double Stained permanent slide:

For the detail anatomical study, the double stained permanent slides of stem, leaf and petiole of the plant material under study were prepared by routine laboratory technique. Fresh plant material was used for preparing permanent slides. After staining, the details were observed under microscope.

Results and Discussion:

While carrying out the stem anatomy, in the epidermal surface were found prolongation of epidermal layers at frequent interval. These are named as papillae are meant for water storing purposes also known as water storing vesicles. These papillae collect the light which is later on received by specialized light receptors and used for physiological reactions. The stem Xylem (Primary as well as secondary) shows large sized vessels. It is not a large tree but just a shrub still has large sized vessels a question arises about their presence and role either in the physiology of plants or phylogenetical expressions.

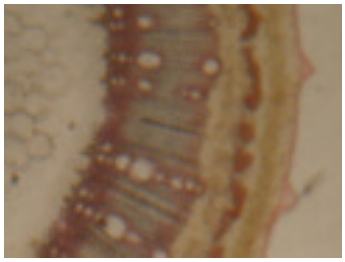

Fig. 1 T. S. of Young Stem showing papillae

Presence of included or interxylery phloem in the secondary wood is a common and interesting feature generally such phloem is found in lianers (Woody twinners) in the plants of families Asclepediaceae, Apocynaceae, etc. This plant in habit is a shrub with some extent having drooping branches. Presence of such included or interxylery phloem creates a doubt in the mind of anatomists and ecologists about its presence. Such anamolous interxylery phloem in the wood is adaptive or non-adaptive type of anomaly or having any physiological significance. Its presence mostly may be due to drooping branches which hang downwards and hanging require flexibility and this may be provided by the formation of interxylery phloem. If it is true then no doubt it becomes physiological adaptive anamoly.

Presence of interxylery phloem is also reported in the normal main trunk and then its presence creates a doubt about its adaptive anamoly.

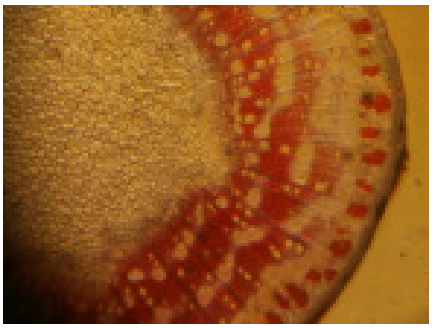

Fig. 2 T. S. of Old Stem showing interxylery phloem

In the leaf, comparatively a very thick cuticle and palisade parenchyma on both surfaces below and above the epidermal surfaces is a point of interest. In mesophytes, the cuticle is of a normal thickness and palisade parenchyma is present only below the upper epidermis.

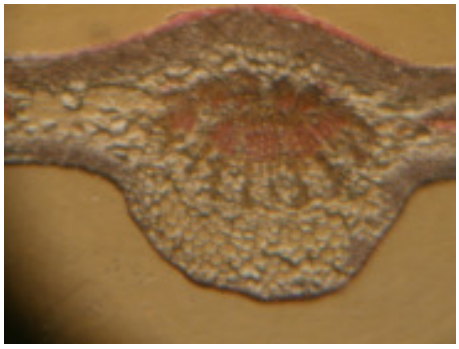

Fig. 3 T. S. of Leaf of *Salvadora persica*

The above mentioned two characters are found in xerophytes. Thus this plant showing a tendency, towards a xeric habitat and its conformation can be carried out because of the thick and fleshy leaves. In the stem large sized vessels may be due to the tendancy of this plant towards xeric habitat.

Conclusion:

The plant has ethic importance and also shows some interesting anatomical features. Thus the study is important both ethnobotanically and anatomically.

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Phytochemical investigation and antifungal activity of *Salvadora persica* L- A medicinally important plant from Akola Region.

Isha S. Nagwanshi
Shri Shivaji College, Akola

Abstract:
Salvadora persica L is a medicinally important plant of family Salvadoraceae. Plant is known for various medicinal properties like tonic, diuretic, analgesic, anthelmintic and astringent. This plant used by local tribal communities as ethnomedicine to cure tooth ache. The present attempt deals with study of preliminary phytochemical investigation and antifungal activity of this plant. The result revealed that *Salvadora persica* L becomes source of major phytochemicals like alkaloids, reducing sugars, saponin, tannin, flavonoids and steroids. The plant extract also showed significant antifungal activity. The availability of phytochemicals can be correlated with its antifungal activity and medicinal potential.

Key words: *Salvadora persica* L, Phytochemical, antifungal activity and ethnomedicine.

Introduction:

India harbours about 427 tribal communities, all differing in their social and cultural traditions. Each one of them had their own systems of traditional health care. But, this indigenous knowledge is on the verge of extinction in many tribes. This must have to extract and use for the benefit of human society. According to the study from U.S., 60-70% patients living in rural areas all over the world are dependent on herbal medicines for their day to day diseases (WHO, 2000 and Singh, 2008). Discovering a plant based drug includes search of medicinal plant, identification of its phytochemical composition and evaluation of its related activities. Thus, phytochemistry becomes an essential part of drug discovery. A lot of researches have been done to investigate the phytochemical constitution of numerous medicinal plants worldwide.

The use of plant extract and phytochemicals both with known antimicrobial properties can be of great significance in the treatment of various ailments. In the last few years, a number of studies have been conducted in different countries to prove the medicinal efficacy of plants (Almagboul *et al*., 1985; Artizzu *et al*., 1995; Ikram and Inamul, 1984; Izzo *et al*., 1995; Kubo *et al*., 1993 and Sousa *et al*., 1991).

Salvadora is a genus of tree or shrub in the plant family Salvadoraceae. There are five species, including *Salvadora australis, S. oleiodes* and *S. persica*. It is native to the Middle East. Out of the five species of *Salvadora*, two species i.e., *Salvadora persica* and *S. oleiodes* are available in India. *Salvadora persica* L, commonly known as the Miswak tree, found in Savannah from northwestern India to Africa. *Salvadora persica* is commonly used medicinal plant by global Muslim communities (Sher *et al.,* 2010). Traditional literature had reported number of uses of this plant however very few studies were found on the preliminary phytochemical investigation of it. Therefore, the present work was planned for preliminary

phytochemical investigation and antifungal activity of *Salvadora persica* L.

Material and method:

The plant selected for the study is *Salvadora persica*. The plant was collected from Ugwa in Akola district which is located in north of Maharashtra (India). Plant was identified taxonomically by local taxonomist and with the help of flora of Akola district (Kamble and Pradhan, 1988), flora of Marathwada (Naik, 1998) and flora of Maharashtra (Singh and Kartikeyan, 2000). The plant materials were washed thoroughly and dried in shade. The shade dried material are then powdered and the powder used for phytochemical analysis in different solvents (Aqueous, Ethanol and Acetone). The extracts were analyzed for the presence of alkaloids, terpenoids, reducing sugars, saponins, tannins, Flavonoids, steroids and cardiac glycosides (Harborne, 1973; Sofowora, 2000 and Krishnaiah *et al.,* 2009).

Antifungal assay:

The antifungal activity of the sterile dimethyl sulfoxide (DMSO) extract of the stem was determined by borer well diffusion method. Briefly, 10^4 spores/ml of fungi were spread on petri plates containing Potato Dextrose Agar (PDA) medium (50 ml media/ plate). Small stainless steel sterile borer having diameter 6mm was used. Hole was made in the medium using this sterile borer. For experiment 1ml of stem extract was filled in the hole with the help of dropper. The plate was incubated at 30°C for 48 h. Antifungal activity was assessed by measuring the diameter (mm) of the zone of inhibition.

RESULTS AND DISCUSSION:

The plant so called is selected for present study because of it is mostly used against the tooth ache and mouth disease in most of the Arabian countries. From the powder of stem and leaf a popular tooth paste "Miswak" is available in the market.

The preliminary phytochemical studies were carried out in the solvents like water, ethanol and acetone (table no-1). In the aqueous solvent when the extracts were studied the tests were positive for alkaloids, reducing sugars, saponins, tannins, flavonoids and cardiac glycosides whereas the tests were negative for steroids and terpenoids. In the ethanol extract all the above were positive except terpenoids whereas in the acetone extract there were no terpenoids, reducing sugars and cardiac glycosides. From the above result it was clear that the stem bark is rich in alkaloids, reducing sugars, saponin, tannin and flavonoids. The literature available so far reveals that the bark has a good potential against toothache diseases caused due to bacteria. These bacteria ultimately lead to the dangerous disease Piarhhoea, which weakens the gums enamel resulting in a very bad smell in the mouth and decaying of teeth.

From the above studies it becomes clear that the chemicals present in the bark like flavonoids, steroids, alkaloids, saponins may be responsible for curing this disease.

The stem bark powder was also tested for antifungal activity against a fungal organism *Aspergillus niger.* The zone of inhibition was found to be 12 mm diameter which indicates presence of antifungal activity in *Salvadora persica*.

Conclusion:

From the above studies it becomes clear that the chemicals present in the bark like flavonoids, steroids, alkaloids, saponins may be responsible for medicinal property of *Salvadora persica*. Therefore, it is a prime need for the microbiologists and phytochemists to carry out the detailed studies of bark powder for discovery of novel herbal drug.

Table no-1: Preliminary phytochemical analysis of *Salvadora persica* L

Sr. No.	Phytochemicals	*Salvadora persica*		
		Aqueous	Ethanol	Acetone
1	Alkaloids	+	+	+
2	Terpenoids	-	-	-
3	Reducing Sugars	+	+	-
4	Saponins	+	+	+
5	Tannins	+	+	+
6	Flavonoids	+	+	+
7	Cardiac glycosides	+	+	-
8	Steroids	-	+	+

[(+) – present, (-) – absent]

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सातवाहनकालीन स्त्रियांची सामाजिक स्थिती

प्रा.डॉ. नाना ताराचंद वानखडे,
श्री. शिवाजी महाविद्यालय, अकोला

भारताच्याच नव्हे तर जगाच्या राजकीय आणि सांस्कृतिक नकाशावर महाराष्ट्राला झळकविण्याची कामगिरी सातवाहन राजघराण्याने केली होती. या घराण्याने जवळजवळ ४५० वर्ष सातवाहनांच्या झेंड्याखाली एकत्र झालेल्या महाराष्ट्रीय नागरिकांनी भारताच्या इतिहासावर आपल्या कर्तृत्वाचा ठसा उमटता ठेवला आणि विशेष म्हणजे महाराष्ट्राची जडणघडण सातवाहन काळातच झाली आणि सातवाहन युग म्हणजे महाराष्ट्राला स्थैर्य दिले. सातवाहनांचा कालखंड म्हणजे महाराष्ट्राच्या सांस्कृतिक जीवनाचा आरंभ होय आणि या सांस्कृतिक जीवनाची सुरुवात गोदावरी परिसरातच झाली. त्यामुळे त्यांचे गोदावरीलवरील प्रेम प्रकट झालेले आहे आणि गोदावरीलाच येथे दक्षिण गंगा म्हटले जाते. विशेष म्हणजे सातवाहन राजवटीचे खास वैशिष्ट्ये म्हणजे त्यांचे गोदावरी परिसरावर आणि प्राकृत भाषेवरील प्रेम हे होते.

सातवाहन काळात जातीव्यवस्था ही तत्कालीन रचनेचा मोठा आधारस्तंभ बनलेली होती. त्यामुळे सामाजिक रुढी, परंपरा, धर्मश्रद्धा आणि सामाजिक आचार हे घटक एकमेकांशी इतके एकरुप झाले होते की, या साच्यातच सामाजिक प्रगती तत्कालीन समाजात शक्य झालेली होती. शिवाय समाजातील एखाद्या गरिबाने जर गुन्हा केला असेल तर त्याला गुन्हेगारीची शिक्षा सुद्धा जातीच्या आधारावर देण्यात येत होती. परंतु या जातीतील हे दोष काढून टाकण्याचे कार्य बौद्ध व जैन धर्म यांनी जातीयता नष्ट करण्याचा प्रयत्न केला. परंतु या जातीतील हे दोष काढून टाकण्याचे कार्य बौद्ध व जैन धर्म यांनी जातीयता नष्ट करण्याचा प्रयत्न केला. परंतु जातीयतेचा प्रभाव असा काही कमी होवू शकला नाही. परिणामी जातीयतेचे सिद्धांताला अनुकूल अशीच सामाजिक धारणा स्मृतीकारांनी अंमलात आणली व जातीयतेचे एक प्रकारे समर्थनच केलेले दिसले. मनुस्मृतीवर आधारीत सातवाहनकालीन समाज रचना होती. सातवाहनकालीन समाज वर्णव्यवस्थेवर आधारित होता. त्याच आर्यांचे ब्राह्मण, क्षत्रिय आणि वैश्य असे तीन वर्ण होते आणि आर्येत्तरांचा शुद्र वर्णात समावेश होत असावा. आपस्तंभ, धर्मसुत्रात उग्र आणि चांडाल यांचा असा उल्लेख असल्याचा दिसून येतो. सातवाहन सम्राट स्वत: ब्राह्मण धर्माचे पुरस्कर्ते होते. सातवाहनांनी वैदिक धर्मास आश्रय दिला होता. हे नागनिकेच्या जुन्नर येथील शिलालेखावरुन आणि गौतमी बलश्रीच्या नाशिक येथील शिलालेखावरुन दिसून येते. सातवाहन काळात ब्राह्मणांचे महत्त्व वाढल्यामुळे मूर्ती पूजा लोकप्रिय बनल्याचे दिसून येते. या काळात चातुवर्ण व्यवस्थेत क्षत्रियांना अत्यंत महत्त्वाचे स्थान देण्यात आले होते. त्याचे महत्त्वाचे कार्य म्हणजे शस्त्रग्रहण आणि प्रजारक्षण ही होती. क्षत्रियानंतर समाजात वैश्यांना महत्त्वाचे स्थान होते. गोदावरी काठचा परिसर आर्थिकदृष्ट्या संपन्न असल्यामुळे हा परिसर आर्थिक आणि व्यापारविषयकच्या चळवळीसाठी प्राचीन काळापासून प्रसिद्ध आहे. त्यामुळे प्रस्थापित समाजरचनेत वैश्यांना महत्त्वाचे स्थान असल्याचे दिसून येते.

चातुवर्ण व्यवस्थेत चौथा वर्ण शुद्रांचा होता. त्यांचे प्रमुख कार्य सर्वांची सेवा करणे हे होते. या वर्णाचे लोक विविध धंद्यात गुणकारी होते आणि जे ज्ञान

ब्राह्मण गुरुपासून मिळणार नाही ते स्त्रिया व इतर वर्णापासून मिळवावे, असे आपस्तंभ सांगतो. अंतिम घटक हा शुद्र असल्यामुळे शुद्रांनी आपल्या गुणामुळे मानाचे स्थान प्राप्त केल्याचे दिसून येते.

सातवाहन काळात सोळा संस्कारांना अत्यंत महत्त्वाचे स्थान होते. त्यात विवाह पद्धती महत्त्वाची समजली गेली. या काळात विवाहाचे आठ प्रकार होते. ब्राह्म, दैव, आर्ष, प्रजापत्य, आसुर, गांधर्व, राक्षस आणि पैशाच हे विवाहाचे प्रकार आहेत. यापैकी सुरुवातीचे चार प्रकार अत्यंत महत्त्वाचे होते. राक्षस आणि पैशाच विवाह निंद्य समजल्या जात होते. विवाह वधू-वरांनी आपल्या संमतीने करावा अशी समाजमान्यता असल्याचे दिसून येते.

सातवाहन काळात पुनर्विवाहाची पद्धत असल्याचे दिसून येते. शक्यतोवर दुसरा विवाह दिराशीच करावा असा आग्रह असल्याचे दिसून येते. प्राचीन काळापासून बहुपत्नीत्व ही प्रथा राजघराण्यांपुरतीच मर्यादित असावी. सामान्यत: सामान्य लोक एक विवाह करीत असत. विशेष म्हणजे आपला वंश वाढविण्यासाठी काही लोक दुसरा विवाह देखील करीत. त्यामध्ये पारलौकिक कल्याणाची भावना असे. वंध्य किंवा आजारी असलेली स्त्री आपल्या पतीला दुसरा विवाह करण्यास भाग पाडत असे, असा उल्लेख वात्सायनाच्या कामसुत्रात आलेला आहे.

सातवाहन काळात संयुक्त कुटुंब पद्धती अस्तित्वात होती आणि वडिलांच्या मताला महत्व असल्याचे दिसून येते. सातवाहन काळातील एकत्र कुटुंबात आपल्या पतीबरोबर पत्नीलाही महत्वाचे स्थान होते. कान्हेरी आणि नाशिक येथील लेण्यांतील एका दान देणाऱ्याने धर्मदायाचे पुण्य स्वत:साठी तर घेतले आहेच पण कुटुंबातील आई, वडील, पत्नी, भाऊ, बहिण, पुत्र आणि कन्या ह्यांच्यासाठीही राखून ठेवले आहे.

सातवाहनकाळात स्त्रियांना वेदाभ्यास नाकारण्यात आला होता. उपनयन हा विधी अस्तित्वात होता. मुलांचे उपनयनाबरोबर मुलींच्या उपनयनाला सुद्धा मान्यता होती. मुलींचा उपनयन विधी हा वयाच्या आठव्या वर्षी करण्यात येत असे. मात्र नंतरच्या काळात उपनयनाचे वय कमी झाल्याने वय मुलीच्या विवाह योग्य मानल्या जावू लागले. त्यामुळे उपनयनानंतर वेदाभ्यासाची संधी न मिळताच लग्न होत असे. त्यामुळे वैदिक मंत्र हे फक्त विवाह होतानाच स्त्रिच्या कानावर पडत असत. स्त्रियांसाठी विवाहापुरताच वैदिक मंत्रांचा संबंध मर्यादित राहिला.

सातवाहनकालीन स्त्रियांना सण समारंभ असला म्हणजे नटण्या मुरडण्याचा फार आनंद वाटत असे आणि सण समारंभ असले म्हणजे त्यानिमित्ताने काही खास विविध प्रकारचे समारोहही आयोजित करीत असल्याचे दिसून येते. ठिकठिकाणच्या शिल्पाकृतीवरुन सातवाहनकाळातील स्त्री-पुरुषांनी केशभुषा, वेशभुषा कशी होती आणि अलंकार कोणते वापरत असत याचा अंदाज येतो. उत्खननात मिळालेल्या पुराव्यांवरुनही त्या काळातील जीवन पद्धती वरील माहिती मिळते. सोपारा, नाशिक, पैठण येथे उत्खनन केले असता त्या उत्खननात स्त्रियांची अलंकाराचा खजिना निदर्शनास आला.

सातवाहनकालीन समाजात सतीची चाल होती किंवा नाही हे निश्चितपणे सांगता येत नाही. त्या काळातील एकाही लेखात सती प्रथेचा उल्लेख आढळून आलेला दिसत नाही. सातवाहनकालीन समाज स्त्रिया पडदा पद्धतीचा अवलंब करीत नव्हत्या.

संदर्भ ग्रंथसूची

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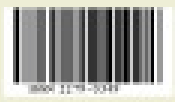

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